

I MATERIAL SAFETY DATA SHEET

(Design to comply with OSHA's 29CFR 1910.1200 Standards)

PRODUCT NAME: "ANTI-HYDRO®"

GENERIC NAME: Cement Admixture (Aqueous Solution/
several materials)

PACKAGING: ¼, 1, 5, 30 or 55 gallon container

DOT CLASSIFICATION (49 CFR 173): Not Regulated

SHIPPING NAME: Cement Waterproofing Compound

HMIS RATINGS: Health-1, Flammability-0, Reactivity-0, Protection- See VI (0=Minimal, 1=Slight, 2=Moderate, 3=Serious 4=Severe)

WHMIS Classification (Canada): **D2B** - eye or skin irritant.



ANTI-HYDRO INTERNATIONAL, INC.

45 River Road, Flemington, New Jersey 08822

PHONE (for information): 1-800-777-1773

EMERGENCY PHONE NUMBERS:

1-800-424-9300 (CHEMTREC)

DATE ISSUED: January, 2005

PAGE: 1 of 2

CAS/UN Number: Mixture, Non-Hazardous

II INGREDIENTS

DESCRIPTION	CAS #	OSHA Threshold Limit	ACGIH Threshold Limit	WT% (Optional)
P. "Anti-Hydro®"	TSRN 223176085-ATH*	No Data (SEE SECTION III)	No Data (SEE SECTION III)	100

* Trade Secret Registration Numbers (TSRNs) for this product is registered with the Right To Know Program (Trade Secret Provisions), New Jersey Dept. of Health.

III HEALTH HAZARDS / ROUTES OF ENTRY

CAUTION: Product contains CaCl₂.

EYE CONTACT:

May irritate or burn eyes.

SKIN CONTACT:

May cause skin irritation.

INHALATION (BREATHING):

Unlikely due to physical properties. Mist inhalation may cause irritation to upper respiratory tract.

INGESTION:

Small amounts are not likely to cause injury. Large amounts may cause gastrointestinal irritation.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

Prolonged or repeated exposure may cause skin irritation, even burn (more severe response if skin is abraded or broken skin). Heated material may cause severe skin and corneal injury and thermal burns. Swallowing larger amount than incidental to normal handling operations may cause gastrointestinal irritation or ulceration. Preclude from exposure those individuals having history of respiratory illness, asthmatic conditions and pre-existing eye or skin damages or disorders.

UNUSUAL CHRONIC TOXICITY: None

ECOTOXICOLOGY: Practically non-toxic to aquatic organism on acute basis.

IV EMERGENCY AND FIRST AID PROCEDURES

EYE CONTACT:

Promptly flush eye(s) with plenty of clean, cool water for at least 15 minutes. If necessary get medical attention.

SKIN CONTACT:

Wash exposed skin with plenty of running water, if necessary remove clothing. If necessary get medical attention.

INHALATION (BREATHING):

If vapor or spray mist inhaled, remove to fresh air and get medical attention.

INGESTION (SWALLOWING):

Do not induce vomiting, give large amount of water or milk if available and get medical attention. Never give anything by mouth to an unconscious person.

V IDENTIFICATION AND PHYSICAL DATA

SPECIFIC GRAVITY(H₂O=1): Approx.1.22

pH: Neutral or slightly alkaline

EVAPORATION RATE (Ether=1): N/A

VAPOR DENSITY (Air=1): N/A, water vapor only.

APPEARANCE/ODOR: Slightly turbid, pinkish Liquid/Odorless

VOC Content: 0%

BOILING POINT: Approx. 216° F (102° C)

VAPOR PRESSURE (mm Hg.): N/A

SOLUBILITY IN WATER: Complete

MATERIAL SAFETY DATA SHEET



ANTI-HYDRO INTERNATIONAL, INC.

PRODUCT NAME: "ANTI-HYDRO®"

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VI SPECIAL PROTECTIONS, CONTROLS AND STORAGE

RESPIRATORY PROTECTION:

In misty conditions, wear approved mist respirator (should not contain any corrodible material).

EYE PROTECTION:

Wear tightly fitted chemical/safety goggles. Do not wear contact lenses.

HAND, ARMS, AND BODY PROTECTION:

Wear rubber gloves, long-sleeve shirt and trousers, work boots and apron.

VENTILATION:

Use local/Mechanical exhaust for misty conditions.

OTHER PROTECTIVE MEASURES:

Safety shower and eye wash station. Avoid skin and eye(s) contacts. KEEP AWAY FROM CHILDREN, animals and edible items. Avoid contacts with incompatible materials.

STORAGE PRECAUTIONS:

Keep containers tightly closed and protect from weather. KEEP AWAY FROM CHILDREN, animals and edible items.

VII REACTIVITY DATA

STABILITY: Stable. Hygroscopic.

CONDITION TO AVOID: Incompatible materials and high temperatures.

MATERIALS TO AVOID: Water-reactive materials, such as sodium; zinc as in galvanized iron; metals such as brass, aluminum or ferrous metals, acids such as sulfuric acid; methyl vinyl ether; boron trifluoride and calcium oxide.

HAZARDOUS POLYMERIZATION: Will not occur

CONDITION TO AVOID: Incompatible materials and high temperatures.

HAZARDOUS DECOMPOSITION PRODUCTS: Chloride fumes at temperatures above 1600°C.

VIII FIRE AND EXPLOSION HAZARD DATA

FLASH POINT: Not Flammable

AUTO IGNITION TEMPERATURE: N/A

FLAMMABLE LIMITS (in Air % by Vol): LEL (Lower): N/A

UEL (Upper): N/A

EXTINGUISHING MEDIA:

Product is not combustible or flammable. Use those extinguishing media suggested for the surrounding fire.

UNUSUAL FIRE & EXPLOSION HAZARDS:

Zinc as in galvanized iron: yields hydrogen gas, which may explode.

SPECIAL FIRE FIGHTING PROCEDURES:

Product is not combustible or flammable. Use special fire fighting procedures suggested for the surrounding fire.

IX SPILL OR LEAK PROCEDURES

CALL CENTREC AT (800) 424-9300 IN CONT. U.S.A.

STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED*:

Remove unnecessary personnel from the area. Wear protective equipment and clothing (*SEE SECTIONS III & VI*).

Protect any waterway, edible items and animals. Avoid contact with incompatible materials. Contain **small spills** and absorb with commercial absorbents or sand. Dike **large spills** with commercial absorbents, sand, etc.

Transfer absorbed material into properly labeled, suitable open waste containers. Cautiously spray residue with plenty of water, collect by mopping and transfer in to the waste containers. KEEP AWAY FROM CHILDREN.

WASTE DISPOSAL METHOD:

Dispose off in accordance with local, state and federal government regulations.

DISCLAIMER: To the best of our knowledge, the information contained herein is accurate. However Anti-Hydro International, Inc. does not assume liability whatsoever for the accuracy or completeness of information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown health/fire hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist. This disclaimer may not be detached from this MSDS. Any copying and redistribution of this MSDS shall also include copying and redistribution of this disclaimer.

SAFETY DATA SHEET

according to Regulation (EC) No. 453/2010

AQUAGEL GOLD SEAL®

Revision Date: 04-Sep-2015

Revision Number: 31

SECTION 1: Identification of the substance/mixture and of the company/undertaking**1.1. Product Identifier**

Product Name AQUAGEL GOLD SEAL®
Internal ID Code HM003470

1.2. Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Viscosifier
Sector of use SU2a - Mining, (without offshore industries)
SU2b - Offshore industries
Product category PC20 - Products such as pH-regulators, flocculants, precipitants, neutralization agents, other unspecific
Process categories PROC 26 - Handling of solid inorganic substances at ambient temperature

1.3. Details of the supplier of the safety data sheet

Halliburton Manufacturing Services, Ltd.
Halliburton House, Howemoss Crescent
Kirkhill Industrial Estate
Dyce
Aberdeen, AB21 0GN
United Kingdom

www.halliburton.com

For further information, please contact

E-Mail address: fdunexchem@halliburton.com

1.4. Emergency telephone number

+44 8 08 189 0979 / 1-760-476-3961

Emergency telephone - §45 - (EC)1272/2008	
Europe	112
Croatia	Centar za kontrolu otrovanja (CKO): (+385 1) 23-48-342 (Poison Control Center (PCC) - Institute for Medical Research and Occupational Health)
Cyprus	+210 7793777
Denmark	Poison Control Hotline (DK): +45 82 12 12 12
France	ORFILA (FR): + 01 45 42 59 59
Germany	Poison Center Berlin (DE): +49 030 30686 790
Italy	Poison Center, Milan (IT): +39 02 6610 1029
Netherlands	National Poisons Information Center (NL): +31 30 274 88 88 (NB: this service is only available to health professionals)
Norway	Poisons Information (NO): +47 22 591300
Poland	Poison Control and Information Centre, Warsaw (PL): +48 22 619 66 54; +48 22 619 08 97
Romania	+40 21 318 36 06
Spain	Poison Information Service (ES): +34 91 562 04 20
United Kingdom	NHS Direct (UK): +44 0845 46 47

SECTION 2: Hazards Identification

2.1. Classification of the substance or mixture**REGULATION (EC) No 1272/2008**

Specific Target Organ Toxicity - (Repeated Exposure)

Category 2 - (H373)

2.2. Label Elements**Hazard Pictograms****Signal Word****Warning****Hazard Statements**

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements - EU (§28, 1272/2008)

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P314 - Get medical attention/advice if you feel unwell

P501 - Dispose of contents/container to an approved waste disposal plant

Contains**Substances**

Crystalline silica, quartz

Crystalline silica, cristobalite

Crystalline silica, tridymite

CAS Number

14808-60-7

14464-46-1

15468-32-3

2.3. Other Hazards

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT).

This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

SECTION 3: Composition/information on Ingredients**3.1. Substances****Substance**

Substances	EINECS	CAS Number	PERCENT (w/w)	EU - CLP Substance Classification	REACH No.
Crystalline silica, quartz	238-878-4	14808-60-7	1 - 5%	STOT RE 1 (H372)	No data available
Crystalline silica, cristobalite	238-455-4	14464-46-1	0.1 - 1%	STOT RE 1 (H372)	No data available
Crystalline silica, tridymite	239-487-1	15468-32-3	0.1 - 1%	STOT RE 1 (H372)	No data available

For the full text of the H-phrases mentioned in this Section, see Section 16**SECTION 4: First aid measures****4.1. Description of first aid measures****Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes

In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.

Skin

Wash with soap and water. Get medical attention if irritation persists.

Ingestion

Under normal conditions, first aid procedures are not required.

4.2. Most Important symptoms and effects, both acute and delayed

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician

Treat symptomatically

SECTION 5: Firefighting Measures

5.1. Extinguishing media**Suitable Extinguishing Media**

All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

5.2. Special hazards arising from the substance or mixture**Special Exposure Hazards**

Not applicable.

5.3. Advice for firefighters**Special Protective Equipment for Fire-Fighters**

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

6.4. Reference to other sections

See Section 8 and 13 for additional information.

SECTION 7: Handling and Storage

7.1. Precautions for Safe Handling

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container. Store locked up. Product has a shelf life of 24 months.

7.3. Specific End Use(s)**Exposure Scenario**

No information available

Other Guidelines

No information available

SECTION 8: Exposure Controls/Personal Protection

8.1. Control parameters

Exposure Limits

Substances	CAS Number	EU	UK	Netherlands	France
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 0.1 mg/m ³	TWA: 0.075 mg/m ³	TWA: 0.1 mg/m ³
Crystalline silica, cristobalite	14464-46-1	Not applicable	Not applicable	TWA: 0.075 mg/m ³	TWA: 0.05 mg/m ³
Crystalline silica, tridymite	15468-32-3	Not applicable	Not applicable	TWA: 0.075 mg/m ³	TWA: 0.05 mg/m ³

Substances	CAS Number	Germany	Spain	Portugal	Finland
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 0.1 mg/m ³	TWA: 0.025 mg/m ³	TWA: 0.05 mg/m ³
Crystalline silica, cristobalite	14464-46-1	Not applicable	TWA: 0.05 mg/m ³	TWA: 0.025 mg/m ³	TWA: 0.05 mg/m ³
Crystalline silica, tridymite	15468-32-3	Not applicable	Not applicable	Not applicable	TWA: 0.05 mg/m ³

Substances	CAS Number	Austria	Ireland	Switzerland	Norway
Crystalline silica, quartz	14808-60-7	TWA: 0.15 mg/m ³	0.1 mg/m ³ TWA (respirable dust) 0.3 mg/m ³ STEL (calculated, respirable dust)	TWA: 0.15 mg/m ³	TWA: 0.3 mg/m ³ TWA: 0.1 mg/m ³ STEL: 0.9 mg/m ³ STEL: 0.3 mg/m ³
Crystalline silica, cristobalite	14464-46-1	TWA: 0.15 mg/m ³	0.1 mg/m ³ TWA (respirable dust) 0.3 mg/m ³ STEL (calculated, respirable dust)	TWA: 0.15 mg/m ³	TWA: 0.15 mg/m ³ TWA: 0.05 mg/m ³ STEL: 0.45 mg/m ³ STEL: 0.15 mg/m ³
Crystalline silica, tridymite	15468-32-3	TWA: 0.15 mg/m ³	0.1 mg/m ³ TWA (respirable dust) 0.3 mg/m ³ STEL (calculated, respirable dust)	TWA: 0.15 mg/m ³	TWA: 0.15 mg/m ³ TWA: 0.05 mg/m ³ STEL: 0.45 mg/m ³ STEL: 0.15 mg/m ³

Substances	CAS Number	Italy	Poland	Hungary	Czech Republic
Crystalline silica, quartz	14808-60-7	Not applicable	TWA: 2 mg/m ³ TWA: 0.3 mg/m ³ TWA: 4.0 mg/m ³ TWA: 1.0 mg/m ³	TWA: 0.15 mg/m ³	TWA: 0.1 mg/m ³
Crystalline silica, cristobalite	14464-46-1	Not applicable	TWA: 2 mg/m ³ TWA: 0.3 mg/m ³ TWA: 4.0 mg/m ³ TWA: 1.0 mg/m ³	TWA: 0.15 mg/m ³	TWA: 0.1 mg/m ³
Crystalline silica, tridymite	15468-32-3	Not applicable	TWA: 2 mg/m ³ TWA: 0.3 mg/m ³ TWA: 4.0 mg/m ³ TWA: 1.0 mg/m ³	TWA: 0.15 mg/m ³	TWA: 0.1 mg/m ³

Substances	CAS Number	Denmark	Romania	Croatia	Cyprus
Crystalline silica, quartz	14808-60-7	TWA: 0.3 mg/m ³ TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³	TWA: 0.1 mg/m ³	Not applicable
Crystalline silica, cristobalite	14464-46-1	TWA: 0.15 mg/m ³ TWA: 0.05 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.05 mg/m ³	Not applicable
Crystalline silica, tridymite	15468-32-3	TWA: 0.15 mg/m ³ TWA: 0.05 mg/m ³	TWA: 0.05 mg/m ³	TWA: 0.05 mg/m ³	Not applicable

Derived No Effect Level (DNEL)

No information available.

Worker**General Population****Predicted No Effect Concentration (PNEC)**

No information available.

8.2. Exposure controls**Engineering Controls**

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

Personal protective equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection	If engineering controls and work practices cannot keep exposure below occupational exposure limits or if exposure is unknown, wear a NIOSH certified, European Standard EN 149, AS/NZS 1715:2009, or equivalent respirator when using this product. Selection of and instruction on using all personal protective equipment, including respirators, should be performed by an Industrial Hygienist or other qualified professional. Dust/mist respirator. (N95, P2/P3)
Hand Protection	Normal work gloves.
Skin Protection	Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.
Eye Protection	Wear safety glasses or goggles to protect against exposure.
Other Precautions	None known.
Environmental Exposure Controls	No information available

SECTION 9: Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Powder
Odor: Mild earthy

Color: Tan
Odor Threshold: No information available

<u>Property</u>	<u>Values</u>
Remarks/ - Method	
pH:	8-10
Freezing Point/Range	No data available
Melting Point/Range	No data available
Boiling Point/Range	No data available
Flash Point	No data available
Flammability (solid, gas)	No data available
upper flammability limit	No data available
lower flammability limit	No data available
Evaporation rate	No data available
Vapor Pressure	No data available
Vapor Density	No data available
Specific Gravity	2.6
Water Solubility	Insoluble in water
Solubility in other solvents	No data available
Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%) No data available

SECTION 10: Stability and Reactivity

10.1. Reactivity

Not expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

None anticipated

10.5. Incompatible Materials

Hydrofluoric acid.

10.6. Hazardous Decomposition Products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

SECTION 11: Toxicological Information

11.1. Information on Toxicological Effects

Acute Toxicity

Inhalation

Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

Eye Contact

May cause mechanical irritation to eye.

Skin Contact

May cause mechanical skin irritation.

Ingestion

None known.

Chronic Effects/Carcinogenicity

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2). There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Crystalline silica, quartz	14808-60-7	>15,000 mg/kg (Human)	No data available	No data available
Crystalline silica, cristobalite	14464-46-1	>15,000 mg/kg (Human)	No data available	No data available
Crystalline silica, tridymite	15468-32-3	>15,000 mg/kg (Human)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin
Crystalline silica, cristobalite	14464-46-1	Non-irritating to the skin
Crystalline silica, tridymite	15468-32-3	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.
Crystalline silica, cristobalite	14464-46-1	Mechanical irritation of the eyes is possible.
Crystalline silica, tridymite	15468-32-3	Mechanical irritation of the eyes is possible.

Substances	CAS Number	Skin Sensitization
Crystalline silica, quartz	14808-60-7	No information available.
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	Respiratory Sensitization
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Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	Mutagenic Effects
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.
Crystalline silica, cristobalite	14464-46-1	Not regarded as mutagenic.
Crystalline silica, tridymite	15468-32-3	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.
Crystalline silica, cristobalite	14464-46-1	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.
Crystalline silica, tridymite	15468-32-3	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.

Substances	CAS Number	Reproductive toxicity
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	STOT - single exposure
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, cristobalite	14464-46-1	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, tridymite	15468-32-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
Crystalline silica, cristobalite	14464-46-1	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
Crystalline silica, tridymite	15468-32-3	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Substances	CAS Number	Aspiration hazard
Crystalline silica, quartz	14808-60-7	Not applicable
Crystalline silica, cristobalite	14464-46-1	Not applicable
Crystalline silica, tridymite	15468-32-3	Not applicable

SECTION 12: Ecological Information

12.1. Toxicity Ecotoxicity Effects

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Crystalline silica, quartz	14808-60-7	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Crystalline silica, cristobalite	14464-46-1	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Crystalline silica, tridymite	15468-32-3	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, tridymite	15468-32-3	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Does not bioaccumulate

Substances	CAS Number	Log Pow
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

12.4. Mobility in soil

Substances	CAS Number	Mobility
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

12.5. Results of PBT and vPvB assessment

This substance is not considered to be persistent, bioaccumulating nor toxic (PBT). This substance is not considered to be very persistent nor very bioaccumulating (vPvB).

Substances	PBT and vPvB assessment
Crystalline silica, quartz	Not PBT/vPvB
Crystalline silica, cristobalite	Not PBT/vPvB
Crystalline silica, tridymite	Not PBT/vPvB

12.6. Other adverse effects**Endocrine Disruptor Information**

This product does not contain any known or suspected endocrine disruptors

SECTION 13: Disposal Considerations
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13.1. Waste treatment methods**Disposal Method**

If practical, recover and reclaim, recycle, or reuse by the guidelines of an approved local reuse program. Should contaminated product become a waste, dispose of in a licensed industrial landfill according to federal, state, and local regulations. Substance should NOT be deposited into a sewage facility.

Contaminated Packaging

Follow all applicable national or local regulations. Contaminated packaging may be disposed of by: rendering packaging incapable of containing any substance, or treating packaging to remove residual contents, or treating packaging to make sure the residual contents are no longer hazardous, or by disposing of packaging into commercial waste collection.

SECTION 14: Transport Information
--

IMDG/IMO

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

RID

UN Number:	Not restricted
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UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

ADR

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

14.1. UN Number: Not restricted

14.2. UN Proper Shipping Name: Not restricted

14.3. Transport Hazard Class(es): Not applicable

14.4. Packing Group: Not applicable

14.5. Environmental Hazards: Not applicable

14.6. Special Precautions for User: None

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

SECTION 15: Regulatory Information

15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture**International Inventories**

EINECS Inventory	This product, and all its components, complies with EINECS
US TSCA Inventory	All components listed on inventory or are exempt.
Canadian DSL Inventory	All components listed on inventory or are exempt.

Legend

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical Substances/EU List of Notified Chemical Substances

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

Germany, Water Endangering Classes (WGK) WGK 0: Generally not water endangering.

List of the carcinogenic, mutagenic and toxic for reproduction substances SZW

Crystalline silica, quartz

Crystalline silica, cristobalite

Crystalline silica, tridymite

15.2. Chemical Safety Assessment

No information available

SECTION 16: Other Information

Full text of H-Statements referred to under sections 2 and 3

H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

H373 - May cause damage to organs through prolonged or repeated exposure if inhaled

Key or legend to abbreviations and acronyms

bw – body weight

CAS – Chemical Abstracts Service

CLP – REGULATION (EC) No 1272/2008 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL on Classification, Labelling and Packaging of substances and mixtures

EC – European Commission

EC10 – Effective Concentration 10%

EC50 – Effective Concentration 50%

EEC – European Economic Community

ErC50 – Effective Concentration growth rate 50%

IBC Code – International Code for the Construction and Equipment of Ships carrying Dangerous Chemicals in Bulk

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL0 – Lethal Loading 0%

LL50 – Lethal Loading 50%

MARPOL – International Convention for the Prevention of Pollution from Ships

mg/kg – milligram/kilogram

mg/L – milligram/liter

NIOSH – National Institute for Occupational Safety and Health

NOEC – No Observed Effect Concentration

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PBT – Persistent Bioaccumulative and Toxic

PC – Chemical Product category

PEL – Permissible Exposure Limit

ppm – parts per million

PROC – Process category

REACH – REGULATION (EC) No 1907/2006 OF THE EUROPEAN PARLIAMENT AND OF THE COUNCIL concerning the Registration, Evaluation, Authorisation and Restriction of Chemicals

STEL – Short Term Exposure Limit

SU – Sector of Use category

Key literature references and sources for data

www.ChemADVISOR.com/

NZ CCID

Revision Date: 04-Sep-2015

Revision Note

SDS sections updated: 1

This safety data sheet complies with the requirements of Regulation (EC) No. 453/2010

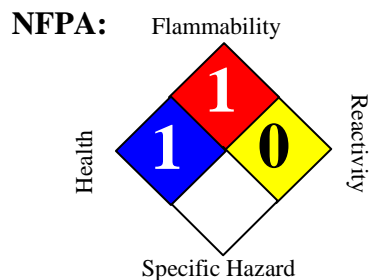
Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

Safety Data Sheet

Asphalt



SECTION 1. PRODUCT AND COMPANY IDENTIFICATION

Product name	:	Asphalt			
Synonyms	:	Pitch, Paving Asphalt, Performance Graded Asphalt, (PG) PG 52-28, PG 58-22, PG 64-25, 888100004477			
SDS Number	:	888100004477	Version	:	1.15
Product Use Description	:	Construction material			
Company	:	For: Tesoro Refining & Marketing Co. 19100 Ridgewood Parkway, San Antonio, TX 78259			
Tesoro Call Center	:	(877) 783-7676	Chemtrec (Emergency Contact)	:	(800) 424-9300

SECTION 2. HAZARDS IDENTIFICATION

Classifications : Skin Irritation – Category 2
Eye Irritation – Category 2
Carcinogenicity – Category 2

Pictograms



Signal Word WARNING

Hazard Statements Causes skin irritation.
Causes eye irritation.
Suspected of causing cancer.
May release toxic hydrogen sulfide gas that could accumulate at toxic concentrations inside containers of heated asphalt.

Precautionary Statements

Prevention Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Wash hands and any contacted skin thoroughly after handling.
Wear protective gloves of materials such as leather or thick rubber, and long sleeved clothing.
Wear safety eye glasses with side shields, and if needed to prevent splattering

onto face, wear face shield.

Response

If exposed or concerned: Get medical advice or attention.
If on skin: Wash with plenty of water and hand cleaner. See Section 4 for additional skin contact first aid measures.
Specific treatment: See Section 4 First Aid Measures for additional information.
If skin irritation occurs: Get medical attention.
Take off contaminated clothing and wash it before reuse.
If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing.
If eye irritation persists: Get medical attention.

Storage

Store locked up.

Disposal

Dispose of contents/containers in accordance with local, state and national regulations.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS-No.	Weight %
Asphalt	8052-42-4	100%
Hydrogen Sulfide	7783-06-4	Trace

SECTION 4. FIRST AID MEASURES

General advice	: Remove from exposure, lie down. Take off all contaminated clothing immediately. When symptoms persist or in all cases of doubt seek medical advice. Never give anything by mouth to an unconscious person.
Inhalation	: Remove to fresh air. If breathing is irregular or stopped, administer artificial respiration. Seek medical attention immediately.
Skin contact	: Cool skin rapidly with cold water after contact with molten material. Take off all contaminated clothing immediately. Wash off with soap and water but do not attempt to remove asphalt that adheres to skin before obtaining medical assistance. Wash contaminated clothing before re-use. If symptoms persist, seek medical attention immediately.
Eye contact	: Remove contact lenses. Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. If eye irritation persists, seek medical attention.
Ingestion	: Do NOT induce vomiting. Seek medical attention immediately. Clean mouth with water and drink afterwards plenty of water. If a person vomits when lying on his back, place him in the recovery position.

SECTION 5. FIRE-FIGHTING MEASURES

Suitable extinguishing media	: SMALL FIRES: Any extinguisher suitable for Class B fires, dry chemical, CO ₂ , water spray, fire fighting foam, or Halon. LARGE FIRES: Water spray, fog or fire fighting foam. Water may be ineffective for fighting the fire, but may be used to cool fire-exposed containers.
Specific hazards during fire	: Isolate area around container involved in fire. Cool tanks, shells, and containers

fighting	exposed to fire and excessive heat with water. For massive fires the use of unmanned hose holders or monitor nozzles may be advantageous to further minimize personnel exposure. Major fires may require withdrawal, allowing the tank to burn. Large storage tank fires typically require specially trained personnel and equipment to extinguish the fire, often including the need for properly applied fire fighting foam.
Special protective equipment for fire-fighters	: Use NIOSH/MSHA approved positive pressure self-contained breathing apparatus and fully protective clothing such as bunker gear if needed to prevent exposure. Withdraw immediately from the area if there is a rising sound from a venting safety device or discoloration of vessels, tanks, or pipelines.
Further information	: Vapors may form explosive mixture with air. Flammable vapor production at ambient temperature in the open is expected to be minimal unless the oil is heated above its flash point. When heated above flash point and mixed with air and exposed to an ignition source, flammable vapors can burn in the open or explode in confined spaces. Being heavier than air, vapors may travel long distances to an ignition source and flash back.

SECTION 6. ACCIDENTAL RELEASE MEASURES

Personal precautions	: ACTIVATE FACILITY'S SPILL CONTINGENCY OR EMERGENCY RESPONSE PLAN. Evacuate nonessential personnel and remove or secure all ignition sources. Consider wind direction; stay upwind and uphill, if possible. Evaluate the direction of product travel, diking, sewers, etc. to confirm spill areas. Response and clean-up crews must be properly trained and must utilize proper protective equipment.
	: Carefully contain and stop the source of the spill, if safe to do so. Protect bodies of water by diking, absorbents, or absorbent boom, if possible. Do not flush down sewer or drainage systems, unless system is designed and permitted to handle such material. Authorities should be notified if reportable quantity release occurs.
Methods for cleaning up	: Soak up condensate with inert absorbent material and collect in ventilated waste container for disposal.

SECTION 7. HANDLING AND STORAGE

Precautions for safe handling	: Use only in well-ventilated areas.
	: Do not smoke near areas where material is handled or stored. The product should only be used in areas where electrical classification meets the product rating for this product, i.e. intrinsically safe. Use only in area provided with appropriate exhaust ventilation. Vapors may form explosive mixtures with air.
Conditions for safe storage, including incompatibilities	: Product is generally transported and stored hot (typically at temperatures above 110°F and below 350°F). Handle as a combustible liquid. Keep away from heat, sparks, and open flame! Electrical equipment should be approved for classified area. Bond and ground containers during product transfer to reduce the possibility of static-initiated fire or explosion. Consult API Recommended Practice 2023 for additional guidance. Store distant from fire and ignition sources. No smoking near areas where material is stored or used.
	: Keep away from flame, sparks, excessive temperatures and open flame. Use approved vented containers. Keep containers closed and clearly labeled. Empty product containers or vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose such containers to sources of ignition.

Store in a well-ventilated area. Avoid storage near incompatible materials. The cleaning of tanks previously containing this product should follow API Recommended Practice (RP) 2013 "Cleaning Mobile Tanks In Flammable and Combustible Liquid Service" and API RP 2015 "Cleaning Petroleum Storage Tanks".

Hydrogen sulfide may accumulate in tanks and bulk transport compartments. Consider appropriate respiratory protection (see Section 8). Stand upwind. Avoid vapors when opening hatches and dome covers. Confined spaces should be ventilated prior to entry.

SECTION 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

List	Components	CAS-No.	Type:	Value
OSHA	Hydrogen Sulfide	7783-06-4	STEL	20 ppm
ACGIH	Asphalt	8052-42-4	TWA	0.5 mg/m3
	Hydrogen Sulfide	7783-06-4	TWA	1 ppm
		7783-06-4	STEL	5 ppm

- Engineering measures** : Engineering controls are normally required when handling hot materials. Use process enclosures, local exhaust ventilation, or other controls to maintain airborne levels below recommended exposure limits (see below). Engineering controls should meet applicable requirements of the National Electrical Code (NEC) Standards. Ensure that an emergency eye wash station and safety shower is located near the work-station.
- Eye protection** : Use a full-face shield and chemical safety goggles if handling heated material. With product at ambient temperatures, safety glasses equipped with side shields are recommended as minimum protection in industrial settings. An eye wash station immediately available to the work area.
- Hand protection** : When handling product at elevated temperatures, use long-cuffed leather or heat-resistant gloves. When product is at ambient temperatures, use gloves constructed of chemical resistant materials such as heavy nitrile rubber if frequent or prolonged contact is expected.
- Skin and body protection** : Use insulated, heat-resistant clothing when handling heated material. Use a full-body heat-resistant or internally cooled suit when work conditions dictate.
- Respiratory protection** : Contaminant air concentrations determine the level of respiratory protection required. Use only NIOSH-approved respiratory equipment within the limits of the protection factors for that equipment. Use supplied air respirators when H₂S concentrations are expected to exceed applicable workplace exposure levels. Do not use air purifying respiratory equipment when considering elevated H₂S concentrations. Respiratory equipment must be selected on the basis of the maximum expected air concentration.

Hygiene measures : Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. DO NOT use gasoline, kerosene, solvents, or harsh abrasive skin cleaners to clean skin. Prevent skin contact when handling heated material. Use insulated, heat-resistant clothing when handling heated material. Use a full-body heat-resistant or internally cooled suit when work conditions dictate.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	: Brown to black solid at ambient temperature, viscous liquid when heated
Odor	Characteristic sour, tar-like odor
Odor Threshold	No data available
pH	Not applicable
Melting point / freezing point	30 – 130°C (86 – 149°F)
Boiling point	>400°C (>752°F)
Flash point	>230°C (>446°F)
Evaporation rate	Negligible
Flammability (solid, gas)	Not applicable
Lower explosive limit	Not applicable
Upper explosive limit	Not applicable
Freezing point	No data available
Vapor Pressure	Negligible
Vapor Density (air =1)	Not applicable
Relative Density (water = 1)	1.0 – 1.1 g/mL
Solubility	No data available
Partition coefficient (n-octanol/water)	>6
Auto-ignition temperature	No data available
Decomposition temperature	No data available
Viscosity, kinematic	No data available

SECTION 10. STABILITY AND REACTIVITY

Reactivity	: Forms a pressure-sensitive explosive if contacted by liquid oxygen until oxygen dissipates as a gas out of the asphalt.
Chemical stability	Stable under ambient and anticipated storage and handling conditions

Hazardous reactions	Stable under normal conditions of use; however, incompatible with strong acids and strong oxidizers. Keep away from oxidizing agents, and acidic or alkaline products. Do not allow molten products to contact water or liquids as this can cause violent eruptions. Hydrogen Sulfide from the product can react with iron in asphalt storage tank to form iron sulfide, a pyrophoric (a material which ignites spontaneously in air below 130°F) material.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong acids and oxidizing agents
Hazardous decomposition products	In case of fire hazardous decomposition products may be produced such as: Carbon oxides Hydrogen sulfide and other sulfur-containing gases can evolve from this product particularly at elevated temperatures. No decomposition products in case of appropriate storage / handling / transport.

SECTION 11. TOXICOLOGICAL INFORMATION

Inhalation	: No significant adverse health effects are expected to occur upon short-term exposure to this product at ambient temperatures. Asphalt fumes have been associated with irritation of eyes nose and throat. Also, lower respiratory effects have been reported. Hydrogen sulfide (H ₂ S) can evolve when this product is stored or handled at elevated temperatures. H ₂ S can cause respiratory irritation and hypoxia. At low concentrations, H ₂ S has an odor of rotten eggs. At higher concentrations, H ₂ S odor is not apparent. DO NOT use odor as an indicator of exposure to H ₂ S.
Skin irritation	Heated asphalt can cause burns to the skin. May cause skin irritation with redness, an itching or burning feeling, and swelling of the skin. Exposure to sunlight and to asphalt vapors may amplify tendency for sunburns.
Eye irritation	Heated asphalt can cause burns to the eyes. Mists, vapors or fumes from this material can cause eye irritation with tearing, redness, or a stinging or burning feeling.
Ingestion	Contact with heated asphalt may cause burns. If asphalt at ambient temperatures is swallowed, no significant adverse health effects are anticipated. If swallowed in large quantities, asphalt can obstruct the intestine.
Further information	Heated asphalt could release hydrogen sulfide gas. Toxic amounts H ₂ S could accumulate inside vessels containing heated asphalt.
<u>Component:</u>	:
Asphalt	8052-42-4 <u>Acute oral toxicity:</u> LD50 rat Dose: 5,001 mg/kg <u>Acute dermal toxicity:</u> LD50 rat Dose: 2,001 mg/kg
<u>Component:</u>	:
NTP	This product, Asphalt (CAS-No.: 8052-42-4), may contain trace amounts of benzene a chemical known to cause cancer.
IARC	Asphalt (Bitumin) (CAS-No.: 8052-42-4) Group 2B possibly carcinogenic to humans
OSHA	This product, Asphalt (CAS-No.: 8052-42-4), may contain trace amounts of benzene a chemical known to cause cancer.

CA Prop 65

WARNING! This product contains a chemical known to the State of California to cause cancer.
Asphalt (CAS-No.: 8052-42-4)

SECTION 12. ECOLOGICAL INFORMATION

Additional ecological information : This product is estimated to have a slow rate of biodegradation. This product is not expected to bioaccumulate through food chains in the environment. Analysis for ecological effects has not been conducted on this product. Spills into water ways may be harmful to organisms and bottom feeders.

SECTION 13. DISPOSAL CONSIDERATIONS

Disposal : Recover as much spilled material as possible for reuse or recycling. Disposal of waste material must be conducted in accordance with RCRA regulations (see 40CFR 260 through 40 CFR 271).

SECTION 14. TRANSPORT INFORMATION

CFR

Proper shipping name : Elevated temperature liquid, n.o.s. (Asphalt)
UN-No. : 3257
Class : 9
Packing group : III
Hazard inducer : (Asphalt)

TDG

Proper shipping name : Elevated temperature liquid, n.o.s. (Asphalt)
UN-No. : UN3257
Class : 9
Packing group : III
Hazard inducer : (Asphalt)

IATA Cargo Transport

UN-No. : UN3257
Class : 9
Not permitted for transport

IATA Passenger Transport

UN-No. : UN3257
Class : 9
Not permitted for transport

IMDG-Code

UN-No. : UN 3257
Description of the goods : Elevated temperature liquid, n.o.s. (Asphalt)
Class : 9
Packaging group : III
IMDG-Labels : 9
EmS Number : F-A S-P
Marine pollutant : No

SECTION 15. REGULATORY INFORMATION**CERCLA SECTION 103 and SARA SECTION 304 (RELEASE TO THE ENVIRONMENT)**

The CERCLA definition of hazardous substances contains a "petroleum exclusion" clause which exempts crude oil. Fractions of crude oil, and products (both finished and intermediate) from the crude oil refining process and any indigenous components of such from the CERCLA Section 103 reporting requirements. However, other federal reporting requirements, including SARA Section 304, as well as the Clean Water Act may still apply.

TSCA Status : On TSCA Inventory

DSL Status : All components of this product are on the Canadian DSL list.

SARA 311/312 Hazards : Acute Health Hazard

PENN RTK US. Pennsylvania Worker and Community Right-to-Know Law (34 Pa. Code Chap. 301-323)

Components**CAS-No.****Asphalt**

8052-42-4

MASS RTK US. Massachusetts Commonwealth's Right-to-Know Law (Appendix A to 105 Code of Massachusetts Regulations Section 670.000)

Components**CAS-No.****Asphalt**

8052-42-4

NJ RTK US. New Jersey Worker and Community Right-to-Know Act (New Jersey Statute Annotated Section 34:5A-5)

Components**CAS-No.****Asphalt**

8052-42-4

hydrogen sulfide

7783-06-4

California Prop. 65 : WARNING! This product contains a chemical known to the State of California to cause cancer.

Asphalt

8052-42-4

SECTION 16. OTHER INFORMATION**Further information**

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Revision Date : 07/19/2012

150, 299, 302, 1561, 1596



SAFETY DATA SHEET

Product Trade Name:

BARA-KADE® BENTONITE

Revision Date: 02-Apr-2015

Revision Number: 10

1. Identification

1.1. Product Identifier

Product Trade Name: BARA-KADE® BENTONITE
Synonyms: None
Chemical Family: Mineral
Internal ID Code: HM005230

1.2 Recommended use and restrictions on use

Application: Additive
Uses Advised Against: No information available

1.3 Manufacturer's Name and Contact Details

Manufacturer/Supplier: BENTONITE Performance Minerals LLC
3000 N Sam Houston Parkway East
Houston, TX 77032

Telephone: (281) 871-7900
Fax: (281) 871-7940
Emergency Telephone: (281) 575-5000

Prepared By

Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

1.4. Emergency telephone number

Emergency Telephone Number: (281) 575-5000

2. Hazard(s) Identification

2.1 Classification in accordance with paragraph (d) of §1910.1200

Carcinogenicity	Category 1A - H350
Specific Target Organ Toxicity - (Repeated Exposure)	Category 1 - H372

2.2. Label Elements

Hazard Pictograms



Signal Word	Danger
Hazard Statements	H350 - May cause cancer by inhalation H372 - Causes damage to organs through prolonged or repeated exposure if inhaled

Precautionary Statements

Prevention	P201 - Obtain special instructions before use P202 - Do not handle until all safety precautions have been read and understood P260 - Do not breathe dust/fume/gas/mist/vapors/spray P264 - Wash face, hands and any exposed skin thoroughly after handling P270 - Do not eat, drink or smoke when using this product P280 - Wear protective gloves/eye protection/face protection
Response	P308 + P313 - IF exposed or concerned: Get medical advice/attention P314 - Get medical attention/advice if you feel unwell
Storage	P405 - Store locked up
Disposal	P501 - Dispose of contents/container in accordance with local/regional/national/international regulations

Contains**Substances**

Bentonite

Crystalline silica, quartz

Crystalline silica, cristobalite

Crystalline silica, tridymite

CAS Number

1302-78-9

14808-60-7

14464-46-1

15468-32-3

2.3 Hazards not otherwise classified

None known

3. Composition/information on Ingredients

Substances	CAS Number	PERCENT (w/w)	GHS Classification - US
Bentonite	1302-78-9	60 - 100%	Not classified
Crystalline silica, quartz	14808-60-7	1 - 5%	Carc. 1A (H350) STOT RE 1 (H372)
Crystalline silica, cristobalite	14464-46-1	0.1 - 1%	Carc. 1A (H350) STOT RE 1 (H372)
Crystalline silica, tridymite	15468-32-3	0.1 - 1%	Carc. 1A (H350) STOT RE 1 (H372)

The exact percentage (concentration) of the composition has been withheld as proprietary.

4. First-Aid Measures**4.1. Description of first aid measures****Inhalation**

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Eyes	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes and get medical attention if irritation persists.
Skin	Wash with soap and water. Get medical attention if irritation persists.
Ingestion	Under normal conditions, first aid procedures are not required.

4.2 Most important symptoms/effects, acute and delayed

Breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease.

4.3. Indication of any immediate medical attention and special treatment needed

Notes to Physician	Treat symptomatically.
--------------------	------------------------

5. Fire-fighting measures

5.1. Extinguishing media

Suitable Extinguishing Media

All standard fire fighting media

Extinguishing media which must not be used for safety reasons

None known.

5.2 Specific hazards arising from the substance or mixture

Special Exposure Hazards

Decomposition in fire may produce toxic gases.

5.3 Special protective equipment and precautions for fire-fighters

Special Protective Equipment for Fire-Fighters

Full protective clothing and approved self-contained breathing apparatus required for fire fighting personnel.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

Use appropriate protective equipment. Avoid creating and breathing dust.

See Section 8 for additional information

6.2. Environmental precautions

Prevent from entering sewers, waterways, or low areas.

6.3. Methods and material for containment and cleaning up

Collect using dustless method and hold for appropriate disposal. Consider possible toxic or fire hazards associated with contaminating substances and use appropriate methods for collection, storage and disposal.

7. Handling and storage

7.1. Precautions for Safe Handling

Handling Precautions

This product contains quartz, cristobalite, and/or tridymite which may become airborne without a visible cloud. Avoid breathing dust. Avoid creating dusty conditions. Use only with adequate ventilation to keep exposure below recommended exposure limits. Wear a NIOSH certified, European Standard En 149, or equivalent respirator when using this product. Material is slippery when wet.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice.

7.2. Conditions for safe storage, including any incompatibilities

Storage Information

Use good housekeeping in storage and work areas to prevent accumulation of dust. Close container when not in use. Do not reuse empty container.

8. Exposure Controls/Personal Protection

8.1 Occupational Exposure Limits

Substances	CAS Number	OSHA PEL-TWA	ACGIH TLV-TWA
Bentonite	1302-78-9	Not applicable	TWA: 1 mg/m ³
Crystalline silica, quartz	14808-60-7	10 mg/m ³ %SiO ₂ + 2	TWA: 0.025 mg/m ³
Crystalline silica, cristobalite	14464-46-1	1/2 x 10 mg/m ³ %SiO ₂ + 2	TWA: 0.025 mg/m ³
Crystalline silica, tridymite	15468-32-3	1/2 x 10 mg/m ³ %SiO ₂ + 2	0.05 mg/m ³

8.2 Appropriate engineering controls

Engineering Controls

Use approved industrial ventilation and local exhaust as required to maintain exposures below applicable exposure limits.

8.3 Individual protection measures, such as personal protective equipment

Personal Protective Equipment

If engineering controls and work practices cannot prevent excessive exposures, the selection and proper use of personal protective equipment should be determined by an industrial hygienist or other qualified professional based on the specific application of this product.

Respiratory Protection

Not normally needed. But if significant exposures are possible then the following respirator is recommended:

Dust/mist respirator. (N95, P2/P3)

Hand Protection

Normal work gloves.

Skin Protection

Wear clothing appropriate for the work environment. Dusty clothing should be laundered before reuse. Use precautionary measures to avoid creating dust when removing or laundering clothing.

Eye Protection

Wear safety glasses or goggles to protect against exposure.

Other Precautions

None known.

9. Physical and Chemical Properties

9.1. Information on basic physical and chemical properties

Physical State: Solid

Color:

Various

Odor: Odorless

Odor

No information available

Threshold:

Property

Values

Remarks/ - Method

pH:

8-10

Freezing Point/Range

No information available.

Melting Point/Range

No data available

Boiling Point/Range

No data available

Flash Point

No data available

Flammability (solid, gas)

No data available

upper flammability limit

No data available

lower flammability limit

No data available

Evaporation rate

No data available

Vapor Pressure

No data available

Vapor Density

No data available

Specific Gravity

2.65

Water Solubility

Insoluble in water

Solubility in other solvents

No data available

Partition coefficient: n-octanol/water	No data available
Autoignition Temperature	No data available
Decomposition Temperature	No data available
Viscosity	No data available
Explosive Properties	No information available
Oxidizing Properties	No information available

9.2. Other information

VOC Content (%)	No data available
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10. Stability and Reactivity**10.1. Reactivity**

Not expected to be reactive.

10.2. Chemical Stability

Stable

10.3. Possibility of Hazardous Reactions

Will Not Occur

10.4. Conditions to Avoid

None anticipated

10.5. Incompatible Materials

Hydrofluoric acid.

10.6. Hazardous Decomposition Products

Amorphous silica may transform at elevated temperatures to tridymite (870 C) or cristobalite (1470 C).

11. Toxicological Information**11.1 Information on likely routes of exposure**

Principle Route of Exposure Eye or skin contact, inhalation.

11.2 Symptoms related to the physical, chemical and toxicological characteristics**Acute Toxicity****Inhalation**

Inhaled crystalline silica in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (IARC, Group 1). There is sufficient evidence in experimental animals for the carcinogenicity of tridymite (IARC, Group 2A).

Breathing silica dust may cause irritation of the nose, throat, and respiratory passages. Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may also have serious chronic health effects (See "Chronic Effects/Carcinogenicity" subsection below).

Eye Contact

May cause mechanical irritation to eye.

Skin Contact

May cause mechanical skin irritation.

Ingestion

None known

Chronic Effects/Carcinogenicity Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling, and sometimes-fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness, and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop tuberculosis.

Cancer Status: The International Agency for Research on Cancer (IARC) has determined that crystalline silica inhaled in the form of quartz or cristobalite from occupational sources can cause lung cancer in humans (Group 1 - carcinogenic to humans) and has determined that there is sufficient evidence in experimental animals for the carcinogenicity of tridymite (Group 2A - possible carcinogen to humans). Refer to IARC Monograph 68, Silica, Some Silicates and Organic Fibres (June 1997) in conjunction with the use of these minerals. The National Toxicology Program classifies respirable crystalline silica as "Known to be a human carcinogen". Refer to the 9th Report on Carcinogens (2000). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by scarring of the lungs, skin, and other internal organs) and kidney disease.

11.3 Toxicity data

Toxicology data for the components

Substances	CAS Number	LD50 Oral	LD50 Dermal	LC50 Inhalation
Bentonite	1302-78-9	> 5000 mg/kg (Rat) > 2000 mg/kg (Rat)	No data available	> 5.27 mg/L (Rat)
Crystalline silica, quartz	14808-60-7	500 mg/kg (Rat) >15,000 mg/kg (Human)	No data available	No data available
Crystalline silica, cristobalite	14464-46-1	500 mg/kg (Rat)	No data available	No data available
Crystalline silica, tridymite	15468-32-3	500 mg/kg (Rat)	No data available	No data available

Substances	CAS Number	Skin corrosion/irritation
Bentonite	1302-78-9	Non-irritating to the skin (Rabbit)
Crystalline silica, quartz	14808-60-7	Non-irritating to the skin
Crystalline silica, cristobalite	14464-46-1	Non-irritating to the skin
Crystalline silica, tridymite	15468-32-3	Non-irritating to the skin

Substances	CAS Number	Eye damage/irritation
Bentonite	1302-78-9	Non-irritating to the eye (Rabbit)
Crystalline silica, quartz	14808-60-7	Mechanical irritation of the eyes is possible.
Crystalline silica, cristobalite	14464-46-1	Mechanical irritation of the eyes is possible.
Crystalline silica, tridymite	15468-32-3	Mechanical irritation of the eyes is possible.

Substances	CAS Number	Skin Sensitization
Bentonite	1302-78-9	Did not cause sensitization on laboratory animals (mouse)
Crystalline silica, quartz	14808-60-7	Not regarded as a sensitizer.
Crystalline silica, cristobalite	14464-46-1	Not regarded as a sensitizer.
Crystalline silica, tridymite	15468-32-3	Not regarded as a sensitizer.

Substances	CAS Number	Respiratory Sensitization
Bentonite	1302-78-9	No information available
Crystalline silica, quartz	14808-60-7	No information available

Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	Mutagenic Effects
Bentonite	1302-78-9	In vitro tests did not show mutagenic effects
Crystalline silica, quartz	14808-60-7	Not regarded as mutagenic.
Crystalline silica, cristobalite	14464-46-1	Not regarded as mutagenic.
Crystalline silica, tridymite	15468-32-3	Not regarded as mutagenic.

Substances	CAS Number	Carcinogenic Effects
Bentonite	1302-78-9	Did not show carcinogenic effects in animal experiments (similar substances)
Crystalline silica, quartz	14808-60-7	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.
Crystalline silica, cristobalite	14464-46-1	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.
Crystalline silica, tridymite	15468-32-3	Contains crystalline silica which may cause silicosis, a delayed and progressive lung disease. The IARC and NTP have determined there is sufficient evidence in humans of the carcinogenicity of crystalline silica with repeated respiratory exposure. Based on available scientific evidence, this substance is a threshold carcinogen with a mode of action involving indirect genotoxicity secondary to lung injury.

Substances	CAS Number	Reproductive toxicity
Bentonite	1302-78-9	Did not show teratogenic effects in animal experiments.
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

Substances	CAS Number	STOT - single exposure
Bentonite	1302-78-9	None under normal use conditions
Crystalline silica, quartz	14808-60-7	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, cristobalite	14464-46-1	No significant toxicity observed in animal studies at concentration requiring classification.
Crystalline silica, tridymite	15468-32-3	No significant toxicity observed in animal studies at concentration requiring classification.

Substances	CAS Number	STOT - repeated exposure
Bentonite	1302-78-9	None under normal use conditions
Crystalline silica, quartz	14808-60-7	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
Crystalline silica, cristobalite	14464-46-1	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)
Crystalline silica, tridymite	15468-32-3	Causes damage to organs through prolonged or repeated exposure if inhaled: (Lungs)

Substances	CAS Number	Aspiration hazard
Bentonite	1302-78-9	Not applicable
Crystalline silica, quartz	14808-60-7	Not applicable
Crystalline silica, cristobalite	14464-46-1	Not applicable
Crystalline silica, tridymite	15468-32-3	Not applicable

12. Ecological Information

12.1. Toxicity

Ecotoxicity Effects

Product Ecotoxicity Data

No data available

Substance Ecotoxicity Data

Substances	CAS Number	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Toxicity to Invertebrates
Bentonite	1302-78-9	EC50(72h): > 100 mg/L (freshwater algae)	TLM96 10,000 ppm (Oncorhynchus mykiss) LC50 (96h) 16,000 - 19,000 mg/L (Oncorhynchus mykiss) LC50 (24h) 2800 – 3200 mg/L (black bass, warmouth bass, blue gill and sunfish)	No information available	EC50 (96h) 81.6 mg/L (Metacarcinus magister) EC50 (96h) 24.8 mg/L (Pandalus danae) EC50 (48h) > 100 mg/L (Daphnia magna)
Crystalline silica, quartz	14808-60-7	No information available	LL50 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Crystalline silica, cristobalite	14464-46-1	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)
Crystalline silica, tridymite	15468-32-3	No information available	LL0 (96h) 10,000 mg/L (Danio rerio) (similar substance)	No information available	LL50 (24h) > 10,000 mg/L (Daphnia magna) (similar substance)

12.2. Persistence and degradability

Substances	CAS Number	Persistence and Degradability
Bentonite	1302-78-9	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, quartz	14808-60-7	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, cristobalite	14464-46-1	The methods for determining biodegradability are not applicable to inorganic substances.
Crystalline silica, tridymite	15468-32-3	The methods for determining biodegradability are not applicable to inorganic substances.

12.3. Bioaccumulative potential

Substances	CAS Number	Log Pow
Bentonite	1302-78-9	No information available
Crystalline silica, quartz	14808-60-7	No information available
Crystalline silica, cristobalite	14464-46-1	No information available
Crystalline silica, tridymite	15468-32-3	No information available

12.4. Mobility in soil**12.5 Other adverse effects**

No information available

13. Disposal Considerations**13.1. Waste treatment methods**

Disposal Method	Bury in a licensed landfill according to federal, state, and local regulations.
Contaminated Packaging	Follow all applicable national or local regulations.

14. Transport Information**US DOT**

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted

Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

US DOT Bulk

DOT (Bulk)	Not applicable
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Canadian TDG

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IMDG/IMO

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

IATA/ICAO

UN Number:	Not restricted
UN Proper Shipping Name:	Not restricted
Transport Hazard Class(es):	Not applicable
Packing Group:	Not applicable
Environmental Hazards:	Not applicable

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not applicable

Special Precautions for User: None

15. Regulatory Information

US Regulations

US TSCA Inventory	All components listed on inventory or are exempt.
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EPA SARA Title III Extremely Hazardous Substances	Not applicable
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EPA SARA (311,312) Hazard Class	Chronic Health Hazard
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EPA SARA (313) Chemicals	This product does not contain a toxic chemical for routine annual "Toxic Chemical Release Reporting" under Section 313 (40 CFR 372).
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EPA CERCLA/Superfund Reportable Spill Quantity	Not applicable.
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EPA RCRA Hazardous Waste Classification	If product becomes a waste, it does NOT meet the criteria of a hazardous waste as defined by the US EPA.
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California Proposition 65	The California Proposition 65 regulations apply to this product.
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MA Right-to-Know Law	One or more components listed.
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NJ Right-to-Know Law One or more components listed.

PA Right-to-Know Law One or more components listed.

Canadian Regulations

Canadian DSL Inventory All components listed on inventory or are exempt.

16. Other information

Preparation Information

Prepared By

Chemical Stewardship
Telephone: 1-580-251-4335
e-mail: fdunexchem@halliburton.com

Revision Date: 02-Apr-2015

Reason for Revision Update to Format SECTION: 2

Additional information

For additional information on the use of this product, contact your local Halliburton representative.

For questions about the Safety Data Sheet for this or other Halliburton products, contact Chemical Stewardship at 1-580-251-4335.

Key or legend to abbreviations and acronyms

bw – body weight

CAS – Chemical Abstracts Service

EC50 – Effective Concentration 50%

ErC50 – Effective Concentration growth rate 50%

LC50 – Lethal Concentration 50%

LD50 – Lethal Dose 50%

LL50 – Lethal Loading 50%

mg/kg – milligram/kilogram

mg/L – milligram/liter

NIOSH – National Institute for Occupational Safety and Health

NTP – National Toxicology Program

OEL – Occupational Exposure Limit

PEL – Permissible Exposure Limit

ppm – parts per million

STEL – Short Term Exposure Limit

TWA – Time-Weighted Average

UN – United Nations

h - hour

mg/m³ - milligram/cubic meter

mm - millimeter

mmHg - millimeter mercury

w/w - weight/weight

d - day

Key literature references and sources for data

www.ChemADVISOR.com/

Disclaimer Statement

This information is furnished without warranty, expressed or implied, as to accuracy or completeness. The information is obtained from various sources including the manufacturer and other third party sources. The information may not be valid under all conditions nor if this material is used in combination with other materials or in any process. Final determination of suitability of any material is the sole responsibility of the user.

End of Safety Data Sheet

SAFETY DATA SHEET

Section 1: IDENTIFICATION

1.1 PRODUCT IDENTIFIER

- Product Name & Code:**
1. ProSpec BlendCrete Grey 0-30
Product Code: 65510403 65510014
 2. ProSpec BlendCrete Grey 2-15
Product Code: 65510411
 3. ProSpec BlendCrete Grey 2-30
Product Code: 65510412 65510413
 4. ProSpec BlendCrete Grey 3-15
Product Code: 65510417 65510418 65510419
 5. ProSpec BlendCrete Grey 3-30
Product Code: 65510420 65510421

1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Use: Various.

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEET

Name/Address: H.B. Fuller Construction Products Inc.
1105 S. Frontenac Street
Aurora, IL 60504

Telephone Number: Phone: 1-800-552-6225

1.4 EMERGENCY TELEPHONE NUMBER

Medical Emergency Phone Number
(24 Hours): 1-888-853-1758

Transport Emergency Phone Number (CHEMTREC):
1-800-424-9300

December 21, 2012 **Version #:** 1.0

Section 2: HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE CHEMICAL

Hazard class

Acute toxicity 4 (Oral)
Skin irritation 2
Serious eye damage 1
Skin sensitization 1
Carcinogenicity 1A
Reproductive toxicity 1B
Specific target organ toxicity - Repeated exposure 1

2.2 LABEL ELEMENTS

Hazard Pictogram:

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Signal Word:	Danger
Hazard Statement:	Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May damage fertility or the unborn child. Causes damage to organs through prolonged or repeated exposure.
Prevention:	Do not eat, drink or smoke when using this product. Wash skin thoroughly after handling. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Do not breathe dust.
Response:	If swallowed: Immediately call a poison center/doctor. Rinse mouth. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If exposed or concerned: Get medical advice/attention. Get medical advice/attention if you feel unwell.
Storage:	Store locked up.
Disposal:	Dispose of contents and container in accordance with all local, regional, national and international regulations.

2.3 ADDITIONAL INFORMATION

Hazards not otherwise classified: Not applicable.

60 % of the mixture consists of ingredient(s) of unknown acute toxicity.

This product is a hazardous chemical as defined by NOM-018-STPS-2000.

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 MIXTURES

Ingredient	UN #	H / F / R / *	CAS No	Wt. %
Silica, crystalline, quartz	Not available.	Not available.	14808-60-7	30 - 60
Cement, alumina, chemicals	Not available.	Not available.	65997-16-2	10 - 30
Calcium carbonate	Not available.	1/0/0	1317-65-3	10 - 30
Portland cement	Not available.	1/0/0	65997-15-1	10 - 30
Kaolin	Not available.	1/1/0	1332-58-7	1 - 5
Lithium carbonate	Not available.	Not available.	554-13-2	0.1 - 1

The exact percentage (concentration) of chemicals has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

* Per NOM-018-STPS-2000

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Section 4: FIRST- AID MEASURES

4.1 DESCRIPTION OF THE FIRST AID MEASURE

Eye:	In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.
Skin:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
Inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
Ingestion:	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention.

4.2 MOST IMPORTANT SYMPTOMS AND EFFECTS, BOTH ACUTE AND DELAYED

Eye:	Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Skin:	Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitization by skin contact.
Inhalation:	May cause respiratory tract irritation.
Ingestion:	Harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3 INDICATION OF ANY IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENTS NEEDED

Note to Physicians:	Symptoms may not appear immediately.
Specific Treatments:	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

Section 5: FIRE-FIGHTING MEASURES

5.1 FLAMMABILITY

Flammability:	Not flammable by WHMIS/OSHA criteria.
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5.2 EXTINGUISHING MEDIA

Suitable Extinguishing Media:	Treat for surrounding material.
Unsuitable Extinguishing Media:	Not available.

5.3 SPECIAL HAZARDS ARISING FROM THE CHEMICAL

Products of Combustion:	May include, and are not limited to: oxides of carbon.
Explosion Data:	

Sensitivity to Mechanical Impact: Not available.

Trade Name: ProSpec BlendCrete Grey 0-30
 ProSpec BlendCrete Grey 2-15
 ProSpec BlendCrete Grey 2-30
 ProSpec BlendCrete Grey 3-15
 ProSpec BlendCrete Grey 3-30

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Sensitivity to Static Discharge: Not available.

5.4 SPECIAL PROTECTIVE EQUIPMENT AND PRECAUTIONS FOR FIRE FIGHTERS

Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT AND EMERGENCY PROCEDURES

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING - UP

Methods for Containment: Contain spill, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for Cleaning-Up: Vacuum or sweep material and place in a disposal container.

Section 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Handling: Avoid contact with skin and eyes. Do not swallow. Good housekeeping is important to prevent accumulation of dust. Avoid generating and breathing dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Handle and open container with care. When using do not eat or drink. Wash hands before eating, drinking, or smoking. (See section 8)

General Hygiene Advice: Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage: Keep out of the reach of children. Store in dust-tight, dry, labeled containers. Keep containers closed when not in use. Avoid any dust buildup by frequent cleaning and suitable construction of the storage area. Do not store in an area equipped with emergency water sprinklers. (See section 10)

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 CONTROL PARAMETERS

Exposure Guidelines

Occupational Exposure Limits		
Ingredient	OSHA-PEL	ACGIH-TLV
Silica, crystalline, quartz	((10 mg/m ³)/(%SiO ₂ +2) TWA (resp)) ((30 mg/m ³)/(%SiO ₂ +2) TWA (total)) ((250)/(%SiO ₂ +5) mppcf TWA (resp))	0.025 mg/m ³
Cement, alumina, chemicals	Not available.	Not available.

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Calcium carbonate	15 mg/m ³ (total); 5 mg/m ³ (resp)	10 mg/m ³
Portland cement	15 mg/m ³ (total) 5 mg/m ³ (resp)	1 mg/m ³ (no asbestos and <1% crystalline silica, respirable fraction)
Kaolin	15 mg/m ³	2 mg/m ³
Lithium carbonate	Not available.	Not available.

8.2 EXPOSURE CONTROLS

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

8.3 INDIVIDUAL PROTECTIVE MEASURES

Personal Protective Equipment:

Eye/Face Protection: Wear approved eye (properly fitted dust- or splash-proof chemical safety goggles) / face (face shield) protection.

Skin Protection:

Hand Protection: Wear suitable waterproof gloves.

Body Protection: Wear suitable waterproof protective clothing.

Respiratory Protection: A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).

General Health and Safety Measures: Handle according to established industrial hygiene and safety practices. Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 INFORMATION ON BASIC PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Powder.

Color: Not available.

Odor: Not available.

Odor Threshold: Not available.

Physical State: Solid.

pH: 10 - 12

Melting Point/Freezing Point: Not available.

Initial Boiling Point and Boiling Range: Not available.

Flash Point: Not available.

Evaporation Rate: Not available.

Flammability: Not Flammable.

Lower Flammability/Explosive Limit: Not available.

Upper Flammability/Explosive Limit: Not available.

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Vapor Pressure:	Not available.
Vapor Density:	Not available.
Relative Density/Specific Gravity:	Not available.
Solubility:	Not available.
Partition coefficient: n-octanol/water:	Not available.
Auto-ignition Temperature:	Not available.
Decomposition Temperature:	Not available.
Viscosity:	Not available.
Percent Volatile, wt. %:	Not applicable.
VOC content, wt. %:	0%, Not applicable; 0 wt, Not applicable.

Section 10: STABILITY AND REACTIVITY

10.1 REACTIVITY

No dangerous reaction known under conditions of normal use.

10.2 CHEMICAL STABILITY

Stable under normal storage conditions. Keep dry in storage.

10.3 POSSIBILITY OF HAZARDOUS REACTIONS

No dangerous reaction known under conditions of normal use.

10.4 CONDITIONS TO AVOID

Incompatible materials. Moisture.

10.5 INCOMPATIBLE MATERIALS

None known.

10.6 HAZARDOUS DECOMPOSITION PRODUCTS

May include, and are not limited to: oxides of carbon.

Section 11: TOXICOLOGICAL INFORMATION

11.1 INFORMATION ON TOXICOLOGICAL EFFECTS

Likely Routes of Exposure: Skin contact, skin absorption, eye contact, inhalation, and ingestion.

Symptoms related to physical/chemical/toxicological characteristics:

- Eye:** Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
- Skin:** Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitization by skin contact.
- Ingestion:** Harmful if swallowed. May cause stomach distress, nausea or vomiting.

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Inhalation: May cause respiratory tract irritation.

Acute Toxicity:

Ingredient	IDLH	LC50	LD50
Silica, crystalline, quartz	Ca [25 mg/m ³ (cristobalite, tridymite) 50 mg/m ³ (quartz, tripoli)]	Not available.	Oral 500 mg/kg, rat
Cement, alumina, chemicals	Not available.	Not available.	Not available.
Calcium carbonate	Not available.	Not available.	Not available.
Portland cement	5000 mg/m ³	Not available.	Not available.
Kaolin	Not available.	Not available.	Not available.
Lithium carbonate	Not available.	Inhalation >2.17 mg/L, rata	Oral 525 mg/kg, rat

Calculated overall Chemical Acute Toxicity Values

LC50 (inhalation)	LD50 (oral)	LD50 (dermal)
Not available.	500 - 510 mg/kg, rat	Not available.

Ingredient	Chemical Listed as Carcinogen or Potential Carcinogen (NTP, IARC, OSHA, ACGIH, CP65)*
Silica, crystalline, quartz	G-A2, I-1, N-1, CP65
Cement, alumina, chemicals	Not listed.
Calcium carbonate	Not listed.
Portland cement	G-A4
Kaolin	Not listed.
Lithium carbonate	CP65

11.2 DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT- AND LONG-TERM EXPOSURE

Skin Corrosion/Irritation:	Causes skin irritation. May cause burns in the presence of moisture.
Serious Eye Damage/Irritation:	Causes serious eye damage. May cause burns in the presence of moisture.
Respiratory Sensitization:	Based on available data, the classification criteria are not met.
Skin Sensitization:	May cause an allergic skin reaction.
STOT-Single Exposure:	Based on available data, the classification criteria are not met.
Chronic Health Effects:	Respirable crystalline silica in the form of quartz or cristobalite from occupational sources is listed by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a lung carcinogen. Prolonged exposure to respirable crystalline silica has been known to cause silicosis, a lung disease, which may be disabling. While there may be a factor of individual susceptibility to a given exposure to respirable silica dust, the risk of contracting silicosis and the severity of the disease is clearly related to the amount of dust exposure and the length of time (usually years) of exposure.

Carcinogenicity: May cause cancer.

Germ Cell Mutagenicity: This product is not classified as a mutagen.

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Reproductive Toxicity:

Developmental: May damage the unborn child.

Teratogenicity: Not hazardous by WHMIS/OSHA criteria.

Embryotoxicity: Not hazardous by WHMIS/OSHA criteria.

Fertility: May damage fertility.

STOT-Repeated Exposure: Causes damage to organs through prolonged or repeated exposure.

Aspiration Hazard: Based on available data, the classification criteria are not met.

Toxicologically Synergistic Materials: Not available.

Other Information: Not available.

Section 12: ECOLOGICAL INFORMATION

12.1 ECOTOXICITY

Acute/Chronic Toxicity: No ecological consideration when used according to directions. Normal dilution of this product to drains, sewers, septic systems and treatment plants is not considered environmentally harmful.

12.2 PERSISTENCE AND DEGRADABILITY

Not available.

12.3 BIOACCUMULATIVE POTENTIAL

Bioaccumulation: Not available.

12.4 MOBILITY IN SOIL

Not available.

12.5 OTHER ADVERSE EFFECTS

Not available.

Section 13: DISPOSAL CONSIDERATIONS

13.1 WASTE TREATMENT METHODS

Disposal Method: This material must be disposed of in accordance with all local, state, provincial, and federal regulations.

Other disposal recommendations: Not available.

Section 14: TRANSPORT INFORMATION

14.1 UN NUMBER

DOT
Not regulated.

TDG
Not regulated.

NOM-004-SCT2-1994
Not regulated.

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14.2 UN PROPER SHIPPING NAME

DOT

Not applicable.

TDG

Not applicable.

NOM-004-SCT2-1994

Not applicable.

14.3 TRANSPORT HAZARD CLASS (ES)

DOT

Not applicable.

TDG

Not applicable.

NOM-004-SCT2-1994

Not applicable.

14.4 PACKING GROUP

DOT

Not applicable.

TDG

Not applicable.

NOM-004-SCT2-1994

Not applicable.

14.5 ENVIRONMENTAL HAZARDS

Not available.

14.6 TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available.

14.7 SPECIAL PRECAUTIONS FOR USER

Do not handle until all safety precautions have been read and understood.

Section 15: REGULATORY INFORMATION

15.1 SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/ LEGISLATIONS SPECIFIC FOR THE CHEMICAL

Canadian: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all the information required by the Controlled Products Regulations.

US: MSDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

Mexico: MSDS prepared pursuant to NOM-018-STPS-2000.

SARA Title III				
Ingredient	Section 302 (EHS) TPQ (lbs.)	Section 304 EHS RQ (lbs.)	CERCLA RQ (lbs.)	Section 313
Silica, crystalline, quartz	Not listed.	Not listed.	Not listed.	Not listed.
Cement, alumina, chemicals	Not listed.	Not listed.	Not listed.	Not listed.
Calcium carbonate	Not listed.	Not listed.	Not listed.	Not listed.
Portland cement	Not listed.	Not listed.	Not listed.	Not listed.
Kaolin	Not listed.	Not listed.	Not listed.	Not listed.
Lithium carbonate	Not listed.	Not listed.	Not listed.	313

State Regulations

California Proposition 65:

This product contains Crystalline Silica, Quartz and may also contain trace amounts of other chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

SAFETY DATA SHEET

Global Inventories

Ingredient	Canada DSL/NDSL	USA TSCA
Silica, crystalline, quartz	DSL	Yes.
Cement, alumina, chemicals	DSL	Yes.
Calcium carbonate	NDSL	Yes.
Portland cement	DSL	Yes.
Kaolin	DSL	Yes.
Lithium carbonate	DSL	Yes.

NFPA - National Fire Protection Association:

Health:	3
Fire:	1
Reactivity:	0

HMIS - Hazardous Materials Identification System

Health:	3*
Fire:	1
Reactivity:	0

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

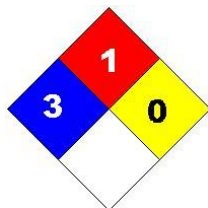
WHMIS Classification(s):

Class D2A – Carcinogenicity
 Class D2A - Chronic Toxic Effects
 Class E - Corrosive Material

WHMIS Hazard Symbols:



Mexico Classification:



Blue = Health Red = Flammability Yellow = Reactivity White = Special

Hazard Rating: 0 = minimal, 1 = slight, 2 = moderate, 3 = severe, 4 = extreme

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:

CP65 California Proposition 65
 OSHA (O) Occupational Safety and Health Administration.

SAFETY DATA SHEET

ACGIH (G) American Conference of Governmental Industrial Hygienists.

- A1 - Confirmed human carcinogen.
- A2 - Suspected human carcinogen.
- A3 - Animal carcinogen.
- A4 - Not classifiable as a human carcinogen.
- A5 - Not suspected as a human carcinogen.

IARC (I) International Agency for Research on Cancer.

- 1 - The agent (mixture) is carcinogenic to humans.
- 2A - The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.
- 2B - The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.
- 3 - The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.
- 4 - The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.

NTP (N) National Toxicology Program.

- 1 - Known to be carcinogens.
- 2 - Reasonably anticipated to be carcinogens.

Section 16: OTHER INFORMATION

Date of Preparation: December 21, 2012

Expiry Date: December 21, 2015

Version: 1.0

Revision Date: December 21, 2012

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.

End of Safety Data Sheet

MATERIAL SAFETY DATA SHEET

CHEMSTRONG® CF

GET urges each customer or recipient of this MSDS to study it carefully to become aware of and understand the hazards associated with the product. The reader should consider consulting reference works or individuals who are experts in ventilation, toxicology, and fire prevention, as necessary or appropriate to use and understand the data contained in this MSDS. While the information and recommendations set forth herein are believed to be accurate, as of the date hereon, Great Eastern Technologies, L.L.C., makes no warranty with respect thereto and disclaims all liability from reliance thereon. The information contained herein represents our current data and best opinion as to the proper use and handling of this product under normal conditions. Any use of this product which is not in conformance with this data sheet or which involves using the product in combination with any other product or any process is the responsibility of the user. The MSDS should not be construed as the sum total of all protective measures that may be taken. It is the responsibility of the employer to evaluate the information and to determine the extent of the hazard and what personal protective measures should be taken. The information contained herein is based on data considered accurate. However, no warranty is expressed or implied regarding the accuracy of these data or the results to be obtained from the use thereof.



SECTION 01

CHEMICAL PRODUCT AND COMPANY

Product Identification

Product Trade Name : Chemstrong® CF
Chemical Name : Mixture - Not Applicable
CAS # : Mixture - Not Applicable
Chemical Family : Chemical Dispersing Agent
Product Synonyms : None
Product Use : Non-Chloride, Accelerating Water Reducing Admixture for Concrete
DOT Hazard Class : Not Regulated

Company Identification

Great Eastern Technologies, L.L.C. (609) 581-1587 Factory Phone Number
 4407 S. Broad Street (609) 581-0735 Fax Number
 Yardville, New Jersey 08620

Emergency Number

Great Eastern Technologies, L.L.C. work hours are generally 8:00 a.m. to 5:00 p.m. Monday through Friday.
 The Emergency Number is the Factory Phone Number (609) 581-1587.
 The Emergency Number for 24 Hour Contact is (800) 424-9300 (CHEMTREC)

MSDS Number : GSM FM-150-08 **Cancels MSDS Number** : GSM FM-150-07
Publication Date : January, 2006

SECTION 02

HAZARDOUS INGREDIENTS

NA = Not Available

(See Section 11 for Complete Chemical Names)

Ingredient	Maximum by Weight	Exposure Limits in Air					
		OSHA-PEL		ACGIH-TLV		IDLH	Other
		PEL	STEL	TLV	STEL		
Calcium Nitrate Tetrahydrate CAS Number 13477-18.5	25-50%	NA	NA	NA	NA	NA	NA
Calcium Nitrite CAS Number 13780-06-8	2-15%	NA	NA	NA	NA	NA	NA
Triethanolamine CAS Number 000102-71-6	0-10%	3 ppm	NA	5 mg/m ³	NA	NA	NA
Sodium Thiocyanate	0-10%	NA	NA	NA	NA	NA	NA

CAS Number 540-72-7

SECTION 03

EMERGENCY HAZARDS IDENTIFICATION

Emergency Overview : This product is a slightly transparent brown color solution with an odorless to a mild/bland slight ammoniacal odor. The primary health hazard associated with this product is the potential for moderate irritation of eyes, skin, and other contaminated tissue. This product is not flammable or reactive. Emergency responders must wear the personal protective equipment suitable for the situation to which they are responding. The primary routes of overexposure for the solution are via inhalation and contact with skin and eyes. The following paragraphs describe the symptoms of overexposure to this material.

Potential Health Effects

- Skin** : Skin absorption is not a significant route of overexposure for the components of this product. However, prolonged exposure of skin contact will cause reddening, discomfort, moderate irritation, and tissue damage. Dermatitis may result from prolonged or repeated skin contact. Prolonged or repeated skin contact may tend to remove skin oils possible leading to irritation.
- Eyes** : Depending on the duration of overexposure, contact with the eyes will cause irritation, pain, blurred vision and reddening. Severe eye exposure can cause serious irritation, conjunctivitis and possible corneal damage. Severe, prolonged exposures may cause tissue damage which could lead to blindness.
- Inhalation** : If vapors, mist, or sprays of this product are inhaled, they may irritate the nose, throat, and lungs. Symptoms may include the following: sneezing, coughing, and difficulty in breathing. Severe over exposures can result in damage to respiratory systems tissues. Most symptoms generally are alleviated when the overexposure ends.
- Ingestion** : If this product is swallowed, irritation and burns of the mouth, throat, esophagus, and other tissues of the digestive system will occur immediately upon contact. Symptoms of such over-exposure can include nausea, abdominal pain, vomiting, and diarrhea. Severe ingestion over exposures can result in convulsions, collapse, coma and damage to the liver and kidney. The nitrate component of Calcium Nitrate, Tetrahydrate (a component of this product) may damage the oxygen transportation systems of the blood. Severe ingestion exposures can be fatal. Repeated ingestion of small amounts of this product (*as may occur in the event of poor hygiene practices*) may cause weakness, depression, headaches, and mental impairment.
- Injection** : Accidental injection of this product, via laceration or puncture by a contaminated object may cause pain and irritation in addition to the wound.

ACUTE : The primary hazard associated with this product is the potential for moderate irritation of skin, eyes, and other contaminated tissue. Prolonged contact can result in tissue damage. Ingestion of this product can be harmful or fatal.

CHRONIC : Dermatitis (inflammation and redness of the skin) may result from prolonged or repeated skin contact. Repeated ingestion of small amounts of this product may cause weakness, depression, headaches, neurological effects, and mental impairment. See Section 11 (*Toxicology Information*) for additional data.

TARGET ORGANS : ACUTE: Skin, eyes, nervous system. CHRONIC: Skin, neurological system.

CARCINOGENICITY : Identify (*see Section 11 Toxicological Information for more details*)

SECTION 04

FIRST AID MEASURES

Contaminated individuals must be taken for medical attention if any adverse reaction occurs. Rescuers should be taken for medical attention, if necessary. Take a copy of Product Label and MSDS to a health professional with the contaminated individual.

- Skin** : If this product contaminates the skin, begin decontamination with running water. Remove exposed or contaminated clothing, wash contaminated clothing before reuse. Victim must seek immediate medical attention if any adverse effect occurs.
- Eyes** : If this product liquid or vapors enter the eyes, open contaminated individual's eyes under gently running water. Use sufficient force to open eyelids. Have contaminated individual "roll" eyes. Minimum flushing is for 15 minutes. Contaminated individual must seek immediate attention.
- Inhalation** : If vapors, mist, or spray of this product are inhaled, remove contaminated individual to fresh air. If necessary, use artificial respiration to support vital functions. Remove or cover contamination to avoid exposure to rescuers.
- Ingestion** : If this product is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, do not induce vomiting or give diluents (*milk or water*) to someone who is unconscious, having convulsion, or unable to swallow. If conscious and alert, wash out mouth with water.

Medical Conditions Aggravated by Exposure : Pre-existing dermatitis, or other skin disorders, and conditions involving the other Target Organs (*see Section 3, Hazard Identification*) may be aggravated by over-exposure to this product.

Notes to Physicians : Treat symptoms and eliminate over-exposure. Be observant for signs of pulmonary edema in the event of severe inhalation over-exposure.

SECTION 05

FIRE FIGHT MEASURES

Flash Point	: Not Flammable
Flammable Limits	: Not Flammable
Explosion Sensitivity to Mechanical Impact	: Not Sensitive
Explosion Sensitivity to Static Discharge	: Not Sensitive
Auto Ignition Temperature	: Not Available

Extinguishing Media	: Water Fog	Yes : Water Stream	NO - May cause fire to spread.
	: Water Spray	Yes : Carbon Dioxide	Yes
	: Halon	Yes : Dry Chemical	Yes
	: Foam	Yes : Other	Any "ABC" Class

Special Fire Fighting Procedures

Incipient fire responders should wear eye protection. Structural fire fighters must wear Self-Contained Breathing Apparatus and full protective equipment. Chemical resistant clothing may be necessary. Move containers from fire area if they have not been exposed to heat and if can be done without risk to personnel. If this product is involved in a fire, fire run-off water should be contained to prevent possible environmental damage. Rinse all contaminated equipment thoroughly with water before returning to service.

Fire and Explosion Hazards

Violent steam generation or eruption may occur upon application of direct water stream to hot liquids. Spills of these organic liquids on hot fibrous insulations may lead to lowering of the autoignition temperature possibly resulting in spontaneous combustion.

This product is a moderate irritant and presents a potential contact hazard for firefighters. When involved in a fire, this material may decompose and produce acrid vapors, calcium compounds, oxides of nitrogen, carbon monoxide, carbon dioxide and small amounts of hydrogen sulfide and hydrogen cyanide. Through not anticipated to be a significant hazard associated with this product, due to the fact that this is a solution, it is important to note that in its dry form, Calcium Nitrate is an oxidizer, which can act to initiate and sustain the combustion of flammable materials.

SECTION 06

ACCIDENTAL RELEASE MEASURES

Uncontrolled releases should be responded to by trained personnel using pre-planned procedures. Proper protective equipment should be used. In case of a large spill, clear the affected area, and protect people. In the event of a non-incidental release (*e.g., 55-gallon release in which excessive splashes or sprays can be generated*), minimum Personal Protective Equipment should be level C: triple-gloves (*rubber gloves and nitrile gloves, over latex gloves*), chemically resistant suit and boots, hard-hat, and an air-purifying respirator with a high-efficiency particulate filter. Level B, which includes Self Contained Breathing Apparatus, must be worn in situations in which excessive sprays or mists can be generated, or the oxygen level is less than 19.5% or unknown. Absorb spilled liquid with lime, polypads or other suitable absorbent materials. Decontaminate the area thoroughly. Place all spill residue in a suitable container and seal. Dispose of in accordance with U.S. Federal, State, and local waste disposal regulations, or the applicable standards (*see Section 13, Disposal Considerations*).

Protect People	: Clear non-emergency personnel from the area.
Protect the Environment	: Contain material to prevent contamination of soil, surface water or ground water.
Cleanup	: Absorb with material such as non-combustible material. Collect material in suitable containers. Avoid materials such as sawdust or cellulose.

SECTION 07

HANDLING AND STORAGE

Work Practices and Hygiene Practices

As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash hands after handling this product. Do not eat, drink, smoke or apply cosmetics while handling this product. All work practices should minimize the generation of splashes and aerosols. Remove contaminated clothing immediately.

Storage and Handling Practices

All employees who handle this material should be trained to handle it safely. Avoid breathing vapors or mist generated by this product. Use in a well-ventilated location. Open containers slowly, on a stable surface. Containers of this product must be properly labeled. Empty containers may contain residual liquid or vapors therefore; empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (*see Section 10, Stability and Reactivity*). Material should be stored in secondary containers, or in a diked area, as appropriate. Keep container tightly closed when not in use. Inspect all incoming containers before storage, to ensure containers are properly labeled and not damaged.

Protective Practices During Maintenance on Contaminated Equipment

Follow practices indicated in Section 6 (*Accidental Release Measures*). Make certain that application equipment is locked and tagged-out safely, if necessary.

Storage

Do not store in aluminum, copper and copper alloys. Heating above 140°F in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid contact with halogenated hydrocarbons, strong acids. Avoid contact with materials such as sawdust and cellulose.

SECTION 08

EXPOSURE CONTROLS, PERSONAL PROTECTION

- Respiratory Protection** : Maintain airborne contaminant concentrations below exposure limits listed in Section 2 (*Hazardous Ingredients and Major Components*). If respiratory protection is needed, use only protection authorized in the U.S. Federal OSHA Standard (29 CFR 1910.134) or applicable U.S. State regulations. Oxygen levels below 19.5% are considered IDLH by OSHA. In such atmospheres, use a full-face pressure/demand SCBA or a full-face piece, supplied air respirator with auxiliary self-contained air supply is required under OSHA's Respiratory Protection Standard (1910.134-1998)
- Ventilation Requirements** : Exhaust directly to the outside. Use local exhaust ventilation, and process enclosures if necessary, to control mist formation. Supply sufficient replacement air to make up for air removed by system. Ensure eyewash/safety shower stations are available near areas where this product is used.
- Skin Protection** : Wear Neoprene or Rubber gloves for routine industrial use. Use triple gloves for spill response, as stated in Section 6 (*Accidental Release Measures*) of this MSDS.
- Eye Protection** : Splash goggles or safety glasses are required. Face shield recommended when using quantities of this product in excess of 1 gallon.
- Body Protection** : Use body protection appropriate for task. An apron, or other impermeable body protection is suggested. Full-body chemical protective clothing is recommended for emergency response procedures.
- Work, Hygienic Practices** : As required to protect skin and eyes from liquid, safety showers and/or eye wash should be available. Do not leave food or smoke in work area. Wash thoroughly and remove or clean any contaminated clothing. Wash hands and any area that can come into contact with the materials after each use.
- Exposure Limits** : None Established.

SECTION 09

PHYSICAL AND CHEMICAL PROPERTIES

- | | | | |
|-------------------------------|------------------|----------------------------|-------------------------------------|
| Specific Gravity | : 1.385 | Odor | : Mild/bland slight ammonia odor |
| pH Level approximate | : 8.5 | Appearance | : Slightly Transparent Brown Liquid |
| Viscosity (cps) | : Not Available | Percent Volatile | : Not Available |
| Flash Point @ EF | : Not Applicable | Ignition Point @ EF | : Not Applicable |
| Freezing Point @ EF | : < 20EF | Boiling Point @ EF | : > 230EF |
| Explosion Hazard | : Not Applicable | Melting Point @ EF | : Not Applicable |
| Vapor Pressure (MM Hg) | : Not Applicable | Vapor Density | : Not Applicable |
| Evaporation Rate | : Not Applicable | Solubility in Water | : Complete |

SECTION 10

STABILITY AND REACTION

- Chemical Stability** : Stable under normal temperatures.
- Keep Away From** : Extreme heat and contact with incompatible chemicals.
- Hazardous Polymerization** : Will not occur under normal conditions.
- Decomposition Products** : Acidic vapors, calcium compounds, oxides of nitrogen, carbon monoxide, carbon dioxide and small amounts of hydrogen sulfide and hydrogen cyanide
- Incompatible Substances** : Flammable and combustible materials, strong reducing agents, cyanides, finely powdered materials. Do not use sodium nitrite or other nitrosating agents, suspected cancer-causing nitrosamines could be formed. Heating above 140EF in the presence of aluminum can result in corrosion and generation of flammable hydrogen gas. Avoid contact with halogenated hydrocarbons, strong acids.

SECTION 11

TOXICOLOGICAL INFORMATION

Ingredient

(See Section 2 for Exposure Limits)

(Chemical Name, CAS #, Common Name)

Toxicity Data

Calcium Nitrate Tetrahydrate

CAS Number 13477-18-5

Standard Draize Test (Skin-Rabbit, adult) 500 mg/24 hour, Mild irritation effects LD50 (Oral-Rat) 3,900 mg/kg

Standard Draize Test (Eye-Rabbit, adult) 500 mg/24 hour, Mild LD50 (Oral-Rat) 302 mg/kg

Suspected Cancer Agent : The components of this product are not found on the following list: U.S. Federal OSHA Z List, NTP, IARC and CAL/OSHA and therefore are not considered to be, nor suspected to be, cancer causing agents by these agencies.

Irritancy of Product : Calcium Nitrate is moderately irritating to contaminated tissue.

Sensitization of Product : Calcium Nitrate contains no known skin or respiratory sensitizers.

Reproductive Toxicity : This product is not reported to cause mutagenic, embryotoxic, teratogenic effects in humans. This product is not reported to cause reproductive toxicity effects in humans. (see definitions below)

ACGIH Exposure Indices : Currently, there are no ACGIH Biological Indices (BEIs) determined for the components of Calcium Nitrate.

Calcium Nitrite

CAS Number 13780-0-8

Standard Draize Test (Skin-Rabbit, adult) - No known test results

Standard Draize Test (Eye-Rabbit, adult) - No known test results

Suspected Cancer Agent : The components of this product does not contain carcinogenic materials as defined by 29 CFR 1910.1200.

Irritancy of Product : No data available.

Sensitization of Product : No data available.

Reproductive Toxicity : No data available.

ACGIH Exposure Indices : No data available.

Triethanolamine

CAS Number 000102-71-6 80% Maximum

Highers from reaction of ethylene oxide and ammonia CAS Number 068953-70-8 20% Maximum

Diethanolamine CAS Number 000111-42-2 01% Maximum

Standard Draize Test (Skin-Rabbit, adult) - LD50 is > 2,000 mg/kg

LD50 (Oral-Rat) >2,000 mg/kg

Standard Draize Test (Eye-Rabbit, adult) - No known test results

Suspected Cancer Agent : Diethanolamine did not cause cancer in laboratory animals. Findings from a chronic Diethanolamine skin painting study include liver and kidney tumors in but no tumors in rats. A number of factors may have influenced the results and are being considered in their interpretation.

Irritancy of Product : No data available.

Sensitization of Product : Triethanolamine may in rare cases cause allergic skin response.

Reproductive Toxicity : Mutagenicity effects in vitro mutagenicity studies were negative in TEA

ACGIH Exposure Indices : No data available.

Other: A 'skin' notation following the exposure guidelines refers to the potential for dermal absorption of the material. It is intended to alert the reader that inhalation may not be the only route of exposure and that measures to minimize dermal exposures should be considered.

Sodium Thiocyanate Solution

CAS Number 540-72-7

Standard Draize Test (Skin-Rabbit, adult) - No known test results

Standard Draize Test (Eye-Rabbit, adult) - No known test results

Suspected Cancer Agent : This material has been listed as "Not Identifiable" as it relates to a cancer causing agent.

Irritancy of Product : No data available.

Sensitization of Product : No data available.

Reproductive Toxicity : No data available.

ACGIH Exposure Indices : No data available.

Notation of Definitions:

A mutagen is a chemical which causes permanent changes to genetic material (DNA) such that the changes will propagate through generational lines. An embryotoxin is a chemical change which causes damage to a developing "embryo" (i.e within the first eight weeks of pregnancy in humans), but the damage does not propagate across generational lines. A teratogen is a chemical which causes damage to a developing "fetus", but the damage does not propagate across generational lines. A reproductive toxin is any substance which interferes in any way with the reproductive process.

SECTION 12

ECOLOGICAL INFORMATION

All work practices must be aimed at eliminating environmental contamination.

Environmental Stability

The components of this product are relatively stable under ambient, environmental conditions.

Effects of Material on Plants or Animals

This product may be harmful to terrestrial plant or animal life, especially if released in large quantities.

Effects of Chemical on Aquatic Life

This product may be harmful to aquatic plant or animal life, especially if release in large quantities.

SECTION 13

DISPOSAL CONSIDERATIONS

Consult all Federal, State, Provincial and Local regulations, or a qualified waste disposal firm when characterizing waste for disposal. Dispose of waste in accordance with all applicable regulations.

U.S. EPA (40 CFR 261) : Not Listed

RCRA Waste # : Not Listed

SECTION 14

TRANSPORTATION INFORMATION

Department of Transportation Shipping Name : Not Applicable
Hazard Class : Not Applicable
Identification # : Not Applicable
Label (s) Required : Not Applicable
Surface Freight Classification : Concrete or Masonry Concrete Chemical Additive

SECTION 15

REGULATORY INFORMATION

The components of this product are subject to the reporting requirements of Sections 302, 304, and 313 of SARA Title III of the Superfund and Re-Authorization Act, and are listed as follows:

SARA 302 (40 CFR, Appendix A)	NO
SARA 304 (40 CFR Table 302.4)	NO
SARA 313 (40 CFR 372.65)	YES

The **Triethanolamine aka TEA** component of this material has been listed by SARA Title III as, “ *A delayed health hazard.*”

OSHA Status : Not Listed. However, this material contains ingredients that have been listed as a hazardous chemical as defined by OSHA Hazard Communication Standard, 29 CFR 1910.1200.

US TSCA Status Inventory Status : Calcium Nitrate is on the TSCA Inventory.

CERCLA Reportable Requirements : Not Applicable



MATERIAL SAFETY DATA SHEET

1. Product and Company Identification

Material name P1 Creosote Oil
Revision date 08-26-2011
Version # 01
CAS # Mixture
Product use Wood preservative.
Synonym(s) None.
Manufacturer/Supplier KMG- Bernuth, Inc.
9555 W. Sam Houston Parkway S.
Suite 600
Houston, Texas 77099
Phone Number: 713-600-3800
Emergency CHEMTREC: 1-800-424-9300
Emergency medical treatment: 1-800-322-8177

2. Hazards Identification

Physical state Liquid.
Appearance Oily, viscous liquid.
Emergency overview WARNING
Suspect cancer hazard - may cause cancer. Causes skin, eye and respiratory tract irritation. May be harmful if swallowed. May cause allergic skin reaction.
OSHA regulatory status This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
Potential health effects
Routes of exposure Eye contact. Skin contact. Inhalation. Ingestion.
Eyes Causes eye irritation.
Skin Causes skin irritation. May cause allergic skin reaction. May cause photosensitization, evidenced by repeated occurrence of a dermatitic rash on exposure to sunlight.
Inhalation Causes respiratory tract irritation. Prolonged exposure is associated with lung cancer and urinary cancer.
Ingestion May be harmful if swallowed. Swallowing or vomiting of the liquid may result in aspiration into the lungs.
Target organs Eyes. Skin. Respiratory system. Reproductive system. Central nervous system.
Chronic effects Suspect cancer hazard - may cause cancer. May cause scrotal and bladder cancer. May cause allergic skin reaction. May cause damage to the liver and kidneys. May cause lung damage. May cause blood damage. May cause central nervous system effects. Repeated exposure to coal tar products may increase the risk of more serious skin disorders including a variety of skin cancers. Some skin cancers, such as malignant melanoma, have a high mortality rate. Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure. The coal tar component of this formulation contains polynuclear aromatic hydrocarbon (PAHs).
Signs and symptoms Inhalation: May cause damage to mucous membranes in nose, throat, lungs and bronchial system. Eye contact: May cause redness and pain. Chronic exposure may cause conjunctivitis, blepharoconjunctivitis and photophobia. Skin contact: Sensitization. Ingestion may cause nausea, headache and dizziness. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure.
Potential environmental effects Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

3. Composition / Information on Ingredients

Components	CAS #	Percent
Creosote	8001-58-9	98.5
Constituted components	-	-
Naphthalene	91-20-3	< 16.15

Phenanthrene	85-01-8	< 14.15
Acenaphthene	83-32-9	< 7.8
Fluoranthene	206-44-0	< 7.45
Pyrene	129-00-0	< 5.8
Dibenzofuran	132-64-9	< 4.5
Anthracene	120-12-7	< 3.8
1,2-Benzphenanthrene	218-01-9	< 1.5
Benz[a]anthracene	56-55-3	< 1.5
Benzo[b]fluoranthene	205-99-2	0.1 - 1
Benzo[a]pyrene	50-32-8	< 0.4
Benzo[k]fluoranthene	207-08-9	< 0.2
Benzo[j]fluoranthene	205-82-3	< 0.2
1,10-(1,2-Phenylene)pyrene	193-39-5	< 0.1
Quinoline	91-22-5	< 0.06
P-xylene	106-42-3	< 0.02

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First Aid Measures

First aid procedures

Eye contact

Immediately flush with plenty of water for up to 15 minutes. Remove any contact lenses and open eyes wide apart. Get medical attention if irritation develops and persists.

Skin contact

Remove contaminated clothes and rinse skin thoroughly with water for at least 15 minutes. In case of eczema or other skin disorders: Seek medical attention and take along these instructions.

Inhalation

Move injured person into fresh air and keep person calm under observation. Get medical attention if any discomfort continues.

Ingestion

Rinse mouth thoroughly with water and give large amounts of milk or water to people not unconscious. Do not induce vomiting. If vomiting occurs, the head should be kept low so that stomach vomit doesn't enter the lungs. Get medical attention immediately.

Notes to physician

In case of shortness of breath, give oxygen. Keep victim warm.

General advice

Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.

5. Fire Fighting Measures

Flammable properties

If strongly heated, the product releases polynuclear aromatic hydrocarbons (PAHs), which include carcinogenic substances.

Extinguishing media

Suitable extinguishing media

Extinguish with foam, carbon dioxide, dry powder or water fog.

Unsuitable extinguishing media

None.

Protection of firefighters

Specific hazards arising from the chemical

Thermal decomposition may produce smoke, oxides of carbon and lower molecular weight organic compounds whose composition have not been characterized.

Fire fighting equipment/instructions

Selection of respiratory protection for fire fighting: follow the general fire precautions indicated in the workplace. Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials. Caution should be exercised when using water or foam as frothing may occur, especially if directed onto containers of hot or burning material.

6. Accidental Release Measures

Personal precautions

This product must not be heated in a sealed or confined space which has no avenue to allow pressure relief of the expanding vapors. This could cause excessive pressure buildup, blow back of materials, and explosion. Keep unnecessary personnel away. Local authorities should be advised if significant spillages cannot be contained. Stay upwind. Keep people away from and upwind of spill/leak. Ventilate closed spaces before entering. Ensure adequate ventilation. Extinguish all ignition sources. Avoid sparks, flames, heat and smoking. Ventilate. Avoid inhalation of vapors and contact with skin and eyes. In case of spills, beware of slippery floors and surfaces. Wear suitable protective clothing. See Section 8 of the MSDS for Personal Protective Equipment.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not contaminate water.

Methods for containment

Stop the flow of material, if this is without risk. Dike the spilled material, where this is possible. Prevent entry into waterways, sewers, basements or confined areas.

Methods for cleaning up

Remove sources of ignition.

Large Spills: Absorb in vermiculite, dry sand or earth and place into containers. Containers with collected spillage must be properly labeled with correct contents and hazard symbol. Collect and dispose of spillage as indicated in section 13 of the MSDS.

Small Spills: Absorb spillage with suitable absorbent material. Collect in containers and seal securely.

Never return spills in original containers for re-use.

Other information

Clean up in accordance with all applicable regulations.

7. Handling and Storage

Handling

People working with this product should get instructions before use. This product should only be used in an industrial workplace. Pregnant women should not work with the product, if there is the least risk of exposure. Should be handled in closed systems, if possible. Wear appropriate personal protective equipment. Avoid inhalation of vapors and contact with skin and eyes. Do not smoke and do not spray near an open flame or other sources of ignition. Vapors are heavier than air and may travel along the floor and in the bottom of containers. Ground container and transfer equipment to eliminate static electric sparks. Observe good industrial hygiene practices.

Storage

Keep away from heat, sparks and open flame. Do not store near heat sources or expose to high temperatures. Store in closed original container in a dry place. Keep in a well-ventilated place. Keep this material away from food, drink and animal feed. Store away from incompatible materials.

8. Exposure Controls / Personal Protection

Occupational exposure limits

US. ACGIH Threshold Limit Values

Components	Type	Value
Naphthalene (91-20-3)	TWA	10 ppm
	STEL	15 ppm
P-xylene (106-42-3)	TWA	100 ppm
	STEL	150 ppm

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Components	Type	Value
Naphthalene (91-20-3)	PEL	10 ppm
		50 mg/m ³
P-xylene (106-42-3)	PEL	100 ppm
		435 mg/m ³

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
Naphthalene (91-20-3)	TWA	10 ppm
	STEL	15 ppm
	TWA	52 mg/m ³
	STEL	79 mg/m ³
P-xylene (106-42-3)	TWA	100 ppm
	STEL	150 ppm

Canada. Alberta OELs (Occupational Health & Safety Code, Schedule 1, Table 2)

Components	Type	Value
	TWA	434 mg/m3
	STEL	651 mg/m3

Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended)

Components	Type	Value
Naphthalene (91-20-3)	TWA	10 ppm
	STEL	15 ppm
P-xylene (106-42-3)	TWA	100 ppm
	STEL	150 ppm

Canada. Ontario OELs. (Ministry of Labor - Control of Exposure to Biological or Chemical Agents)

Components	Type	Value
Naphthalene (91-20-3)	TWA	10 ppm
	STEL	15 ppm
	TWA	52 mg/m3
	STEL	78 mg/m3
P-xylene (106-42-3)	TWA	100 ppm
	STEL	150 ppm
	TWA	435 mg/m3
	STEL	650 mg/m3

Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment)

Components	Type	Value
Benzo[a]pyrene (50-32-8)	TWA	0.005 mg/m3
Naphthalene (91-20-3)	TWA	10 ppm
	STEL	15 ppm
	TWA	52 mg/m3
	STEL	79 mg/m3
P-xylene (106-42-3)	TWA	100 ppm
	STEL	150 ppm
	TWA	434 mg/m3
	STEL	651 mg/m3

Mexico. Occupational Exposure Limit Values

Components	Type	Value
Naphthalene (91-20-3)	TWA	10 ppm
	STEL	15 ppm
	TWA	50 mg/m3
	STEL	75 mg/m3
P-xylene (106-42-3)	TWA	100 ppm
	STEL	150 ppm
	TWA	435 mg/m3
	STEL	655 mg/m3

Exposure guidelines

No exposure standards allocated.

Engineering controls

This product must not be heated in a sealed or confined space which has no avenue to allow pressure relief of the expanding vapors. This could cause excessive pressure buildup, blow back of materials, and explosion. Mechanical ventilation or local exhaust ventilation may be required. Use explosion-proof equipment. Provide adequate ventilation. Observe occupational exposure limits and minimize the risk of inhalation of dust, fumes and vapors. Provide access to washing facilities including soap, skin cleanser and fatty cream.

Personal protective equipment**Eye / face protection**

Wear approved safety goggles.

Skin protection

Wear protective gloves. Be aware that the liquid may penetrate the gloves. Frequent change is advisable. Suitable gloves can be recommended by the glove supplier. Wear appropriate chemical resistant clothing to prevent any possibility of skin contact.

Respiratory protection

If enclosed handling cannot be guaranteed, ventilation and protective clothing must be used. In the United States of America, if respirators are used, a program should be instituted to assure compliance with OSHA Standard 63 FR 1152, January 8, 1998. Use a NIOSH/MSHA approved air purifying respirator as needed to control exposure. Consult with respirator manufacturer to determine respirator selection, use, and limitations. Use positive pressure, air-supplied respirator for uncontrolled releases or when air purifying respirator limitations may be exceeded. Follow respirator protection program requirements (OSHA 1910.134 and ANSI Z88.2) for all respirator use.

General hygiene considerations

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and immediately after handling the product. When using, do not eat, drink or smoke. Launder contaminated clothing before reuse. Remove and isolate contaminated clothing and shoes. Observe any medical surveillance requirements.

9. Physical & Chemical Properties

Appearance	Oily, viscous liquid.
Color	Dark brown.
Odor	Strong aromatic, tar-like.
Odor threshold	Not available.
Physical state	Liquid.
Form	Liquid.
pH	7 - 8
Melting point	Not applicable.
Freezing point	Not applicable.
Boiling point	> 381.2 °F (> 194 °C)
Flash point	> 311 °F (> 155 °C) Pensky-Martens Closed Cup (ASTM D-93)
Evaporation rate	< 1 (Butyl acetate = 1.0)
Flammability limits in air, upper, % by volume	No data available.
Flammability limits in air, lower, % by volume	No data available.
Vapor pressure	13 mm Hg (25°C, Approx.)
Vapor density	> 1 (Air=1)
Specific gravity	1.03 - 1.18
Solubility (water)	Insoluble.
Partition coefficient (n-octanol/water)	Not available.
Auto-ignition temperature	636.8 °F (336 °C)
Decomposition temperature	Not available.
Viscosity	No data available.
Bulk density	8.6 - 9.85 lb/gal
Density	1.03 - 1.18
Percent volatile	475 g/l

10. Chemical Stability & Reactivity Information

Chemical stability	Stable under normal temperature conditions.
Conditions to avoid	Heat, flames and sparks.
Incompatible materials	Strong oxidizing agents. Mixing of chlorosulfonic acid and creosote oil in a closed container can cause an increase in temperature and pressure (NFPA 491M, 1991).
Hazardous decomposition products	Aromatic hydrocarbons. Carbon oxides. Nitrogen oxides. Sulfur oxides.
Possibility of hazardous reactions	Hazardous polymerization does not occur.

11. Toxicological Information**Toxicological data
Components****Test Results**

P-xylene (106-42-3)	Acute Dermal LD50 Rabbit: > 43 g/kg Acute Inhalation LCL0 Rat: 8000 mg/l 4 Hours Acute Oral LD50 Rat: 3523 - 8600 mg/kg
Anthracene (120-12-7)	Acute Dermal LD50 Rat: > 1320 mg/kg Acute Oral LD50 Rat: > 16000 mg/kg

Components		Test Results
Fluoranthene (206-44-0)		Acute Dermal LD50 Rabbit: 3180 mg/kg
Creosote (8001-58-9)		Acute Dermal LD50 Rabbit: > 2000 mg/kg
Naphthalene (91-20-3)		Acute Oral LD50 Rat: 725 mg/kg Acute Dermal LD50 Rabbit: > 2 g/kg
Quinoline (91-22-5)		Acute Oral LD50 Rat: 490 mg/kg Acute Dermal LD50 Rabbit: 540 mg/kg Acute Oral LD50 Rat: 331 mg/kg
Acute effects	May be harmful if swallowed.	
Local effects	Causes skin, eye and respiratory tract irritation.	
US ACGIH Threshold Limit Values: Skin designation		
Naphthalene (CAS 91-20-3)		Can be absorbed through the skin.
Sensitization	May cause allergic skin reaction. May cause photosensitization, evidenced by repeated occurrence of a dermatitic rash on exposure to sunlight.	
Chronic effects	The coal tar pitch component of this formulation contains polynuclear aromatic hydrocarbons (PAHs). Some PAHs are recognized carcinogens and may cause skin, lung and bladder cancer. May cause central nervous system effects. May cause damage to the liver and kidneys. May cause lung damage. May cause blood damage. May cause photosensitization, evidenced by repeated occurrence of a dermatitic rash on exposure to sunlight. Pre-existing skin and respiratory conditions including dermatitis, asthma and chronic lung disease might be aggravated by exposure. Chronic exposure may cause conjunctivitis, blepharoconjunctivitis and photophobia.	
Carcinogenicity	Suspect cancer hazard. May cause scrotal and bladder cancer. Repeated exposure to coal tar products may increase the risk of more serious skin disorders including a variety of skin cancers. Some skin cancers, such as malignant melanoma, have a high mortality rate.	
ACGIH Carcinogens		
1,2-Benzphenanthrene (CAS 218-01-9)		A3 Confirmed animal carcinogen with unknown relevance to humans.
Benz[a]anthracene (CAS 56-55-3)		A2 Suspected human carcinogen.
Benzo[a]pyrene (CAS 50-32-8)		A2 Suspected human carcinogen.
Benzo[b]fluoranthene (CAS 205-99-2)		A2 Suspected human carcinogen.
Naphthalene (CAS 91-20-3)		A4 Not classifiable as a human carcinogen.
P-xylene (CAS 106-42-3)		A4 Not classifiable as a human carcinogen.
IARC Monographs. Overall Evaluation of Carcinogenicity		
1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)		2B Possibly carcinogenic to humans.
1,2-Benzphenanthrene (CAS 218-01-9)		2B Possibly carcinogenic to humans.
Acenaphthene (CAS 83-32-9)		3 Not classifiable as to carcinogenicity to humans.
Anthracene (CAS 120-12-7)		3 Not classifiable as to carcinogenicity to humans.
Benz[a]anthracene (CAS 56-55-3)		2B Possibly carcinogenic to humans.
Benzo[a]pyrene (CAS 50-32-8)		1 Carcinogenic to humans.
Benzo[b]fluoranthene (CAS 205-99-2)		2B Possibly carcinogenic to humans.
Benzo[j]fluoranthene (CAS 205-82-3)		2B Possibly carcinogenic to humans.
Benzo[k]fluoranthene (CAS 207-08-9)		2B Possibly carcinogenic to humans.
Fluoranthene (CAS 206-44-0)		3 Not classifiable as to carcinogenicity to humans.
Naphthalene (CAS 91-20-3)		2B Possibly carcinogenic to humans.
Phenanthrene (CAS 85-01-8)		3 Not classifiable as to carcinogenicity to humans.
P-xylene (CAS 106-42-3)		3 Not classifiable as to carcinogenicity to humans.
Pyrene (CAS 129-00-0)		3 Not classifiable as to carcinogenicity to humans.
US NTP Report on Carcinogens: Anticipated carcinogen		
1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)		Anticipated carcinogen.
Benz[a]anthracene (CAS 56-55-3)		Anticipated carcinogen.
Benzo[a]pyrene (CAS 50-32-8)		Anticipated carcinogen.
Benzo[b]fluoranthene (CAS 205-99-2)		Anticipated carcinogen.
Benzo[j]fluoranthene (CAS 205-82-3)		Anticipated carcinogen.
Benzo[k]fluoranthene (CAS 207-08-9)		Anticipated carcinogen.
Naphthalene (CAS 91-20-3)		Anticipated carcinogen.
Mutagenicity	No data available.	

Neurological effects	No data available.
Reproductive effects	No data available.
Symptoms and target organs	Inhalation: May cause damage to mucous membranes in nose, throat, lungs and bronchial system. Eye contact: May cause redness and pain. Skin contact: Sensitization. Ingestion may cause dizziness, nausea and vomiting. Be aware that symptoms of chemical pneumonia (shortness of breath) may occur several hours after exposure.
Further information	Swallowing or vomiting of the liquid may result in aspiration into the lungs.

12. Ecological Information

Ecotoxicological data Components

Test Results

P-xylene (106-42-3)	EC50 Water flea (Daphnia magna): 3.55 - 6.31 mg/l 48 hours LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 2.6 mg/l 96 hours
Anthracene (120-12-7)	EC50 Water flea (Daphnia magna): 0.081 - 0.112 mg/l 48 hours LC50 Bluegill (Lepomis macrochirus): 0 - 0.0032 mg/l 96 hours
Pyrene (129-00-0)	LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): > 2 mg/l 96 hours
Dibenzofuran (132-64-9)	LC50 Fathead minnow (Pimephales promelas): 0.84 - 1.31 mg/l 96 hours
Fluoranthene (206-44-0)	LC50 Winter flounder (Pleuronectes americanus): 0.0001 - 0.0001 mg/l 96 hours
Acenaphthene (83-32-9)	EC50 Water flea (Daphnia magna): 1.102 - 1.475 mg/l 48 hours LC50 Brown trout (Salmo trutta): 0.51 - 0.66 mg/l 96 hours
Phenanthrene (85-01-8)	EC50 Water flea (Daphnia magna): 0.185 - 0.243 mg/l 48 hours LC50 Sheepshead minnow (Cyprinodon variegatus): 0.438 - 0.523 mg/l 96 hours
Naphthalene (91-20-3)	EC50 Water flea (Daphnia magna): 1.09 - 3.4 mg/l 48 hours LC50 Rainbow trout,donaldson trout (Oncorhynchus mykiss): 0.91 - 2.82 mg/l 96 hours
Quinoline (91-22-5)	EC50 Water flea (Daphnia magna): 45.9 - 57.3 mg/l 48 hours LC50 Fathead minnow (Pimephales promelas): 0.12 - 1.32 mg/l 96 hours

Ecotoxicity	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.
Persistence and degradability	No data available.
Bioaccumulation / Accumulation	No data available.
Partition coefficient (n-octanol/water)	Not available.
Mobility in environmental media	The product is slightly soluble in water.

13. Disposal Considerations

Waste codes	U051: Waste Creosote
Disposal instructions	Dispose of this material and its container at hazardous or special waste collection point. Do not incinerate sealed containers. Do not allow this material to drain into sewers/water supplies. Dispose in accordance with all applicable regulations.
Waste from residues / unused products	Dispose of in accordance with local regulations.
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport Information

DOT

Basic shipping requirements:

UN number	UN3082
Proper shipping name	Environmentally hazardous substances, liquid, n.o.s. (Naphthalene RQ = 1203 LBS, Anthracene RQ = 256237 LBS)
Hazard class	9
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Labels required	9
Additional information:	
Special provisions	8, 146, 335, IB3, T4, TP1, TP29
Packaging exceptions	155
Packaging non bulk	203
Packaging bulk	241
ERG number	171

IATA

Basic shipping requirements:

UN number	3082
Proper shipping name	Environmentally hazardous substance, liquid, n.o.s. (Naphthalene, Anthracene)
Hazard class	9
Packing group	III
Environmental hazards	
Marine pollutant	Yes
Additional information:	
ERG code	9L

IMDG

Basic shipping requirements:

UN number	3082
Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Naphthalene, Anthracene)
Hazard class	9
Packing group	III
Environmental hazards	
Marine pollutant	Yes
EmS No.	F-A, S-F

TDG

Basic shipping requirements:

Proper shipping name	ENVIRONMENTALLY HAZARDOUS SUBSTANCE, LIQUID, N.O.S. (Naphthalene, Anthracene)
Hazard class	9
UN number	UN3082
Packing group	III
Marine pollutant	Yes
Additional information:	
Special provisions	16

General Read safety instructions, MSDS and emergency procedures before handling.

15. Regulatory Information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification(40 CFR 707, Subpt. D)

NAPHTHALENE (CAS 91-20-3)	0.1 % One-Time Export Notification only.
P-XYLENE (CAS 106-42-3)	1.0 % One-Time Export Notification only.

US CAA Section 112 Hazardous Air Pollutants (HAPs) List

DIBENZOFURANS (CAS 132-64-9)
NAPHTHALENE (CAS 91-20-3)
POLYCYCLIC ORGANIC MATTER (CAS 120-12-7)

POLYCYCLIC ORGANIC MATTER (CAS 129-00-0)
POLYCYCLIC ORGANIC MATTER (CAS 193-39-5)
POLYCYCLIC ORGANIC MATTER (CAS 205-82-3)
POLYCYCLIC ORGANIC MATTER (CAS 205-99-2)
POLYCYCLIC ORGANIC MATTER (CAS 206-44-0)
POLYCYCLIC ORGANIC MATTER (CAS 207-08-9)
POLYCYCLIC ORGANIC MATTER (CAS 218-01-9)
POLYCYCLIC ORGANIC MATTER (CAS 50-32-8)
POLYCYCLIC ORGANIC MATTER (CAS 56-55-3)
POLYCYCLIC ORGANIC MATTER (CAS 83-32-9)
POLYCYCLIC ORGANIC MATTER (CAS 85-01-8)
P-XYLENES (CAS 106-42-3)
QUINOLINE (CAS 91-22-5)

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Spill: Reportable quantity

Pyrene (CAS 129-00-0) 5000 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold planning quantity, lower value

Pyrene (CAS 129-00-0) 1000 LBS

US EPCRA (SARA Title III) Section 302 - Extremely Hazardous Substance: Threshold planning quantity, upper value

Pyrene (CAS 129-00-0) 10000 LBS

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: De minimis concentration

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
1,2-Benzphenanthrene (CAS 218-01-9)	1.0 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
Anthracene (CAS 120-12-7)	1.0 %
Benz[a]anthracene (CAS 56-55-3)	0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
Benzo[a]pyrene (CAS 50-32-8)	0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
Benzo[b]fluoranthene (CAS 205-99-2)	0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
Benzo[j]fluoranthene (CAS 205-82-3)	0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
Benzo[k]fluoranthene (CAS 207-08-9)	0.1 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
Creosote (CAS 8001-58-9)	0.1 %
Dibenzofuran (CAS 132-64-9)	1.0 %
Fluoranthene (CAS 206-44-0)	1.0 % Substance is not eligible for the de minimis exemption except for the purposes of supplier notification requirements.
Naphthalene (CAS 91-20-3)	0.1 %
Phenanthrene (CAS 85-01-8)	1.0 %
P-xylene (CAS 106-42-3)	1.0 %
Quinoline (CAS 91-22-5)	1.0 %

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Reportable threshold

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	100 LBS
1,2-Benzphenanthrene (CAS 218-01-9)	100 LBS
Benz[a]anthracene (CAS 56-55-3)	100 LBS
Benzo[a]pyrene (CAS 50-32-8)	100 LBS
Benzo[b]fluoranthene (CAS 205-99-2)	100 LBS
Benzo[j]fluoranthene (CAS 205-82-3)	100 LBS
Benzo[k]fluoranthene (CAS 207-08-9)	100 LBS
Fluoranthene (CAS 206-44-0)	100 LBS

US EPCRA (SARA Title III) Section 313 - Toxic Chemical: Listed substance

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	Listed.
1,2-Benzphenanthrene (CAS 218-01-9)	Listed.
Anthracene (CAS 120-12-7)	Listed.
Benz[a]anthracene (CAS 56-55-3)	Listed.
Benzo[a]pyrene (CAS 50-32-8)	Listed.
Benzo[b]fluoranthene (CAS 205-99-2)	Listed.
Benzo[j]fluoranthene (CAS 205-82-3)	Listed.
Benzo[k]fluoranthene (CAS 207-08-9)	Listed.
Creosote (CAS 8001-58-9)	Listed.
Dibenzofuran (CAS 132-64-9)	Listed.
Fluoranthene (CAS 206-44-0)	Listed.

Naphthalene (CAS 91-20-3)	Listed.
Phenanthrene (CAS 85-01-8)	Listed.
P-xylene (CAS 106-42-3)	Listed.
Quinoline (CAS 91-22-5)	Listed.

CERCLA (Superfund) reportable quantity (lbs) (40 CFR 302.4)

Creosote: 1
 Naphthalene: 100
 Phenanthrene: 5000
 Acenaphthene: 100
 Fluoranthene: 100
 Pyrene: 5000
 Dibenzofuran: 100
 Anthracene: 5000
 1,2-Benzphenanthrene: 100
 Benz[a]anthracene: 10
 Benzo[b]fluoranthene: 1
 Benzo[a]pyrene: 1
 Benzo[k]fluoranthene: 5000
 1,10-(1,2-Phenylene)pyrene: 100
 Quinoline: 5000
 P-xylene: 100

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories	Immediate Hazard - Yes
	Delayed Hazard - Yes
	Fire Hazard - No
	Pressure Hazard - No
	Reactivity Hazard - No

Section 302 extremely hazardous substance (40 CFR 355, Appendix A)	No
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Section 311/312 (40 CFR 370)	Yes
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Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)	Not controlled
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Canadian regulations	This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.
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WHMIS status	Controlled
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WHMIS classification	D2A - Other Toxic Effects-VERY TOXIC
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WHMIS labeling



Inventory status

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	No
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	No
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	No
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	No
Korea	Existing Chemicals List (ECL)	No
New Zealand	New Zealand Inventory	No
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	No

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	No

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

State regulations WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US - California Hazardous Substances (Director's): Listed substance

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	Listed.
1,2-Benzphenanthrene (CAS 218-01-9)	Listed.
Acenaphthene (CAS 83-32-9)	Listed.
Anthracene (CAS 120-12-7)	Listed.
Benz[a]anthracene (CAS 56-55-3)	Listed.
Benzo[a]pyrene (CAS 50-32-8)	Listed.
Benzo[b]fluoranthene (CAS 205-99-2)	Listed.
Benzo[j]fluoranthene (CAS 205-82-3)	Listed.
Benzo[k]fluoranthene (CAS 207-08-9)	Listed.
Creosote (CAS 8001-58-9)	Listed.
Fluoranthene (CAS 206-44-0)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
Phenanthrene (CAS 85-01-8)	Listed.
P-xylene (CAS 106-42-3)	Listed.
Pyrene (CAS 129-00-0)	Listed.
Quinoline (CAS 91-22-5)	Listed.

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	Listed.
1,2-Benzphenanthrene (CAS 218-01-9)	Listed.
Benz[a]anthracene (CAS 56-55-3)	Listed.
Benzo[a]pyrene (CAS 50-32-8)	Listed.
Benzo[b]fluoranthene (CAS 205-99-2)	Listed.
Benzo[j]fluoranthene (CAS 205-82-3)	Listed.
Benzo[k]fluoranthene (CAS 207-08-9)	Listed.
Creosote (CAS 8001-58-9)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
Quinoline (CAS 91-22-5)	Listed.

US - California Proposition 65 - CRT: Listed date/Carcinogenic substance

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	Listed: January 1, 1988 Carcinogenic.
1,2-Benzphenanthrene (CAS 218-01-9)	Listed: January 1, 1990 Carcinogenic.
Benz[a]anthracene (CAS 56-55-3)	Listed: July 1, 1987 Carcinogenic.
Benzo[a]pyrene (CAS 50-32-8)	Listed: July 1, 1987 Carcinogenic.
Benzo[b]fluoranthene (CAS 205-99-2)	Listed: July 1, 1987 Carcinogenic.
Benzo[j]fluoranthene (CAS 205-82-3)	Listed: July 1, 1987 Carcinogenic.
Benzo[k]fluoranthene (CAS 207-08-9)	Listed: July 1, 1987 Carcinogenic.
Creosote (CAS 8001-58-9)	Listed: October 1, 1988 Carcinogenic.
Naphthalene (CAS 91-20-3)	Listed: April 19, 2002 Carcinogenic.
Quinoline (CAS 91-22-5)	Listed: October 24, 1997 Carcinogenic.

US - Massachusetts RTK - Substance: Listed substance

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	Listed.
1,2-Benzphenanthrene (CAS 218-01-9)	Listed.
Acenaphthene (CAS 83-32-9)	Listed.
Anthracene (CAS 120-12-7)	Listed.
Benz[a]anthracene (CAS 56-55-3)	Listed.
Benzo[a]pyrene (CAS 50-32-8)	Listed.
Benzo[b]fluoranthene (CAS 205-99-2)	Listed.
Benzo[j]fluoranthene (CAS 205-82-3)	Listed.
Benzo[k]fluoranthene (CAS 207-08-9)	Listed.
Creosote (CAS 8001-58-9)	Listed.
Dibenzofuran (CAS 132-64-9)	Listed.
Fluoranthene (CAS 206-44-0)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
Phenanthrene (CAS 85-01-8)	Listed.
P-xylene (CAS 106-42-3)	Listed.
Pyrene (CAS 129-00-0)	Listed.
Quinoline (CAS 91-22-5)	Listed.

US - New Jersey Community RTK (EHS Survey): Reportable threshold

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	500 LBS
1,2-Benzphenanthrene (CAS 218-01-9)	500 LBS
Anthracene (CAS 120-12-7)	500 LBS
Benz[a]anthracene (CAS 56-55-3)	500 LBS
Benzo[a]pyrene (CAS 50-32-8)	500 LBS
Benzo[b]fluoranthene (CAS 205-99-2)	500 LBS
Benzo[j]fluoranthene (CAS 205-82-3)	500 LBS
Benzo[k]fluoranthene (CAS 207-08-9)	500 LBS
Creosote (CAS 8001-58-9)	500 LBS
Dibenzofuran (CAS 132-64-9)	500 LBS
Fluoranthene (CAS 206-44-0)	500 LBS
Naphthalene (CAS 91-20-3)	500 LBS
Phenanthrene (CAS 85-01-8)	500 LBS
P-xylene (CAS 106-42-3)	500 LBS
Pyrene (CAS 129-00-0)	500 LBS
Quinoline (CAS 91-22-5)	500 LBS

US - New Jersey RTK - Substances: Listed substance

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	Listed.
1,2-Benzphenanthrene (CAS 218-01-9)	Listed.
Acenaphthene (CAS 83-32-9)	Listed.
Anthracene (CAS 120-12-7)	Listed.
Benz[a]anthracene (CAS 56-55-3)	Listed.
Benzo[a]pyrene (CAS 50-32-8)	Listed.
Benzo[b]fluoranthene (CAS 205-99-2)	Listed.
Benzo[j]fluoranthene (CAS 205-82-3)	Listed.
Benzo[k]fluoranthene (CAS 207-08-9)	Listed.
Creosote (CAS 8001-58-9)	Listed.
Dibenzofuran (CAS 132-64-9)	Listed.
Fluoranthene (CAS 206-44-0)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
Phenanthrene (CAS 85-01-8)	Listed.
P-xylene (CAS 106-42-3)	Listed.
Pyrene (CAS 129-00-0)	Listed.
Quinoline (CAS 91-22-5)	Listed.

US - Pennsylvania RTK - Hazardous Substances: Listed substance

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	Listed.
1,2-Benzphenanthrene (CAS 218-01-9)	Listed.
Acenaphthene (CAS 83-32-9)	Listed.
Anthracene (CAS 120-12-7)	Listed.
Benz[a]anthracene (CAS 56-55-3)	Listed.
Benzo[a]pyrene (CAS 50-32-8)	Listed.
Benzo[b]fluoranthene (CAS 205-99-2)	Listed.
Benzo[j]fluoranthene (CAS 205-82-3)	Listed.
Benzo[k]fluoranthene (CAS 207-08-9)	Listed.
Creosote (CAS 8001-58-9)	Listed.
Dibenzofuran (CAS 132-64-9)	Listed.
Fluoranthene (CAS 206-44-0)	Listed.
Naphthalene (CAS 91-20-3)	Listed.
Phenanthrene (CAS 85-01-8)	Listed.
P-xylene (CAS 106-42-3)	Listed.
Pyrene (CAS 129-00-0)	Listed.
Quinoline (CAS 91-22-5)	Listed.

US - Pennsylvania RTK - Hazardous Substances: Special hazard

1,10-(1,2-Phenylene)pyrene (CAS 193-39-5)	Special hazard.
Benz[a]anthracene (CAS 56-55-3)	Special hazard.
Benzo[a]pyrene (CAS 50-32-8)	Special hazard.
Benzo[b]fluoranthene (CAS 205-99-2)	Special hazard.
Benzo[j]fluoranthene (CAS 205-82-3)	Special hazard.
Benzo[k]fluoranthene (CAS 207-08-9)	Special hazard.
Creosote (CAS 8001-58-9)	Special hazard.

Mexico regulations

This safety data sheet was prepared in accordance with the Official Mexican Standard (NOM-018-STPS-2000).

16. Other Information

Further information

HMIS® is a registered trade and service mark of the NPCA.
H - Goggles, Gloves, Apron, Vapor Respirator

HMIS® ratings

Health: 2*
Flammability: 1
Physical hazard: 0
Personal protection: H

NFPA ratings

Health: 2
Flammability: 1
Instability: 0

Disclaimer

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Safety Data Sheet (SDS) and was prepared pursuant to Government regulation(s) that identify specific types of information to be provided. This SDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. Additional information may be needed to evaluate other uses of the product, including use of the product in combination with any materials or in any processes other than those specifically referenced. Information provided herein with respect to any hazards that may be associated with the product is not meant to suggest that use of the product in a given application will necessarily result in any exposure or risk to workers or the general public. No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product. Purchasers and users assume all risk of use, storage and handling of the product in compliance with applicable federal, state and local laws and regulations. Purchasers and users of the product specifically should advise all of their employees, agents, contractors and customers who will use the product of this (M)SDS.

Issue date

08-26-2011



Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

SDS ID: 00228327

Section 1 - IDENTIFICATION

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

Recommended Use

Industrial wood products; specifically railroad ties, utility poles, and marine pilings.

Restrictions on Use

Creosote treated wood is intended for exterior/outdoor uses and only those applications approved by the American Wood Protection Association (AWPA) Use Category System as set forth in the most current edition of the AWPA Book of Standards. Refer to preservative label for more details.

Manufacturer Information

KOPPERS INC.
436 Seventh Avenue
Pittsburgh, PA 15219-1800
Mfg Contact: 412-227-2001 (SDS Requests: 866-852-5239)

CHEMTREC: 800-424-9300 (Outside USA: +1 703-527-3887)
Emergencies: (Medical in USA): 877-737-9047
Emergencies: (Medical Outside of USA): 651-632-9269
Email: naorgmsds@koppers.com

Section 2 - HAZARD(S) IDENTIFICATION

Classification in accordance with 29 CFR 1910.1200

Combustible dust
Skin Corrosion / Irritation, Category 2
Eye Damage / Irritation, Category 2A
Respiratory sensitizer, Category 1
Skin sensitizer, Category 1
Carcinogenicity, Category 1A
Specific Target Organ Toxicity - Single Exposure, Category 3 (respiratory system)

GHS LABEL ELEMENTS

Symbol(s)



Signal Word

DANGER

Hazard Statement(s)

May form combustible dust concentrations in air (during handling or processing).
Causes skin irritation
Causes serious eye irritation
May cause allergy or asthma symptoms or breathing difficulties if inhaled
May cause an allergic skin reaction
May cause cancer
May cause respiratory irritation

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

SDS ID: 00228327

Precautionary Statement(s)

Prevention

Avoid breathing dust. Wash thoroughly after handling. Wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.

Response

IF exposed or concerned: Get medical advice/attention. IF INHALED: Remove person to fresh air and keep comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell. If experiencing respiratory symptoms: Call a POISON CENTER or doctor/physician. IF ON SKIN: Wash with plenty of soap and water. If skin irritation or rash occurs: Get medical advice/attention. Take off contaminated clothing and wash before re-use. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention.

Storage

Store in a well-ventilated place. Store locked up.

Disposal

Dispose in accordance with all applicable regulations.

Hazard(s) Not Otherwise Classified

None known.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

CAS	Component	Percent (weight)
Not Available	WOOD DUST, HARDWOODS	<85
Not Available	WOOD DUST, SOFTWOODS	<85
8001-58-9	COAL TAR CREOSOTE	<15

Component Related Regulatory Information

This product may be regulated, have exposure limits or other information identified as the following: Wood dusts-hard wood, Wood dusts (birch, mahogany, teak, walnut), Wood dusts (all other wood dusts), Wood dust, western red cedar, Wood dust, all soft and hard woods, Particulates not otherwise classified (PNOC), Wood dusts (all other wood dusts), Wood dust, western red cedar, Wood dust, all soft and hard woods, Particulates not otherwise classified (PNOC), Creosotes, Aromatic hydrocarbons, polycyclic (130498-29-2),

Section 4 - FIRST-AID MEASURES

Description of Necessary Measures

Inhalation

If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. If breathing is difficult, oxygen should be administered by qualified personnel. Get immediate medical attention.

Skin

Take off contaminated clothing. Wash with plenty of soap and water. Thoroughly clean and dry contaminated clothing and shoes before reuse. Skin contact causes photosensitization which can last for 36-72 hours after exposure. Keep out of direct sunlight for the next two to three days to avoid sunburn to the photosensitized skin areas. Use a broad spectrum blockout cream to protect against UV alpha ray exposure. Get medical attention, if needed.

Eyes

DO NOT rub eyes. Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Then get immediate medical attention.

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

SDS ID: 00228327

Ingestion

If swallowed, get medical attention.

Most Important Symptoms/Effects

Acute

respiratory tract irritation, skin irritation, eye irritation, allergic reactions

Delayed

allergic reactions, nasal cancer, skin cancer

Indication of Immediate Medical Attention and Special Treatment Needed, if Necessary

For inhalation, consider oxygen.

* * *Section 5 - FIRE-FIGHTING MEASURES* * *

Suitable Extinguishing Media

water stream, water spray or fog

Unsuitable Extinguishing Media

Do not scatter spilled material with high-pressure water streams.

Specific Hazards Arising from the Chemical

Slight fire hazard. Avoid generating dust.

Hazardous Combustion Products

Combustion Products: oxides of carbon, oxides of nitrogen

Fire Fighting Measures

Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas. Keep unnecessary people away, isolate hazard area and deny entry.

Special Protective Equipment and Precautions for Firefighters

Wear full protective firefighting gear including self-contained breathing apparatus (SCBA) for protection against possible exposure.

Sensitivity to Mechanical Impact

Not sensitive

Sensitivity to Static Discharge

Not sensitive

* * *Section 6 - ACCIDENTAL RELEASE MEASURES* * *

Personal Precautions, Protective Equipment and Emergency Procedures

Wear personal protective clothing and equipment, see Section 8. Avoid release to the environment. Collect spillage.

Methods and Materials for Containment and Cleaning Up

Collect material in appropriate container for disposal. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air). Collect using a vacuum cleaner with a HEPA filter or wet and scoop up dry spills. Dust deposits should not be allowed to accumulate on surfaces, as these may form an explosive mixture if they are released into the atmosphere in sufficient concentration. Avoid sweeping spilled dry material. If sweeping of a contaminated area is necessary, use a dust suppressant agent. Eliminate all sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Due to the concentration of Creosote and the CERCLA (40 CFR 302.4) reportable quantity of 1 pound, the release of 6 pounds of this product requires National Response Center notification.

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

SDS ID: 00228327

*****Section 7 - HANDLING AND STORAGE*****

Precautions for Safe Handling

Avoid breathing dust. Wash thoroughly after handling. Wear respiratory protection. Contaminated work clothing should not be allowed out of the workplace. Do not eat, drink, or smoke when using this product. Use only outdoors or in a well-ventilated area. Wear protective gloves/clothing and eye/face protection. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Minimize dust generation and accumulation. Routine housekeeping should be instituted to ensure that dusts do not accumulate on surfaces. Avoid significant deposits of material, especially on horizontal surfaces, which may become airborne and form combustible dust clouds and may contribute to secondary explosions. Dry wood dust material is defined as having a water content less than 25% by weight. Avoid frequent or prolonged inhalation of sawdust from treated wood. When sawing and machining treated wood, wear a dust mask. When power-sawing and machining, wear goggles to protect eyes from flying particles. Whenever possible, these operations should be performed outdoors to avoid indoor accumulations of airborne sawdust from treated wood. Avoid frequent or prolonged skin contact with creosote-treated wood; when handling the treated wood, wear long-sleeved shirts and long pants and use gloves impervious to the chemicals (for example, gloves that are vinyl-coated). Use protective skin cream on exposed skin before and during work shift. To reduce sun sensitivity a sun-blocking lotion can also be applied prior to application of a protective cream. After working with the wood, and before eating, drinking and use of tobacco products, wash exposed areas thoroughly. If oily preservative or sawdust accumulate on clothes, launder before reuse. Wash work clothes separately from other household clothing.

Conditions for Safe Storage, including any Incompatibilities

Store and handle in accordance with all current regulations and standards. Avoid heat, flames, sparks and other sources of ignition. Store in a well-ventilated area. Keep container tightly closed. Store locked up.

Incompatibilities: oxidizing materials, acids

*****Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION*****

Exposure Limits

In *AFL-CIO v OSHA*, 965 F. 2d 962 (11th Cir. 1992), the Court overturned OSHA's 1989 Air Contaminants Rule, including the specific PEL's for wood dust that OSHA had established at that time. The 1989 vacated PEL's were: 5 mg/m³ PEL-TWA and 10 mg/m³ STEL (15 min), all softwood and hardwood except Western Red Cedar. Wood dust is now regulated by OSHA as "Particulates Not Otherwise Regulated" (PNOR), which is also referred to as "nuisance dust". However, some states have incorporated the 1989 OSHA PEL's in their state plans. Additionally, OSHA indicated that it may cite employers under the OSHA general duty clause in appropriate circumstances for noncompliance with the 1989 PEL's.

Creosote is a complex mixture of variable composition, and while no odor threshold for creosote has been established, work done at the University of California has measured the odor thresholds for one of the more volatile components in creosote and determined that the involved odor threshold is in the part per billion range, and well below applicable exposure limits. On the basis of these data the perception of creosote odor in and of itself should not be taken as an indication of exposure in excess of accepted exposure limits. Exposure to wood dust would not be expected under normal use conditions. If handling or use patterns associated with creosote treated wood involve the use of a power saw, sander, drill or any tool or activity resulting in the generation of airborne particulate the wood dust exposure limits should be observed and appropriate steps taken to minimize exposure.

Safety Data Sheet

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Component Exposure Limits

WOOD DUST, HARDWOODS (Not Available)

OSHA (US): 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction, related to Particulates not otherwise classified (PNOC))

ACGIH: 1 mg/m³ TWA (inhalable fraction, related to Wood dusts (all other wood dusts))

WOOD DUST, SOFTWOODS (Not Available)

OSHA (US): 15 mg/m³ TWA (total dust); 5 mg/m³ TWA (respirable fraction, related to Particulates not otherwise classified (PNOC))

ACGIH: 1 mg/m³ TWA (inhalable fraction, related to Wood dusts (all other wood dusts))

COAL TAR CREOSOTE (8001-58-9)

OSHA (US): 0.2 mg/m³ TWA (benzene soluble fraction, related to Coal Tar Pitch Volatiles)

ACGIH: 0.2 mg/m³ TWA (as benzene soluble aerosol, related to Coal Tar Pitch Volatiles)

Biological Limit Values

COAL TAR CREOSOTE (8001-58-9)

ACGIH: Medium: urine Time: end of shift at end of workweek Parameter: 1-Hydroxypyrene with hydrolysis (nonquantitative, related to Aromatic hydrocarbons, polycyclic)

Appropriate Engineering Controls

Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Provide local exhaust or process enclosure ventilation system. Ensure that dust-handling systems (such as exhaust ducts, dust collectors, vessels, and processing equipment) are designed in a manner to prevent the escape of dust into the work area (i.e., there is no leakage from the equipment). Ensure compliance with applicable exposure limits.

Individual Protection Measures, such as Personal Protective Equipment

Eyes/Face Protection

ANSI Z87.1-1989 approved safety glasses with side shields.

Skin Protection

Wear tightly woven long-sleeved shirts and long pants. Remove and launder contaminated clothing separately from other laundry before reuse.

Glove Recommendations

Individuals must wear gloves impervious to the wood treatment formulations in all situations where dermal contact with creosote is expected.

Protective Materials

Examples of impervious materials for protective clothing (e.g. overalls, jackets, gloves and boots) required during application and handling of creosote are polyvinyl acetate (PVA), polyvinyl chloride (PVC), Neoprene and NBR (Buna-N)., Protective clothing must be changed when it shows signs of contamination.

Respiratory Protection

Any air-purifying respirator with a high-efficiency particulate filter.

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

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* * *Section 9 - PHYSICAL AND CHEMICAL PROPERTIES* * *

Physical State: Solid
Color: dark, brown to black

Appearance: dark brown to black solid
Physical Form: Pressure treated poles and crossies - treated at a retention level of 7-9 lbs/ft³, with a wood density of 45-55 lbs/ft³. Pressure treated piling - treated at a retention level of 12-20 lbs/ft³, Actual retention level dependent on wood stock, moisture levels, and customer specifications.

Odor: Not available
pH: Not applicable
Boiling Point: Not applicable
Decomposition Temperature: Not available
Lower Explosive Limit: Not available
Vapor Pressure: Not applicable
Specific Gravity (water=1): Not available
Log Kow: Not applicable
Viscosity: Not applicable
Flammability (solid, gas): Not flammable

Odor Threshold: Not available
Freezing / Melting Point: Not applicable
Flash Point: Not applicable
Evaporation Rate: Not applicable
Upper Explosive Limit: Not available
Vapor Density: Not applicable
Water Solubility: Not available
Autoignition Temp.: Not available
Volatility: Not applicable
OSHA Flammability Cat.: Not applicable

Other Property Information

No additional information is available.

* * *Section 10 - STABILITY AND REACTIVITY* * *

Reactivity

No reactivity hazard is expected.

Chemical Stability

Stable at normal temperatures and pressure.

Possibility of Hazardous Reactions

Will not polymerize.

Conditions to Avoid

Avoid heat, flames, sparks and other sources of ignition. Avoid accumulation of airborne dusts. Avoid contact with incompatible materials.

Incompatible Materials

oxidizing materials, acids

Hazardous Decomposition

Combustion Products: oxides of carbon, oxides of nitrogen

* * *Section 11 - TOXICOLOGICAL INFORMATION* * *

Acute Toxicity (Component)

>5.0 mg/L/4 hour(s) inhalation-rat LC50; >2000 mg/kg skin-rabbit LD50; 2197 mg/kg oral-rat LD50

Component Analysis - LD50/LC50

Data may be available for the components (if applicable, see below).

Information on Likely Routes of Exposure

Inhalation

irritation, allergic reactions, nasal cancer

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

SDS ID: 00228327

Ingestion

gastrointestinal irritation, bloating

Skin Contact

irritation, allergic reactions, skin cancer

Eye Contact

irritation

Immediate Effects

respiratory tract irritation, skin irritation, eye irritation, allergic reactions

Delayed Effects

allergic reactions, nasal cancer, skin cancer

Medical Conditions Aggravated by Exposure

respiratory disorders, skin disorders and allergies

Respiratory Sensitization

Component data indicate the substance is sensitizing.

Dermal Sensitization

Component data indicate the substance is sensitizing.

Germ Cell Mutagenicity

No data available.

Carcinogenicity (Product)

See applicable component information.

Component Carcinogenicity

WOOD DUST, HARDWOODS (Not Available)

- ACGIH:** A1 - Confirmed Human Carcinogen (related to Wood dusts-hard wood)
A2 - Suspected Human Carcinogen (related to Wood dusts (birch, mahogany, teak, walnut))
A4 - Not Classifiable as a Human Carcinogen (related to Wood dusts (all other wood dusts))
- NIOSH:** potential occupational carcinogen (related to Wood dust, all soft and hard woods)
- NTP:** Known Human Carcinogen (Select Carcinogen, related to Wood dust, all soft and hard woods)
- IARC:** Monograph 100C [2012]; Monograph 62 [1995] (Group 1 (carcinogenic to humans), related to Wood dust, all soft and hard woods)

WOOD DUST, SOFTWOODS (Not Available)

- ACGIH:** A4 - Not Classifiable as a Human Carcinogen (related to Wood dusts (all other wood dusts))
- NIOSH:** potential occupational carcinogen (related to Wood dust, all soft and hard woods)
- NTP:** Known Human Carcinogen (Select Carcinogen, related to Wood dust, all soft and hard woods)
- IARC:** Monograph 100C [2012]; Monograph 62 [1995] (Group 1 (carcinogenic to humans), related to Wood dust, all soft and hard woods)

COAL TAR CREOSOTE (8001-58-9)

- ACGIH:** A1 - Confirmed Human Carcinogen (related to Coal Tar Pitch Volatiles)
- NIOSH:** potential occupational carcinogen
- NTP:** Known Human Carcinogen (Select Carcinogen, related to Coal Tar Pitch Volatiles)
Reasonably Anticipated To Be A Human Carcinogen (Possible Select Carcinogen, related to Aromatic hydrocarbons, polycyclic)
- IARC:** Monograph 100F [2012]; Supplement 7 [1987]; Monograph 35 [1985] (Group 1 (carcinogenic to humans), related to Coal Tar Pitch Volatiles)

Reproductive Toxicity

No data available.

Specific Target Organ Toxicity - Single Exposure

respiratory system

Specific Target Organ Toxicity - Repeated Exposure

No data available.

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

SDS ID: 00228327

Aspiration Hazard

No data available.

Additional Information Based on Component Data

This product contains coal tar creosote. Volume 35 of the IARC monograph states that there is limited evidence that coal tar derived creosotes are carcinogenic in humans and sufficient evidence for the carcinogenicity of creosote in experimental animals. Limitations in the human exposure studies reviewed by IARC (including the presence of other chemicals, small study populations and not well documented exposure levels) contributed to IARC's conclusions regarding human exposure to creosote. When applied to the skin of mice in experimental studies, creosote produced skin tumors and in one study produced lung tumors.

Most available information on the effects of coal tar creosote in humans comes from older occupational studies in the wood-preserving and construction industries. Today, with the use of engineering controls and personal protective equipment, occupational exposure to creosote components is expected to be below permissible exposure limits (measured as Coal Tar Pitch Volatiles). Wood dust is particles of varying size produced from processing or handling wood. Cancer of the nasal cavities and sinuses is associated with exposure to hardwood dust. IARC concluded that there were too few studies to evaluate cancer risks attributable to exposure to softwood alone and to any particular species of wood. In view of the overall lack of consistent findings, IARC also concluded that there is no indication that occupational exposure to wood dust has a causal role in cancers of the throat, lung, lymphatic and blood systems, stomach, colon or rectum.

Different woods produce different health effects and there is evidence that wood from different trees of the same species can produce varying health effects. Woods other than Western Red Cedar (WRC) seem unlikely to be responsible for large numbers of cases of respiratory allergies. Other common wood dusts produce asthma/pulmonary effects that are less well described than the responses to WRC. These other wood species (e.g., oak and pine) are considered somewhat allergenic.

Section 12 - ECOLOGICAL INFORMATION

Component Analysis - Aquatic Toxicity

COAL TAR CREOSOTE (8001-58-9)

Fish: 96 Hr LC50 Brachydanio rerio: 2.6 - 6.6 mg/L [static]; 96 Hr LC50 Oncorhynchus mykiss: 0.57 mg/L [static]

Invertebrate: 48 Hr EC50 Daphnia magna: 1.04 mg/L; 48 Hr EC50 Daphnia magna: 0.065 - 0.082 mg/L [Static]

Persistence and Degradability

No information available for the product

Bioaccumulation Potential

No information available for the product.

Mobility

No information available for the product.

Other Adverse Effects

No data available.

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

SDS ID: 00228327

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Methods

Dispose in accordance with all applicable regulations. Treated wood should not be burned in open fires or in stoves, fireplaces or residential boilers, because toxic chemicals may be produced as part of the smoke and ashes. Treated wood from commercial or industrial use (e.g., construction sites) may be burned only in commercial or industrial incinerators or boilers in accordance with state and federal regulations. For more information please see Koppers Consumer Information Sheet for this product. RCRA Waste Number U051 – applies only to creosote in liquid form.

Component Waste Numbers

COAL TAR CREOSOTE (8001-58-9)

RCRA: waste number U051

Disposal of Contaminated Packaging

Dispose in accordance with all applicable regulations.

Section 14 - TRANSPORT INFORMATION

US DOT Information

No Classification assigned.

Component Marine Pollutants

This material does not contain any chemicals listed on the Hazardous Materials Table required by US DOT to be identified as a marine pollutant.

TDG Information

No Classification assigned.

IATA Information

No classification assigned.

Section 15 - REGULATORY INFORMATION

U.S. Federal Regulations

This material contains one or more of the following chemicals required to be identified under SARA Sections 302/304 (40 CFR 355 Appendix A), SARA Section 313 (40 CFR 372.65), CERCLA (40 CFR 302.4), TSCA 12(b), and/or require an OSHA process safety plan.

COAL TAR CREOSOTE (8001-58-9)

SARA 313: 0.1 % de minimis concentration

CERCLA: 1 lb final RQ; 0.454 kg final RQ

SARA 311/312 Hazardous Categories (40 CFR 370 Subparts B and C)

Acute Health: Yes Chronic Health: Yes Fire: No Pressure: No Reactive: No

U.S. State Regulations

The following components appear on one or more of the following state hazardous substances lists:

Component	CAS#	CA	MA	MN	NJ	PA
WOOD DUST, HARDWOODS (¹related to: Wood dust, all soft and hard woods) (²related to: Wood dusts-hard wood)	Not Available	No	No	Yes¹	Yes¹	Yes²
WOOD DUST, SOFTWOODS (¹related to: Wood dust, all soft and hard woods)	Not Available	No	No	Yes¹	Yes¹	No
COAL TAR CREOSOTE	8001-58-9	Yes	Yes	Yes	Yes	Yes

The following statement(s) are provided under the California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65):

WARNING! This product contains a chemical known to the state of California to cause cancer.

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

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Canadian Regulations

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all of the information required by the CPR.

WHMIS Classification

D2A, D2B.

WHMIS Ingredient Disclosure List

The following components are identified under the Canadian Hazardous Products Act Ingredient Disclosure List:

COAL TAR CREOSOTE (8001-58-9)

0.1 % (related to Coal Tar Pitch Volatiles)

Component Analysis - Inventory

Component	CAS	US	DSL	NDSL
COAL TAR CREOSOTE	8001-58-9	Yes	Yes	No

U.S. Inventory (TSCA)

This product is exempt.

Canada Inventory

This product is exempt.

* * *Section 16 - OTHER INFORMATION* * *

Additional Information

This wood product contains a pesticide product registered by the United States Environmental Protection Agency and is subject to certain labeling requirements under federal pesticide law. These requirements differ from the classification criteria and hazard information required for safety data sheets, and for workplace labels of non-pesticide chemicals. The pesticide label also includes other important information, including directions for use.

NFPA Ratings: Health= 2 Fire= 1 Reactivity= 0

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate 3 = Serious 4 = Severe

Review date

3/24/2015

Summary of Changes

Updated: 3/24/2015

SDS SUMMARY OF CHANGES

Multiple changes due to format (GHS) update.

Safety Data Sheet

Product Identifier: CREOSOTE PRESSURE TREATED WOOD

SDS ID: 00228327

Key / Legend

ACGIH - American Conference of Governmental Industrial Hygienists; ANSI - American National Standards Institute; BOD - Biochemical Oxygen Demand; C - Celsius; CA - Canada; CAS - Chemical Abstracts Service; CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act; CPR - Controlled Products Regulations; DOT - Department of Transportation; DSL - Domestic Substances List; EL50 – Effect Level 50%; EPA - Environmental Protection Agency; F - Fahrenheit; IARC - International Agency for Research on Cancer; IATA - International Air Transport Association; ICAO - International Civil Aviation Organization; IDL - Ingredient Disclosure List; IDLH - Immediately Dangerous to Life and Health; IMDG - International Maritime Dangerous Goods; Kow - Octanol/water partition coefficient; LC50 - Lethal Concentration, 50%; LD50 - Lethal Dose, 50%; LEL - Lower Explosive Limit; LL50 – Lethal Level 50%; LMPE-CT - Maximum Permissible Short Time Exposure Limit (Mexico); LMPE-PPT - Maximum Permissible Time-Weighted Average Exposure Limit (Mexico); LOLI - List Of Lists™ - ChemADVISOR's Regulatory Database; NDSL - Non-Domestic Substances List; NFPA - National Fire Protection Agency; NIOSH - National Institute for Occupational Safety and Health; NJTSR - New Jersey Trade Secret Registry; NOAEL - No observed adverse effect level; NOEL – No Observed Effect Level; NTP - National Toxicology Program; OSHA - Occupational Safety and Health Administration; PEL - Permissible Exposure Limit; RCRA - Resource Conservation and Recovery Act; RTECS - Registry of Toxic Effects of Chemical Substances®; SARA - Superfund Amendments and Reauthorization Act; STEL - Short-term Exposure Limit; TCLP – Toxicity Characteristic Leaching Procedure; TDG - Transportation of Dangerous Goods; TLV - Threshold Limit Value; TSCA - Toxic Substances Control Act; TWA - Time Weighted Average; UEL - Upper Explosive Limit; US - United States; WHMIS - Workplace Hazardous Materials Information System

Other Information

The information set forth in this Safety Data Sheet does not purport to be all-inclusive and should be used only as a guide. While the information and recommendations set forth herein are believed to be accurate, the company makes no warranty regarding such information and recommendations and disclaims all liability from reliance thereon.

End of Sheet 00228327

CREOSOTE PRESSURE-TREATED WOOD CONSUMER INFORMATION SHEET

CONSUMER INFORMATION *

This wood has been preserved by pressure treatment with a U. S. Environmental Protection Agency (EPA)-registered anti-microbial pesticide product containing creosote. Creosote pressure-treated wood provides protection against attack by fungi, insects, and marine borers.

Creosote remains in the pressure-treated wood for a long time. Prolonged or repeated exposure to creosote may present certain hazards. Therefore, the following precautions should be taken both when handling creosote-treated wood and determining where to use it.

This Consumer Information Sheet is not meant to replace the Material Safety Data Sheet (MSDS) for creosote pressure-treated wood. The MSDS must be read and understood before handling creosote pressure-treated Wood

Use Site Precautions for Creosote-Treated Wood

Creosote-treated wood commodities must only be used for those applications included in the American Wood Protection Association (AWPA) use category standards as set forth in the most current edition of the AWPA Book of Standards. For more information, contact the treater and/or the AWPA.

Creosote-treated wood is for exterior/outdoor uses only.

Creosote-treated wood should not be used where it will be in frequent or prolonged contact with skin.

Do not use creosote-treated wood for farrowing or brooding facilities.

Do not use creosote-treated wood when the preservative may become a component of animal feed, such as structures used for storing silage food for cattle.

Do not use creosote-treated wood where there may be direct contact with domestic animals or livestock which may crib (bite) or lick the wood.

Do not use creosote-treated wood for cutting boards, countertops, and construction materials for beehives.

Do not use creosote-treated wood where it may come in direct or indirect contact with public drinking water for human and domestic animals or livestock, except for uses involving incidental contact such as docks and

bridges.

Although generally not recommended, if creosote-treated wood is to be coated or sealed, the wood must be clean and dry before applying the coating material. The only recommended coatings are a water-based pigmented emulsion and alcohol-based shellac products.

Consumer Handling Precautions for Creosote-Treated Wood

Dispose of creosote-treated wood by ordinary trash collection services. Creosote-treated wood should not be burned in open fires or in stoves, fireplaces, or residential boilers. Creosote treated wood may be burned only in commercial or industrial incinerators or boilers in accordance with Federal and State regulations.

Avoid frequent or prolonged inhalation of sawdust from creosote-treated wood. When sawing and machining (includes, but not limited to drilling and adz cutting) the wood, wear a dust mask. Whenever possible these machining operations should be performed outdoors to avoid indoor accumulation of airborne sawdust from the creosote-treated wood. When power-sawing and machining, wear goggles to protect eyes from flying particles.

Avoid frequent or prolonged skin with creosote-treated wood. When handling the treated wood, wear long-sleeved shirts and long pants and use gloves rated as chemical resistant by the manufacturer.

After working with creosote-treated wood, and before eating, drinking and use of tobacco products, wash exposed areas thoroughly.

If oily preservative or sawdust accumulates on clothes, launder before reuse. Wash work clothes separately from other household clothing.

* This Consumer Information Sheet is being distributed with creosote pressure-treated wood as part of the wood treating industry's voluntary consumer awareness program, which EPA approved in 1986. Since that time, EPA has completed a comprehensive reregistration review of creosote, creosote registrants have voluntarily eliminated all non-pressure treatment uses of creosote, and certain American Wood Protection Association standards have changed (for example, the elimination of creosote-treated wood block flooring). This updated Consumer Information Sheet reflects these developments.

K-CIS-001 R01 0211





SAFETY DATA SHEET (SDS): CRUSHED CONCRETE

SECTION I – IDENTIFICATION

PRODUCT IDENTIFIER Crushed Concrete	TRADE NAME Crushed Concrete	OTHER SYNONYMS Recycled Concrete, Crushed Concrete Base Course, Recycled Concrete Pavement, Recycled Concrete Base Course, Reclaimed Concrete Material
RECOMMENDED USE AND RESTRICTION ON USE Used for construction purposes This product is not intended or designed for and should not be used as an abrasive blasting medium or for foundry applications.		
MANUFACTURER/SUPPLIER INFORMATION Luck Stone Corporation P.O. Box 29682 Richmond, Virginia 23242 Phone: 804-784-6300 8 AM to 5 PM Eastern Time Monday to Friday For additional health, safety or regulatory information and other emergency situations, call 804-476-6405		

SECTION II – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION: Category 1A Carcinogen Category 1 Specific Target Organ Toxicity (STOT) following repeated exposures Category 1 Eye Damage Category 1 Skin Corrosive			
SIGNAL WORD: DANGER			
HAZARD STATEMENTS: May cause cancer by inhalation. Causes damage to lungs, kidneys and autoimmune system through prolonged or repeated exposure by inhalation. Causes severe skin burns and serious eye damage.			
PRECAUTIONARY STATEMENTS Do not handle until the safety information presented in this SDS has been read and understood. Do not breathe dusts or mists. Do not eat, drink or smoke while manually handling this product. Wash skin thoroughly after manually handling. If swallowed: Rinse mouth and do not induce vomiting. If on skin (or hair): Rinse skin after manually handling and wash contaminated clothing if there is potential for direct skin contact before reuse. For minor irritation, apply a lanolin-containing cream to skin after washing. If inhaled excessively: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing. If exposed, concerned, unwell or irritation of the eyes, skin, mouth or throat/nasal passage persist: Get medical attention. Wear eye protection and respiratory protection following this SDS, NIOSH guidelines and other applicable regulations. Use protective gloves if manually handling the product. Avoid creating dust when handling, using or storing. Use with adequate ventilation to keep exposure below recommended exposure limits. Dispose of product in accordance with local, regional, national or international regulations. Please refer to Section XI for details of specific health effects of the components.			

SECTION III – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO	% by weight (approx)
Aggregate (limestone, granite, traprock, sand and gravel, etc.) ⁽¹⁾	Mixture	60-95
Hydrated (Portland) Cement	65997-15-1	3-40
Calcium Hydroxide	1305-62-0	15-25
Fly Ash ⁽²⁾	68131-74-8	0-11

(1) Composition of material varies naturally; typically contains quartz (crystalline silica)

(2) May contain trace amounts of heavy metals

SECTION IV – FIRST-AID MEASURES

INHALATION: If excessive inhalation occurs, remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or develops later.

EYES: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Remove contact lenses, if present and easy to do, and continue rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or develops later.

SKIN: Rinse skin with soap and water after manually handling and wash contaminated clothing if there is potential for direct skin contact. Contact a physician if irritation persists or develops later.

INGESTION: If swallowed, rinse mouth and do not induce vomiting. If gastrointestinal discomfort occurs, persists or develops later, get medical attention.

SIGNS AND SYMPTOMS OF EXPOSURE: There are generally no signs or symptoms of exposure to respirable crystalline silica. Often, chronic silicosis has no symptoms. The symptoms of chronic silicosis, if present, are shortness of breath, wheezing, cough and sputum production. The symptoms of acute silicosis which can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as 6 months, are the same as those associated with chronic silicosis; additionally, weight loss and fever may also occur. The symptoms of scleroderma, an autoimmune disease, include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

Direct skin and eye contact with dust may cause irritation by mechanical abrasion. Some components of the product are also known to cause corrosive effects to skin, eyes and mucous membranes. A splash of wet product in the eye can cause irritation and burning sensation, and may induce corneal edema (the victim may see colored rings or halos around lights). Wet product can irritate the skin and may cause alkali burns. Repeated or prolonged contact may cause dermatitis. Individuals may develop an allergic dermatitis following contact with this product. Ingestion of large amounts may cause gastrointestinal irritation and blockage. Inhalation of dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion or corrosive action. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits. Repeated excessive exposure may cause pneumoconiosis, such as silicosis and other respiratory effects.

SECTION V – FIRE-FIGHTING MEASURES**EXTINGUISHING AGENT**

Not flammable; use extinguishing media compatible with surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARD

Contact with powerful oxidizing agents may cause fire and/or explosions (see Section X of this SDS). While individual components are known to react vigorously with water to produce heat, this is not expected from the product.

SPECIAL FIRE FIGHTING PROCEDURES

None known

HAZARDOUS COMBUSTION PRODUCTS

None known

SECTION VI – ACCIDENTAL RELEASE MEASURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Persons involved in cleaning should first follow the precautions defined in Section VII of the SDS. If product gets wet, contain it appropriately. Do not allow it to flow in to public sewers or water systems where it can harden and clog flow. If product is wet, allow material to harden and transfer into containers appropriate for proper disposal. If product is spilled on roads or other surfaces where it may interfere with traffic, it should be removed promptly.

Dry spilled materials, where dust can be generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust and other components that may pose inhalation hazards. Do not dry sweep spilled material. Collect the material using a method that does not produce dust such as a High-Efficiency Particulate Air (HEPA) vacuum or thoroughly wetting down the dust before cleaning up. Wear appropriate personal protective equipment as specified in Section VIII including appropriate respirators during and following clean up or whenever airborne dust is present to ensure worker exposures remain below occupational exposure limits (OELs - Refer to Section VIII).

Place the cleaned-up dust in a covered container appropriate for disposal. Dispose of the cleaned-up product according to federal, state and local regulations.

This product is not subject to the reporting requirements of SARA Title III Section 313, and 40 CFR 372.

SECTION VII – HANDLING AND STORAGE

This product is not intended or designed for and should not be used as an abrasive blasting medium or for foundry applications.

Follow protective controls set forth in Section VIII of this SDS when handling this product. Dust containing respirable crystalline silica and other components that may be corrosive/irritant may be generated during processing, handling and storage of the dry product. Respirable dust may be generated when hardened product is subjected to mechanical forces, such as in demolition work and surface treatment (sanding, grooving, chiseling, etc.). Use good housekeeping procedures to prevent the accumulation of dust in the workplace.

Do not breathe dust. Avoid contact with skin and eyes. Do not store near food or beverages or smoking materials. Do not stand on piles of materials; it may be unstable.

Use adequate ventilation and dust collection equipment and ensure that the dust collection system is adequate to reduce airborne dust levels to below the appropriate OELs. If the airborne dust levels are above the appropriate OELs, use respiratory protection during the establishment of engineering controls. Refer to Section VIII - Exposure Controls/Personal Protection for further information.

In accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, 1928.21), state, and/or local right-to-know laws and regulations, familiarize your employees with this SDS and the information contained herein. Warn your employees, your customers and other third parties (in case of resale or distribution to others) of the potential health risks associated with the use of this product and train them in the appropriate use of personal protective equipment and engineering controls, which will reduce their risks of exposure.

See also ASTM International standard practice E 1132-06, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."

For safe handling and use of this product for Hydraulic Fracturing, please see the OSHA/NIOSH Hazard Alert Worker Exposure to Silica during Hydraulic Fracturing DHHS (NIOSH) Publication No. 2012-166 (2012).

http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION**Airborne OELs for Components of Cement-Treated Base:**

COMPONENT(S) CHEMICAL NAME	MSHA/OSHA PEL	ACGIH TLV-TWA	NIOSH REL
Aggregate	-	-	-
Hydrated (Portland) Cement	(T) 15 mg/m ³ , (R) 5 mg/m ³	(R) 1 mg/m ³	(T) 10 mg/m ³ , (R) 5 mg/m ³
Calcium Hydroxide	(T) 15 mg/m ³ , (R) 5 mg/m ³	5 mg/m ³	5 mg/m ³
Fly Ash	-	-	-
Silicon Dioxide, SiO ₂	(R) 10 mg/m ³ / (% SiO ₂ + 2) [§]	(R) 0.025 mg/m ³ [#]	(R) 0.05 mg/m ³ [#]

§: Crystalline silica is normally measured as respirable dust. The OSHA/MSHA standard also presents a formula for calculation of the PEL based on total dust: 30 mg/m³ / (% SiO₂ + 2). The OSHA/MSHA PEL listed is for dust containing crystalline silica (quartz) and is based on the silica content of the respirable dust sample. The OSHA/MSHA PEL for crystalline silica as tridymite and cristobalite is one-half the PEL for crystalline silica (quartz).

The ACGIH and NIOSH limits are for crystalline silica (quartz), independent of the dust concentration. The ACGIH TLV for crystalline silica as cristobalite is equal to the TLV for crystalline silica as quartz. In 2005, ACGIH withdrew the TLV for crystalline silica as tridymite. Refer to Section X for thermal stability information for crystalline silica (quartz).

(R): Respirable Fraction.

(T): Total Dust.

Airborne OELs for Inert/Nuisance Dust:

Standard	Respirable Dust	Total Dust
MSHA/OSHA PEL (as Inert or Nuisance Dust)	5 mg/m ³	15 mg/m ³
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m ³	*10 mg/m ³
NIOSH REL (Particulates Not Otherwise Regulated)	-	-

Note: The limits for Inert Dust are provided as guidelines. Nuisance dust is limited to particulates not known to cause systemic injury or illness.

* The TLV provided is for inhalable particles not otherwise specified.

ENGINEERING CONTROLS

Ventilation: Use local exhaust, general ventilation or natural ventilation adequate to maintain exposures below appropriate exposure limits.

Other control measures: Respirable dust and crystalline silica levels from dry product should be monitored regularly. Dust and crystalline silica levels in excess of appropriate exposure limits should be reduced by implementing feasible engineering controls, including (but not limited to) dust suppression (wetting), ventilation, process enclosure and enclosed employee work stations.

EYE/FACE PROTECTION

Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated. If irritation persists, get medical attention immediately. There is potential for severe eye irritation if exposed to excessive concentrations of dust for those using contact lenses.

SKIN PROTECTION

Chemical resistant apron. Loose clothing, with the neck closed and sleeves rolled down. Safety shoes should be laced so that no openings are left through which concrete may reach the skin. Use appropriate protective gloves if manually handling the product.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION, CONTD.**RESPIRATORY PROTECTION****Respirator Recommendations:**

For respirable crystalline silica levels that exceed or are likely to exceed appropriate exposure limits, a NIOSH-approved particulate filter respirator must be worn. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements. For additional information contact NIOSH at 1-800-356-4674 or visit website: <http://www.cdc.gov/niosh/npg> (search for crystalline silica). See also ANSI standard Z88.2 (latest revision) "American National Standard for Respiratory Protection," 29 CFR 1910.134 and 1926.103, and 42 CFR 84.

NIOSH recommendations for respiratory protection include:

Up to 0.5 mg/m³:

(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.

Up to 1.25 mg/m³:

(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate (100-series) filter.

(APF = 25) Any supplied-air respirator operated in a continuous-flow mode

Up to 2.5 mg/m³:

(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.

(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter

Up to 25 mg/m³:

(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions (50 mg/m³ for crystalline silica-quartz): A self-contained breathing apparatus (SCBA) that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode or any supplied-air respirator that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus.

Escape from unknown or IDLH conditions: An air-purifying, full-face piece respirator with a high-efficiency particulate (100-series) filter or any appropriate escape-type, self-contained breathing apparatus.

If the workplace airborne crystalline silica concentration is unknown for a given task, conduct air monitoring to determine the appropriate level of respiratory protection to be worn. Consult with a certified industrial hygienist, your insurance risk manager or the OSHA Consultative Services group for detailed information. Ensure appropriate respirators are worn, as needed, during and following the task, including clean up or whenever airborne dust is present, to ensure worker exposures remain below OELs.

GENERAL HYGIENE CONSIDERATIONS

There are no known hazards associated with this material when used as recommended. Following the guidelines in this SDS are recognized as good industrial hygiene practices. Avoid breathing dust. Avoid skin and eye contact. Wash dust-exposed skin with soap and water before eating, drinking, smoking and using toilet facilities. Wash work clothes after each use.

SECTION IX— PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Crushed concrete is a generally a grey, solid mixture.	ODOR AND ODOR THRESHOLD Faint odor
pH AND VISCOSITY Not applicable	MELTING POINT/FREEZING POINT Not applicable
BOILING POINT AND RANGE Not applicable	FLASH POINT AND FLAMMABILITY Not applicable
FLAMMABILITY/EXPLOSIVE LIMITS AND AUTOIGNITION TEMPERATURE Not applicable	EVAPORATION RATE AND DECOMPOSITION TEMPERATURE Not applicable
VAPOR PRESSURE AND VAPOR DENSITY IN AIR Not applicable	SPECIFIC GRAVITY. 1.7-3.0
SOLUBILITY IN WATER Negligible	PARTITION COEFFICIENT: N-OCTANOL/WATER Not applicable

SECTION X – STABILITY AND REACTIVITY

STABILITY Stable under normal temperatures and pressures	CONDITIONS TO AVOID Contact with incompatible materials (see below).
THERMAL STABILITY If crystalline silica (quartz) is heated to more than 870°C (1598°F), it can change to a form of crystalline silica known as tridymite, and if crystalline silica (quartz) is heated to more than 1470°C (2678°F), it can change to a form of crystalline silica known as cristobalite.	
INCOMPATIBILITY (Materials to avoid) Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Some components of crushed concrete may react vigorously with water. Wet product is alkaline and incompatible with acids, ammonium salts and aluminum metal, and the reaction liberates hydrogen gas.	
HAZARDOUS DECOMPOSITION PRODUCTS Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.	
HAZARDOUS POLYMERIZATION Not known to polymerize	

SECTION XI – TOXICOLOGICAL INFORMATION

Health Effects: The information below represents an overview of health effects caused by overexposure to one or more components in crushed concrete.			
Primary routes(s) of exposure:	■ Inhalation	■ Skin	■ Ingestion
EYE CONTACT: Direct contact with dust may cause irritation by mechanical abrasion or corrosive action. Conjunctivitis may occur.			
SKIN CONTACT: Direct contact may cause dry skin, irritation and dermatitis. Skin affected by dermatitis may include symptoms such as redness, itching, rash, scaling and cracking.			
SKIN ABSORPTION: Not expected to be a significant route of exposure.			
INGESTION: Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury. Ingestion of large amounts may cause gastrointestinal irritation and blockage.			
INHALATION: Dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion or corrosive action. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits.			

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.**MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE**

Inhaling respirable dust and/or crystalline silica may aggravate existing respiratory system disease(s) (e.g., bronchitis, emphysema, chronic obstructive pulmonary disease) and/or dysfunctions. Exposure to dust may aggravate existing skin and/or eye conditions. Smoking and obstructive/restrictive lung diseases may also exacerbate the effects of excessive exposure to this product.

This product is a mixture of components. The composition percentages are listed in Section III. Toxicological information for each component is listed below:

Chronic exposure to product, if it gets wet, has caused chronic dermatitis, the symptoms of which may include erythema (reddening), skin irritation, and eczematous rashes. Drying, thickening, and cracking of the skin and nails may also occur. Irritated or broken skin is more likely to develop further complications such as ulcers and infection, and may increase the chance of absorbing toxic materials into the body through the skin.

Individuals who become allergically sensitized to hexavalent chromates may experience an allergic reaction upon subsequent contact with those compounds (delayed Type IV hypersensitivity reaction).

The chronic toxicity effects described above have been associated with exposure to product, if it gets wet. Once the product has set and hardened, these effects are extremely unlikely to occur; hardened product poses no known health hazard. If hardened product is subjected to mechanical force (such as in demolition work) which generate dust particles, exposure to respirable crystalline silica dust is possible. Health effects of crystalline silica is described in this section.

Portland Cement:

Exposure Routes: inhalation, ingestion, skin and/or eye contact

Target Organs: Eyes, skin, respiratory system.

Acute Effect: Exposure to dry portland cement may cause drying of the skin and mild irritation, or more significant effects from the aggravation of other conditions. Liquid portland cement is caustic (pH > 12) and dermal exposure may cause more severe skin effects, including thickening, cracking or fissuring of the skin. Eye exposures to portland cement may cause immediate or delayed irritation or inflammation of the cornea. Eye contact with larger amounts of dry powder or splashes of liquid portland cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Inhalation of dry portland cement may cause irritation to the moist mucous membranes of the nose, throat and upper respiratory system, or may cause or aggravate certain lung diseases or conditions.

Chronic Effect: Prolonged exposure can cause severe skin damage in the form of chemical (caustic) burns. Portland Cement is not listed as carcinogen on the NTP, IARC or OSHA list of carcinogens, however Portland Cement contains trace amounts of hexavalent chromium [Cr(VI)] and certain chromium compounds which are listed on the NTP and IARC lists of carcinogens. The total amounts of chromium and chromium compounds in Portland Cement are typically less than 0.003% and hexavalent chromium less than 0.001%..

Note: Some individuals who are exposed to portland cement may exhibit an allergic response, which can result in symptoms ranging from mild rashes to severe skin ulcers. Cement dermatitis may be irritant contact dermatitis induced by the alkaline, abrasive, and hygroscopic (water-absorbing) properties of portland cement, or it may be allergic contact dermatitis elicited by an immunological reaction to Cr(VI), or it may be a combination of the two.

Fly Ash

Fly Ash is a mixture of components and the composition is highly variable depending on the source. The primary components of flyash are silicon oxide and calcium oxide. Other typical ingredients in smaller percentage by weight include oxides of metals such as aluminum, iron and magnesium, and trace amounts of heavy metals. The possible toxic effects of the metal oxides are provided in this section.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

Silicon Dioxide: It is comprised of amorphous and crystalline forms of silica.

Exposure route: Eyes, respiratory system.

Target organs: Eyes, skin, respiratory system.

ACGIH, MSHA, and OSHA have determined that adverse effects are not likely to occur in the workplace provided exposure levels do not exceed the appropriate exposure limits. Lower exposure limits may be appropriate for some individuals including persons with pre-existing medical conditions as described under medical conditions aggravated by exposure.

A. SILICOSIS

The major concern is silicosis (lung disease), caused by the inhalation and retention of respirable crystalline silica dust. Silicosis leads to conditions such as lung fibrosis and reduced pulmonary function. The form and severity in which silicosis manifests itself, depends in part on the type and extent of exposure to silica dusts: chronic, accelerated and acute forms are recognized. In later stages the critical condition may become disabling and potentially fatal. Restrictive and/or obstructive changes in lung function may occur due to exposure. A risk associated with silicosis is development of pulmonary tuberculosis (silico-tuberculosis). Respiratory insufficiencies due to massive fibrosis and reduced pulmonary function, possibly with accompanying heart failure, are other potential causes of death due to silicosis.

Chronic or Ordinary Silicosis is the most common form of silicosis and can occur after many years of exposure to levels above the OELs for airborne respirable crystalline silica dust. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. Symptoms of silicosis may include (but are not limited to): Shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; heart enlargement and/or failure. It is further defined as either simple or complicated silicosis.

Simple Silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF).

Complicated Silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease (cor pulmonale) secondary to the lung disease.

Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the progression is more rapid.

Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is a rapidly progressive, incurable lung disease and is typically fatal.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that there is "*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the form of quartz or cristobalite", there is "*sufficient evidence* in experimental animals for the carcinogenicity of quartz dust" and that there is "*limited evidence* in experimental animals for the carcinogenicity of tridymite dust and cristobalite dust." The overall IARC evaluation was that "crystalline silica inhaled in the form of quartz or cristobalite dust is *carcinogenic to humans (Group 1)*." The IARC evaluation noted that not all industrial circumstances studied evidenced carcinogenicity. The monograph also stated that "Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, "Silica Dust, Crystalline, in the Form of Quartz or Cristobalite" (2012).

NTP - In its Eleventh Annual Report on Carcinogens, concluded that respirable crystalline silica is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

OSHA - Crystalline silica is not on the OSHA carcinogen list.

CALIFORNIA PROPOSITION 65 - Crystalline silica in October 1996 was listed on the Safe Drinking Water and Toxic Enforcement ACT of 1986 as a chemical known to the state to cause cancer or reproductive toxicity.

There have been many articles published on the carcinogenicity of crystalline silica, which the reader should consult for additional information; the following are examples of recently published articles: (1) "Dose-Response Meta-Analysis of Silica and Lung Cancer", *Cancer Causes Control*, (20):925-33 (2009); (2) "Occupational Silica Exposure and Lung Cancer Risk: A Review of Epidemiological Studies 1996-2005", *Ann Oncol*, (17) 1039-50 (2006); (3) "Lung Cancer Among Industrial Sand Workers Exposed to Crystalline Silica", *Am J Epidemiol*, (153) 695-703 (2001); (4) "Crystalline Silica and The Risk of Lung Cancer in The Potteries", *Occup Environ Med*, (55) 779-785 (1998); (5) "Is Silicosis Required for Silica-Associated Lung Cancer?", *American Journal of Industrial Medicine*, (37) 252- 259 (2000); (6) "Silica, Silicosis, and Lung Cancer: A Risk Assessment", *American Journal of Industrial Medicine*, (38) 8-18 (2000); (7) "Silica, Silicosis, and Lung Cancer: A Response to a Recent Working Group Report", *Journal of Occupational and Environmental Medicine*, (42) 704-720 (2000).

C. AUTOIMMUNE DISEASES

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. For a review of the subject, the following may be consulted: (1) "Antinuclear Antibody and Rheumatoid Factor in Silica-Exposed Workers", *Arch Hig Rada Toksikol*, (60) 185-90 (2009); (2) "Occupational Exposure to Crystalline Silica and Autoimmune Disease", *Environmental Health Perspectives*, (107) Supplement 5, 793-802 (1999); (3) "Occupational Scleroderma", *Current Opinion in Rheumatology*, (11) 490-494 (1999); (4) "Connective Tissue Disease and Silicosis", *Am J Ind Med*, (35), 375-381 (1999).

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: (1) "Tuberculosis and Silicosis: Epidemiology, Diagnosis and Chemoprophylaxis", *J Bras Pneumol*, (34) 959-66 (2008); (2) *Occupational Lung Disorders*, Third Edition, Chapter 12, entitled "Silicosis and Related Diseases", Parkes, W. Raymond (1994); (3) "Risk of Pulmonary Tuberculosis Relative to Silicosis and Exposure to Silica Dust in South African Gold Miners," *Occup Environ Med*, (55) 496-502 (1998); (4) "Occupational Risk Factors for Developing Tuberculosis", *Am J Ind Med*, (30) 148-154 (1996).

E. KIDNEY DISEASE

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis is associated with the increased incidence of kidney diseases, including end stage renal disease. For additional information on the subject, the following may be consulted: (1) "Mortality from Lung and Kidney Disease in a Cohort of North American Industrial Sand Workers: An Update", *Ann Occup Hyg*, (49) 367-73 (2005); (2) "Kidney Disease and Silicosis", *Nephron*, (85) 14-19 (2000); (3) "End Stage Renal Disease Among Ceramic Workers Exposed to Silica", *Occup Environ Med*, (56) 559-561 (1999); (4) "Kidney Disease and Arthritis in a Cohort Study of Workers Exposed to Silica", *Epidemiology*, (12) 405-412 (2001).

F. NON-MALIGNANT RESPIRATORY DISEASES

NIOSH has cited the results of studies that report an association between dusts found in various mining operations and non-malignant respiratory disease, particularly among smokers, including bronchitis, emphysema, and small airways disease. *NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica*, published in April 2002, available from NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226, or at <http://www.cdc.gov/niosh/02-129A.html>.

Respirable dust containing newly broken particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken pieces of silica.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.**Aluminum Oxide:**

Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Inhalation or ingestion of high concentrations of this substance may cause gastrointestinal and/or upper respiratory tract irritation. Eye and skin irritant.

Chronic effect/carcinogenicity: Aluminum oxide is not classifiable as a human carcinogen. On occasion workers chronically exposed to aluminum-containing dusts or fumes have developed severe pulmonary reactions including fibrosis, emphysema and pneumothorax. Long-term exposure may have effects on the central nervous system.

Iron Oxide: (Ferrous and Ferric Oxides)

Exposure route: Inhalation, ingestion, skin

Target organs: Respiratory system, skin, eyes, neurological system

Acute effect: Major findings: stupor, shock, acidosis, hematemesis, bloody diarrhea or coma. Minor findings: vomiting, diarrhea, mild lethargy. Benign pneumoconiosis with X-ray shadows indistinguishable from fibrotic pneumoconiosis. Experimental work in animals exposed by intratracheal injection or by inhalation to iron oxide mixed with less than 5% silica has shown no evidence of fibrosis produced in lung tissue.

Chronic effect/carcinogenicity: Irritability, nausea or vomiting, and normocytic anemia. When exposed to levels greater than 50 to 100 milligram per day, it can result in pathological deposition of iron in the body tissues causing fibrosis of the pancreas, diabetes mellitus, and liver cirrhosis. Workers exposed to iron oxide fume and silica may develop a "mixed dust pneumoconiosis." Not classifiable as human carcinogen.

Calcium Oxide:

Exposure route: Inhalation, ingestion, skin/eye contact.

Target organs: Eyes, skin, respiratory system.

Acute effect: Direct contact with tissues, can result in burns and severe irritation because of its high reactivity and alkalinity. Major complaints of workers exposed to lime consist of irritation of the skin and eyes, although inflammation of the respiratory passages, ulceration and perforation of the nasal septum, and even pneumonia has been attributed to inhalation of the dust.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Magnesium Oxide:

Exposure route: Inhalation, eye/skin contact.

Target organs: Eyes, respiratory system.

Acute effect: Magnesium oxide dust caused slight irritation of the eyes and nose, conjunctivitis, inflammation of the mucous membrane, and coughing up discolored sputum after industrial exposures amongst workers exposed to an unspecified concentration of MgO.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.**Calcium Hydroxide:**

Exposure route: Inhalation, ingestion, skin/eye contact.

Target organs: Eyes, skin, gastrointestinal system, respiratory system.

Acute effect: It is alkaline in nature, and if ingested, can react with fats and cause deep penetration into mucosal tissue. It can cause inflammation of the gastrointestinal tissue, tissue necrosis and abnormal narrowing of gastrointestinal passages. Direct contact with tissues, can result in burns and severe irritation. Eye contact can produce severe conjunctival irritation and swelling, corneal epithelial defects, permanent visual loss and in severe cases, perforation. Mil exposure by inhalation may cause cough and bronchospasm and severe inhalation may cause upper airway edema and burns, airway disruption and rarely acute lung injury.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Aggregate:

Exposure Route: Eyes, skin, inhalation, ingestion.

Target Organs: Eyes, skin, respiratory system, gastrointestinal system

Acute Effect: Direct eye and skin contact with dust may cause irritation by mechanical abrasion or burning sensations, pain or blisters from corrosive/irritant effects. Dusts may irritate the nose, throat, gastrointestinal region and respiratory tract by mechanical abrasion or corrosive/irritant action. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits. Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury. Ingestion of large amounts may cause gastrointestinal irritation and blockage. Other conditions related to acute exposure to some of the metal oxides in limestone include stupor, shock, acidosis, abdominal pain, hematemesis, bloody diarrhea, coma, vomiting, diarrhea, mild lethargy, benign pneumoconiosis, sore throat, burning sensation, inflammation of the respiratory passages, ulceration, perforation of the nasal septum, pneumonia and conjunctivitis.

Chronic Effect: Repeated exposure to respirable dust in excess of appropriate exposure limits has caused silicosis, a progressive pneumoconiosis (lung disease) and lung cancer. Restrictive and/or obstructive lung function changes may result from chronic exposure. Chronic tobacco smoking may further increase the risk of developing chronic lung problems. On occasion workers chronically exposed to the metal oxides in limestone have developed severe pulmonary reactions, effects on the central nervous system, irritability, nausea or vomiting, normocytic anemia, fibrosis of the pancreas, diabetes mellitus, liver cirrhosis, and “mixed dust pneumoconiosis.”

Acute Toxicity Estimates for Crushed Concrete – Not Available

SECTION XII – ECOLOGICAL INFORMATION

No data available for this product.

SECTION XIII – DISPOSAL CONSIDERATIONS**WASTE DISPOSAL METHOD**

Collect and reuse clean materials. Landfill waste materials at approved sites. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

The above information applies to Luck Stone Corporation product only as sold. The product may be contaminated during use and it is the responsibility of the user to assess the appropriate disposal method in that situation.

SECTION XIV – TRANSPORT INFORMATION**DOT HAZARD CLASSIFICATION**

None

PLACARD REQUIRED

None

LABEL REQUIRED

Label as required by the OSHA Hazard Communication standard {29 CFR 1910.1200(f)}, and applicable state and local regulations.

SECTION XV – REGULATORY INFORMATION

OSHA: Crystalline Silica is not listed as a carcinogen.

Crushed concrete may contain trace amounts of hexavalent chromium [Cr(VI)] and certain chromium compounds which are listed in the NTP and IARC lists of carcinogens

SARA Title III: Section 311 and 312: Immediate health hazard and delayed health hazard.

TSCA: Silica, Limestone, Calcium Hydroxide and Portland Cement appear on the EPA TSCA inventory under the CAS No. 14808-60-7/7631-86-9, 1317-65-3, 1305-62-0 and 65997-15-1, respectively.

RCRA: The product is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: The product is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR §302.4

EPCRA (Emergency Planning and Community Right to Know Act): The product is not an extremely hazardous substance under regulations of the Emergency Planning and Community Right to Know Act, 40 CFR Part 355, Appendices A and B and is not a toxic chemical subject to the requirements of Section 313.

Clean Air Act: Crystalline silica (quartz) mined and processed by Luck Stone Corporation was not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3). (The FDA standard primarily applies to products containing silica used in the coatings of food contact surfaces).

California Proposition 65: Respirable crystalline silica is classified as a substance known to the state of California to be a carcinogen. Cr(VI) is classified as a substance known to the state of California to be a carcinogen and cause reproductive toxicity.

SECTION XVI – OTHER INFORMATION**DEFINITIONS OF ACRONYMS/ABBREVIATIONS**

ACGIH: American Conference of Governmental Industrial Hygienists
 ANSI: American National Standards Institute
 APF: Assigned Protection Factor
 California REL: California Inhalation Reference Exposure Limit
 CAS: Chemical Abstracts Service
 CERCLA: Comprehensive Environmental Response, Compensation and Liability Act
 CFR: US Code of Federal Regulations
 DHHS: Department of Health and Human Services
 EPA: Environmental Protection Agency
 EPCRA: Emergency Planning and Community Right to Know Act
 FDA: Food and Drug Administration
 GHS: Globally Harmonized System
 HEPA: High-Efficiency Particulate Air
 IARC: International Agency for Research on Cancer
 IDLH: Immediately Dangerous to Life and Health
 MSHA: Mine Safety and Health Administration
 NIOSH: National Institute for Occupational Safety and Health, US Department of Health and Human Services
 NIOSH REL: NIOSH Recommended Exposure Limit
 NTP: National Toxicology Program
 OEL: Occupational Exposure Limit
 OSHA: Occupational Safety and Health Administration, US Department of Labor
 PEL: Permissible Exposure Limit
 PMF: Progressive Massive Fibrosis
 RCRA: Resource Conservation and Recovery Act
 SARA Title III: Title III of the Superfund Amendments and Reauthorization Act, 1986
 SDS: Safety Data Sheet
 STOT: Specific Target Organ Toxicity
 TLV: Threshold Limit Value
 TSCA: Toxic Substance Control Act
 TWA: Time-Weighted Average

User's Responsibility: The OSHA Hazard Communication Standard 29 CFR 1910.1200 requires that this SDS be made available to your employees who handle or may be exposed to this product. Educate and train your employees regarding applicable precautions. Instruct your employees to handle this product properly.

Disclaimer: The information contained in this document applies to this specific material as supplied and Luck Stone Corporation believes that the information contained in this SDS is accurate. The suggested precautions and recommendations are based on recognized good work practices and experience as of the date of publication. They are not necessarily all-inclusive or fully adequate in every circumstance as not all use circumstances can be anticipated. It may not be valid for this material if it is used in combination with other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for one's own particular use. Since the actual use of the product described herein is beyond our control, Luck Stone Corporation, assumes no liability arising out of the use of the product by others. Appropriate warnings and safe handling procedures should be provided to handlers and users. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulation, rules or insurance requirement. However, product must not be used in a manner which could result in harm.

An electronic version of this SDS is available at www.luckstone.com. More information on the effects of crystalline silica exposure may be obtained from OSHA (phone number: 1-800-321-OSHA; website: <http://www.osha.gov>) or from NIOSH (phone number: 1-800-35-NIOSH; website: <http://www.cdc.gov/niosh>).

DATE OF PREPARATION 6/2015

REPLACES 10/2011



SAFETY DATA SHEET

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Product Name: Crystalline silica in the form of Quartz (Including but not limited to): Albany Sand, All Purpose Sand, Asphalt Sand, Bank Run Gravel, Bar Sand, Baseball Sand, Brick Sands, Concrete Sand, Filter Sands, Foundry Sands, Golf Sand, Headlap Sand, Ice Control Sand, K-4 Septic Sand, Mason Sand, McConn Sand, Mortar Sand, NJ DOT I-1 through I-13, Oil Sand, Play Sand, Port Sand, Sandblast Sands, Screened Fill, Sewage Sand, Washed Gravels.

Synonyms/Common Names: Sand, Silica Sand, Quartz, Crystalline Silica, Silicon Dioxide, Flint, Gravel.

Relevant Identified Uses of the Substance or Mixture and Uses Advised Against:

Product Use: Various commercial and industrial uses

Plant Locations:

Port Elizabeth Plant, Port Elizabeth, NJ; Dorchester Plant, Dorchester, NJ

Manufacturer:

WHIBCO OF NEW JERSEY, INC.
87 E. Commerce St.
Bridgeton, New Jersey 08302

Emergency Telephone Number:

(856) 455-9200 or (856) 825-5200
1-800-631-8010

Date Prepared:

May 12, 2014

SECTION 2 - HAZARD IDENTIFICATION

GHS/ Hazcom 2012 Classification:

Physical:	Health:	Environmental
Not Hazardous	Carcinogen Category 1A Specific Target Organ Toxicity (Repeated Exposure) Category 1	Not Hazardous

GHS/Hazcom 2012 Label:



DANGER

Statements of Hazard

May cause cancer by inhalation.

Causes damage to lungs through prolonged or repeated exposure by inhalation

Response:

If exposed or concerned: Get medical advice.

Storage:

Store locked up.

Disposal:

Dispose of contents/containers in accordance with local

Prevention

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Do not breathe dust.

Do not eat, drink or smoke when using this product.

Wear protective gloves and safety glasses or goggles.

In case of inadequate ventilation wear respiratory protection.

regulation

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

CAS#	Component	Percentage
14808-60-7	Crystalline Silica (Quartz)	75 – 99.7%

SECTION 4 - FIRST AID MEASURES

Gross Inhalation: Remove victim to fresh air. If breathing has stopped, perform artificial respiration. If breathing is difficult have qualified personnel administer oxygen. Get prompt medical attention.

Skin Contact: No first aid should be needed since dermal contact with this product does not affect the skin. Wash exposed skin with soap and water before breaks and at the end of the shift.

Eye Contact: Flush the eyes immediately with large amounts of running water, lifting the upper and lower lids occasionally. If irritation persists or for imbedded foreign body, get immediate medical attention.

Ingestion: If large amounts are swallowed, get immediate medical attention.

Most Important Symptoms and Effects, Both Acute and Delayed: May cause eye irritation with redness and tearing. Exposure to dust may cause mucous membrane and respiratory irritation, cough, sore throat, nasal congestion, sneezing and shortness of breath. However, there may be no immediate signs or symptoms of exposure to hazardous concentrations of respirable crystalline silica (quartz).

Indication of immediate medical attention and Special Treatment Needed: None required.

SECTION 5 - FIRE FIGHTING MEASURES

Suitable Extinguishing Media: This product will not burn but is compatible with all extinguishing media. Use any media that is appropriate for the surrounding fire.

Specific Hazards Arising from the Chemical:

Unusual Fire and Explosion Hazards: Not flammable or combustible. Dry powders may accumulate static charge in handling which can be a source of ignition for flammable atmospheres.

Hazardous Combustion Products: None.

Special Protective Equipment and Precautions for Fire-Fighters: None required with respect to this product. Firefighters should always wear self-contained breathing apparatus for fires indoors or in confined areas.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Wear appropriate protective equipment.

Environmental Precautions: Report spills and releases as required to appropriate authorities.

Methods and Material for Containment/Cleanup: If uncontaminated, collect using dustless method (HEPA vacuum or wet method) and place in appropriate container for use. If contaminated: a) use appropriate method for the nature of contamination, and b) consider possible toxic or fire hazards associated with the contaminating substances. Collect for appropriate disposal.

SECTION 7 - HANDLING AND STORAGE

Precautions for Safe Handling: Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Silica may be in the air without a visible dust cloud. Use normal precautions against bag breakage or spills of bulk material. Avoid creation of respirable dust. Do not use as a dry abrasive blasting agent. Use good housekeeping in storage and use areas to prevent accumulation of dust in work area.

OSHA has proposed a standard on respirable crystalline silica that includes requirements for controlling worker exposure, medical surveillance and worker training. Refer to the OSHA website (www.osha.gov) for more information.

To reduce the risk of developing silicosis, lung cancer and other adverse health effects, the ACGIH recommends that the industrial hygienist use every means available to keep exposures below the recommended TLV. NIOSH recommends reducing airborne exposure levels as low as possible below NIOSH's recommended exposure limit, substituting less hazardous materials when feasible, using appropriate respiratory protection when source controls cannot keep exposures below the recommended limit and making medical examinations available to exposed workers.

Use adequate ventilation and dust collection. To minimize exposure, wear a respirator approved for silica dust when using, handling, storing or disposing of this product or bag. Refer to the most recent government and local regulations when selecting a respirator. Maintain, clean and fit test respirators in accordance with the most recent government and local regulations. Maintain and test ventilation and dust collection equipment. Launder clothing that has become dusty. Empty containers (bags, bulk containers, storage tanks, etc.) retain silica residue and must be handled in accordance with the provisions of this Safety Data Sheet. WARN and TRAIN employees in accordance with state and federal regulations.

WARN YOUR EMPLOYEES (AND YOUR CUSTOMERS AND USERS IN CASE OF RESALE) BY POSTING, AND OTHER MEANS, OF THE HAZARDS AND OSHA AND ANY OTHER APPLICABLE REGULATORY PRECAUTIONS TO BE USED. PROVIDE TRAINING FOR YOUR EMPLOYEES ABOUT OSHA PRECAUTIONS.

Dust can accumulate electrostatic charges due to friction from transfer and mixing operations and cause an electrical spark (ignition source) which can ignite flammable liquids and atmospheres. Provide adequate precautions when adding this product to flammable and combustible mixtures like paints and coating, such as electrical grounding and bonding, inert atmosphere or non-sparking tools. However, bonding and grounds may not eliminate the hazard for static accumulation.

See also American Society for Testing and Materials (ASTM) Standard Practice E1132-99a, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica".

Additional information on silica hazards and precautionary measures can be found on the following websites:

NIOSH Joint campaign on Silicosis Prevention: <http://www.cdc.gov/niosh/topics/silica/>

OSHA Crystalline Silica: <https://www.osha.gov/dsg/topics/silicacrystalline/index.html>

MSHA Silicosis Prevention: <http://www.msha.gov/S&HINFO/SILICO/SILICO.HTM>

NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica: <http://www.cdc.gov/niosh/docs/2002-129/pdfs/2002-129.pdf>

Conditions for Safe Storage, Including any Incompatibilities: Store in a dry location.

SECTION 8 - EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines:

Definitions:

NIOSH means National Institute for Occupational Safety and Health.

REL means the NIOSH Recommended Exposure Limit.

TLV means American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value.

TWA means time-weighted average.

OSHA PEL and MSHA Exposure Limit for Crystalline Silica, Quartz $\frac{10 \text{ mg/m}^3}{\% \text{ Silica} + 2}$
(Respirable measured as an 8-hour TWA)

OSHA has proposed a new PEL for all covered industry sectors of 50 $\mu\text{g}/\text{m}^3$ as an eight-hour time-weighted average for all forms of respirable crystalline silica. See www.OSHA.gov for more information

TLV- 0.025 mg/m^3 8-hour TWA (respirable fraction)

In 2006 the ACGIH lowered the TLV for Silica, Crystalline: α -Quartz and Cristobalite to 0.025 mg/m^3 stating in the *Documentation of the TLV* "Because the time between exposure and signs of fibrosis is characteristically very long, as much as 30 to 40 years, the margin of safety for exposure to crystalline silica at the proposed TLV-TWA is not known precisely. Given the observed association between silicosis and lung cancer, it is recommended that air concentrations be maintained as far below the proposed TLV as prudent practices permit. The recommended TLV-TWA of 0.025 mg/m^3 , respirable particulate mass, is intended to prevent pulmonary fibrosis that may be a risk factor for lung cancer. An A2, Suspected Human Carcinogen, notation is based on the demonstrated association between lung cancer and the presence of silicosis." The documentation further states "A lack of toxicological and industrial hygiene data does not permit the recommendation of a TLV-STEL. However, it should be noted that high exposures of short duration to freshly fragmented crystalline particles do produce an acute and rapidly progressive form of silicosis. The reader is encouraged to review the section on *Excursion Limits* in the "Introduction to the Chemical Substances" of the current TLVs® and BEIs® book for guidance and control of excursions above the TLV-TWA, even when the 8-hour TWA is within the recommended limits"

NIOSH has issued its REL of 50 micrograms respirable free silica per cubic meter of air (0.05 mg/m^3) as determined by a full shift sample up to 10-hour working day, 40 hours per week. NIOSH has recommended that OSHA and MSHA adopt the NIOSH REL as the OSHA PEL and the MSHA Exposure Limit. The 1974 NIOSH Criteria for a Recommended Standard for Occupational Exposure to Crystalline Silica should be consulted for more detailed information. Additionally, NIOSH, In a publication entitled NIOSH Hazard Review Health Effects of Occupational Exposure to Respirable Silica (April 2002), NIOSH stated "...that workers have a significant risk of developing chronic silicosis when they are exposed to respirable crystalline silica over a working lifetime at the current Occupational Safety and Health Administration (OSHA) permissible exposure limit (PEL), the Mine Safety and Health Administration (MSHA) PEL, or the National Institute for Occupational Safety and Health (NIOSH) recommended exposure limit (REL). ...Current sampling and analytical methods used to evaluate occupational exposure to respirable crystalline silica do not meet the accuracy criterion needed to quantify exposures at concentrations below the NIOSH REL of 0.05 mg/m^3 as a time-weighted average (TWA) for up to a 10-hr workday during a 40-hr workweek. Until improved sampling and analytical methods are developed for respirable crystalline silica, NIOSH will continue to recommend an exposure limit of 0.05 mg/m^3 to reduce the risk of developing silicosis, lung cancer, and other adverse health effects. NIOSH also recommends minimizing the risk of illness that remains for workers exposed at the REL by substituting less hazardous materials for crystalline silica when feasible, by using appropriate respiratory protection when source controls cannot keep exposures below the NIOSH REL, and by making medical examinations available to exposed workers."

Crystalline silica exists in several forms, the most common of which are quartz (i.e. this product), tridymite and cristobalite, with quartz being the most common form found in nature. If quartz is heated to more than 870°C, it can change form to tridymite and if quartz is heated to more than 1450°C, it can change form to cristobalite.

Appropriate Engineering Controls: Use local exhaust as required to maintain exposures as far as possible below applicable occupational exposure limits. See also ACGIH "Industrial Ventilation - A Manual for Recommended Practice" (current edition). Control of exposure to dust must be accomplished as far as feasible by accepted engineering control measures (for example, enclosure or confinement of the operation, general or local exhaust ventilation and substitution of less toxic materials).

Personal Protective Equipment:

Respiratory Protection: When effective engineering controls are not feasible, or while they are being implemented, appropriate respiratory protection must be used. Use appropriate respiratory protection for respirable particulates based on consideration of airborne workplace concentrations and duration of exposure arising from intended end use. Refer to the most recent government and local standards.

Gloves: Protective gloves recommended.

Eye Protection: Safety glasses or goggles recommended.

Other Protective Equipment/Clothing: As appropriate for the work environment. Dusty clothing should be laundered before reuse.

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Form:	Solid	Appearance:	White or tan sand or gravel; granular.
Viscosity:	Not applicable	Odor:	None
pH:	Not applicable	Odor Threshold:	Not applicable
Boiling Point/Range:	4046°F / 2230°C	Vapor Density:	Not applicable
Melting point/freezing point:	2930°F / 1610°C	Evaporation Rate:	Not applicable
Flammability (solid, gas):	Fully oxidized, will not burn	Partition coefficient (n-octanol/water):	Not applicable
Decomposition Temperature:	Not applicable	Vapor Pressure:	Not applicable
Flash Point:	Not applicable	Relative Density:	2.65
Lower Explosion Limit:	Not applicable	Solubilities:	Insoluble in water
Upper Explosion Limit:	Not applicable	Autoignition Temperature:	Will not burn

SECTION 10 - STABILITY AND REACTIVITY

Reactivity: This product is not reactive under normal conditions of storage and use.

Chemical Stability: This product is stable at normal temperatures.

Possibility of Hazardous Reactions: None known

Conditions to Avoid: None known.

Incompatible Materials: Powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, etc.

Hazardous Decomposition Products: Silica will dissolve in hydrofluoric acid producing a corrosive gas, silicon tetrafluoride.

SECTION 11 – TOXICOLOGICAL INFORMATION**Information on Toxicological Effects****Potential Health Effects:**

Inhalation: Breathing silica dust may not cause noticeable injury or illness even though permanent lung damage may be occurring. Inhalation of dust may have serious chronic health effects (see below Repeat Dose Toxicity.)

Skin Contact: No adverse effects expected.

Eye Contact: Contact may cause mechanical irritation and possible injury.

Ingestion: No adverse effects expected for normal, incidental ingestion.

Chronic Health Effects: See Repeat Dose Toxicity below with respect to silicosis, cancer status and other data with possible relevance to human health.

Signs and Symptoms of Exposure: Exposure to dust may cause mucous membrane and respiratory irritation, cough, sore throat, nasal congestion, sneezing and shortness of breath. However, there may be no immediate signs or symptoms of exposure to hazardous concentrations of respirable crystalline silica (quartz). See Repeat Dose Toxicity below for symptoms of silicosis. The absence of symptoms is not necessarily indicative of safe conditions.

Acute Toxicity Values: Silica: LD50 oral rat >22,500 mg/kg.

Skin Sensitization: Not a skin sensitizer in animals or humans.

Repeated Dose Toxicity:

Silicosis: Excessive inhalation of respirable crystalline silica dust may cause a progressive, disabling and sometimes fatal lung disease called silicosis. Symptoms include cough, shortness of breath, wheezing, non-specific chest illness and reduced pulmonary function. This disease is exacerbated by smoking. Individuals with silicosis are predisposed to develop mycobacterial infections (tuberculous and non-tuberculous) and fungal infections. Inhalation of air with a very high concentration of respirable silica dust can cause the most serious forms of silicosis in a matter of months or a few years. Some epidemiologic studies have concluded that there is significant risk of developing silicosis even at airborne exposure levels that are equal to the recommended NIOSH REL, and ACGIH TLV.

Other Data with Possible Relevance to Human Health:

There is some evidence that breathing respirable crystalline silica or the disease silicosis is associated with an increased incidence of significant disease endpoints such as scleroderma (an immune system disorder manifested by fibrosis of the lungs, skin and other internal organs) rheumatoid arthritis, systemic lupus, erythematosus, sarcoidosis, chronic bronchitis, chronic obstructive pulmonary disease (COPD), emphysema, chronic kidney disease and end-stage renal disease.

For further information consult "Adverse Effects of Crystalline Silica Exposure" published by the American Thoracic Society Medical Section of the American Lung Association, American Journal of Respiratory and Critical Care Medicine, Volume 155, pages 761-768, 1997, and see also NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002 (see Section 7 for NIOSH Hazard Review Website).

Carcinogenicity: The International Agency for Research on Cancer has determined that crystalline silica is carcinogenic to humans (Group 1 - carcinogenic to humans). Refer to IARC Monograph 100C, A Review of Human Carcinogens: Arsenic, Fibres, and Dusts (published in 2011) in conjunction with the use of these materials. The National Toxicology Program classifies respirable crystalline silica as "known to be a human carcinogen". Refer to the Twelfth Report on Carcinogens (2011). The American Conference of Governmental Industrial Hygienists (ACGIH) classifies crystalline silica, quartz, as a suspected human carcinogen (A2).

Developmental / Reproductive Toxicity: No specific data is available, however, there is no evidence that silica exposure has any effect on reproduction.

Genetic Toxicity: No specific data is available, however, there is no evidence that silica is a germ cell mutagen.

SECTION 12 – ECOLOGICAL INFORMATION

Toxicity: Practically non-toxic to aquatic organisms. Silica: LC50 carp >10,000 mg/L/72 hr.

Persistence and Degradability: Silica is not degradable.

Bioaccumulative Potential: Not expected to bioaccumulate.

Mobility in Soil: Not applicable.

Results of PBT and vPvB Assessment: None required.

Other Adverse Effects: None known

SECTION 13 – DISPOSAL CONSIDERATIONS

Waste Treatment Methods:

If uncontaminated, dispose as an inert, non-metallic mineral. If contaminated, dispose in accordance with all applicable local, state/provincial and national/ federal regulations in light of the contamination present. Local regulations may be more stringent than regional and national requirements. It is the responsibility of the waste generator to determine the toxicity and physical characteristics of the material to determine the proper waste identification and disposal in compliance with applicable regulations.

SECTION 14 – TRANSPORT INFORMATION

Crystalline silica (quartz) is not a hazardous material for purposes of transportation under the U.S. Department of Transportation Table of Hazardous Materials, 49 CFR §172.101.

U.S. DOT HAZARD CLASSIFICATION

Proper Shipping Name: Not Regulated

Technical Name: N/A

UN Number: N/A

Hazard Class/Packing Group: N/A

Labels Required: None

DOT Packaging Requirements: N/A

Exceptions: N/A

SECTION 15 - REGULATORY INFORMATION

TSCA No.: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.

RCRA: Crystalline silica (quartz) is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA Section 103 Reportable Quantity: None

Emergency Planning and Community Right to Know Act: Crystalline silica (quartz) is not an extremely hazardous substance under Section 302 and is not a toxic chemical subject to the requirements of Section 313.

Clean Air Act: Crystalline silica (quartz) mined and processed by WHIBCO OF NEW JERSEY, INC. was not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300 (b)(3)(xxvi).

NTP: Respirable crystalline silica (quartz) is classified as known to be a Human Carcinogen.

OSHA Hazard Communication Evaluation: Crystalline silica (quartz) meets criteria for hazardous material, as defined by 29 CFR 1910.1200.

California Proposition 65: Crystalline silica (respirable) is classified as a substance known to the state of California to be a carcinogen.

SARA 311/312: Hazard Categories for SARA Section 311/312 Reporting: Chronic Health

SARA 313: This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements under the SARA Section 313 (40 CFR 372): None

Toxic Substances Control Act: All of the components of this product are listed on the EPA TSCA Inventory or exempt from premanufacture notification requirements.

California Inhalation Reference Exposure Level (REL): California established a chronic REL 3 ug for silica (crystalline, respirable). A Chronic REL is an airborne level of a substance at or below which no adverse health effects are anticipated in individuals indefinitely exposed to the substance at that level.

Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

Pennsylvania Worker and Community Right to Know Act: Quartz is a hazardous substance under the Act, but it is not a special hazardous substance or an environmental hazardous substance.

CANADA

Domestic Substances List: All the components of this product are listed on the Canadian Domestic Substances List or exempt from notification requirements.

WHMIS Classification: Class D, Division 2, Subdivision A (Very Toxic Material causing other Toxic Effects)

This MSDS has been prepared according to the criteria of the Controlled Products Regulation (CPR) and the MSDS contains all of the information required by the CPR.

OTHER

EINECS No.: 231-545-4

EEC Label (Risk/Safety Phrases): R 48/20, R40/20, S22, S38.

IARC: Crystalline silica (quartz) is classified in IARC Group 1.

National, state, provincial or local emergency planning, community right to know or other laws, regulations or ordinances may be applicable-consult applicable national, state, provincial or local laws. Consult all changes and applicable laws since the day of this MSDS.

SECTION 16 - OTHER INFORMATION

NFPA Hazard Rating: Health: 1 Fire: 0 Reactivity: 0

HMIS Hazard Rating: Health: * Fire: 0 Reactivity: 0

* Warning - Chronic health effect possible - inhalation of silica dust may cause lung injury/disease (silicosis). Take appropriate measures to avoid breathing dust. See Section 3.

References:

Registry for Toxic Effects of Chemical Substances (RTECS), 2014

Patty's Industrial Hygiene and Toxicology

NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica, April 2002

NTP Twelfth Report on Carcinogens, 2011

IARC Monograph Volume 100C, A Review of Human Carcinogens: Arsenic, Fibres, and Dusts (2012)

Hazardous Substances Data Bank (HSDB), 2014

Documentation of the TLV – Silica, Crystalline: α -Quartz and Cristobalite, American Conference of Governmental Industrial Hygienists, 2006

SDS Date of Preparation/Revision: May 12, 2014

Revision Summary: Conversion to US Hazcom 2012 format – GHS Classification added.

WHIBCO OF NEW JERSEY, INC. Disclaimer

The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by purchase, resale, use or exposure to our silica. Customer-users of silica must comply with all applicable health and safety laws, regulations, and orders including the OSHA Hazardous Communication Standard.

Approved By: Name (Print) Denese A. Deeds, CIH Company Name: Industrial Health & Safety Consultants, Inc

Signature: Denese A. Deeds

Title: Senior Chemical Regulatory Affairs Consultant Date: 05-12-14



SAFETY DATA SHEET

1. Identification

Product identifier	C/S GRANULAR™
Other means of identification	
Synonyms	SMECTITE CLAY * BENTONITE
Recommended use	Not available.
Recommended restrictions	None known. Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Manufacturer

Company name	CETCO, an MTI Company		
Address	2870 Forbs Avenue Hoffman Estates, IL 60192 United States		
Telephone	General Information	800 527-9948	
Website	http://www.cetco.com/		
E-mail	safetydata@amcol.com		
Emergency phone number	.		
Americas	1.866.519.4752 (US, Canada, Mexico) 1 760 476 3962 Access Code 333562		

2. Hazard(s) identification

Physical hazards	Not classified.
Health hazards	Not classified.
Environmental hazards	Not classified.
OSHA defined hazards	Not classified.
Label elements	
Hazard symbol	None.
Signal word	None.
Hazard statement	The substance does not meet the criteria for classification.
Precautionary statement	
Prevention	Observe good industrial hygiene practices.
Response	Wash hands after handling.
Storage	Store away from incompatible materials.
Disposal	Dispose of waste and residues in accordance with local authority requirements.
Hazard(s) not otherwise classified (HNOC)	None known.
Supplemental information	Not applicable.

3. Composition/information on ingredients

Substances

Chemical name	Common name and synonyms	CAS number	%
BENTONITE	SMECTITE CLAY BENTONITE	1302-78-9	100

Constituents

Chemical name	CAS number	%
CALCIUM CARBONATE	471-34-1	
SMECTITE GROUP MINERALS	1318-93-0	

Material name: C/S GRANULAR™

4959 Version #: 20 Revision date: 22-July-2015 Print date: 22-July-2015

SDS US

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Constituents

Chemical name	CAS number	%
QUARTZ	14808-60-7	<= 8
CRISTOBALITE	14464-46-1	<= 2

*Designates that a specific chemical identity and/or percentage of composition has been withheld as a trade secret. Bentonite is a UVCB substance sub-type 4. The purity of the product is 100 % w/w. Bentonite is composed mainly of smectite group minerals but the composition is varied, as expected for a UVCB substance, and other mineral constituents will be present in small and varying amounts. These minor constituents are not relevant for classification and labelling.

Composition comments

Occupational Exposure Limits for constituents are listed in Section 8. Bentonite is composed mainly of smectite group minerals but the composition is varied, as expected for a UVCB substance, and other mineral constituents will be present in small and varying amounts. These minor constituents are not relevant for classification and labelling. The purity of the product is 100% w/w. Impurities are not applicable for a UVCB substance.

4. First-aid measures

Inhalation

If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist. No specific first aid measures noted.

Skin contact

Get medical attention if irritation develops and persists. No specific first aid measures noted. Wash skin with soap and water.

Eye contact

No specific first aid measures noted. Flush thoroughly with water. If irritation occurs, get medical assistance.

Ingestion

No specific first aid measures noted. Rinse mouth thoroughly. Get medical attention if any discomfort occurs.

Most important symptoms/effects, acute and delayed

Dust in the eyes will cause irritation.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically.

General information

No hazards which require special first aid measures. Provide general supportive measures and treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂). Use any media suitable for the surrounding fires.

Unsuitable extinguishing media

Not applicable, non-combustible.

Specific hazards arising from the chemical

None known. The product itself does not burn.

Special protective equipment and precautions for firefighters

Material can be slippery when wet.

Fire fighting equipment/instructions

In the event of fire, cool tanks with water spray. Material can be slippery when wet.

Specific methods

Cool containers exposed to flames with water until well after the fire is out.

General fire hazards

No unusual fire or explosion hazards noted. This material will not burn.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Material can be slippery when wet. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Avoid inhalation of dust from the spilled material. For personal protection, see section 8 of the SDS. No special precautions are necessary beyond normal good hygiene practices. See Section 8 for additional personal protection advice when handling this product.

Methods and materials for containment and cleaning up

If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Sweep up or vacuum up spillage and collect in suitable container for disposal. Collect dust using a vacuum cleaner equipped with HEPA filter. Minimize dust generation and accumulation. Avoid the generation of dusts during clean-up. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS. Collect powder using special dust vacuum cleaner with particle filter or carefully sweep into closed container.

Environmental precautions

Prevent further leakage or spillage if safe to do so. No special environmental precautions required.

7. Handling and storage

Precautions for safe handling

Minimize dust generation and accumulation. Provide appropriate exhaust ventilation at places where dust is formed. Avoid breathing dust. Avoid contact with skin and eyes. In case of insufficient ventilation, wear suitable respiratory equipment. Practice good housekeeping.

Conditions for safe storage, including any incompatibilities

No special restrictions on storage with other products. Store in a dry area. Store in original tightly closed container. Keep the container dry. Store in a well-ventilated place. Store away from incompatible materials (see Section 10 of the SDS). Guard against dust accumulation of this material.

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000)

Constituents	Type	Value	Form
INERT OR NUISANCE DUSTS	PEL	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.

US. OSHA Table Z-3 (29 CFR 1910.1000)

Constituents	Type	Value	Form
INERT OR NUISANCE DUSTS	TWA	5 mg/m ³	Respirable fraction.
		15 mg/m ³	Total dust.
		50 mppcf	Total dust.
		15 mppcf	Respirable fraction.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Appropriate engineering controls

Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the OEL, suitable respiratory protection must be worn.

Individual protection measures, such as personal protective equipment

Eye/face protection

Use tight fitting goggles if dust is generated. Wear dust-resistant safety goggles where there is danger of eye contact.

Skin protection

Hand protection

No protection is ordinarily required under normal conditions of use.

Other

Normal work clothing (long sleeved shirts and long pants) is recommended.

Respiratory protection

Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.

Thermal hazards

Not applicable.

General hygiene considerations

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Use good industrial hygiene practices in handling this material.

9. Physical and chemical properties

Appearance

Lump, granular or fine powder.

Physical state

Solid.

Form

Powder. Various.

Color

Various.

Odor

None.

Odor threshold

Not applicable.

pH

8.5 - 11

Melting point/freezing point

> 842 °F (> 450 °C) / Not applicable.

Initial boiling point and boiling range

Not applicable.

Flash point

Not applicable.

Evaporation rate

Not available.

Flammability (solid, gas)

This product is not flammable.

Upper/lower flammability or explosive limits

Flammability limit - lower (%) Not applicable.

Flammability limit - upper (%) Not applicable.

Explosive limit - lower (%) Not available.

Explosive limit - upper (%) Not available.

Vapor pressure Not applicable.

Vapor density Not applicable.

Relative density 2.6 g/cm³

Solubility(ies)

Solubility (water) < 0.9 mg/l

Partition coefficient (n-octanol/water) Not applicable.
Not applicable.

Auto-ignition temperature Not applicable.

Decomposition temperature > 932 °F (> 500 °C)

Viscosity Not applicable.

Viscosity temperature Not applicable.

Other information

Bulk density 0.9 - 1.4 g/cm³

Explosive limit Not applicable.

Explosive properties Not explosive

Explosivity Not applicable.

Flame extension Not applicable.

Flammability Not applicable.

Flammability (flash back) Not applicable.

Flammability (Heat of combustion) Not applicable.

Flammability (Train fire) Not applicable.

Flammability class Not applicable.

Flash point class Not flammable

Molecular formula UVCB Substance

Molecular weight Not applicable.

Oxidizing properties None.

Percent volatile 0 %

pH in aqueous solution 8.5 - 11

Specific gravity Not applicable.

VOC (Weight %) CARB
0 %

10. Stability and reactivity

Reactivity The product is stable and non-reactive under normal conditions of use, storage and transport.

Chemical stability Stable at normal conditions.

Possibility of hazardous reactions Will not occur.

Conditions to avoid Moisture. Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).

Incompatible materials None known.

Hazardous decomposition products Irritating and/or toxic fumes and gases may be emitted upon the products decomposition.

11. Toxicological information

Information on likely routes of exposure

Inhalation	Inhalation of dusts may cause respiratory irritation.
Skin contact	Not classified.
Eye contact	Dust in the eyes will cause irritation.
Ingestion	Not classified.

Symptoms related to the physical, chemical and toxicological characteristics	None known.
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Information on toxicological effects

Product	Species	Test Results
C/S GRANULAR™ (CAS 1302-78-9)		
Acute		
Inhalation		
Dust		
LC50	Rat	> 5.27 mg/l, 4 hr OECD 436
Oral		
Dust		
LD50	Rat	> 2000 mg/kg OECD 425

* Estimates for product may be based on additional component data not shown.

Skin corrosion/irritation	Not classified.
Serious eye damage/eye irritation	Dust in the eyes will cause irritation. Mild irritant to eyes (according to the modified Kay & Calandra criteria)
Respiratory or skin sensitization	
Respiratory sensitization	Not classified.
Skin sensitization	Not classified.
Germ cell mutagenicity	Not classified.
Carcinogenicity	In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. The product does not meet the criteria for classification as hazardous according to EC Regulation 1272/2008 and Directive 67/548/EC as amended. The product contains less than 1% w/w RCS (respirable crystalline silica).
Reproductive toxicity	Not classified.
Specific target organ toxicity - single exposure	Not classified.
Specific target organ toxicity - repeated exposure	Not classified.
Aspiration hazard	Not available.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
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Product		Species	Test Results
BENTONITE (CAS 1302-78-9)			
Aquatic			
Algae	EC50	Freshwater algae	> 100 mg/l, 72 hours
Crustacea	EC50	Coon stripe shrimp (Pandalus danae)	24.8 mg/l, 96 hours

Product		Species	Test Results
Fish	LC50	Daphnia	> 100 mg/l, 48 hours
		Dungeness or edible crab (Cancer magister)	81.6 mg/l, 96 hours
		Freshwater fish	16000 mg/l, 96 hours
		Marine water fish	2800 - 3200 mg/l, 24 hours

* Estimates for product may be based on additional component data not shown.

Persistence and degradability	Not relevant for inorganic substances
Bioaccumulative potential	Will not bio-accumulate.
Mobility in soil	Bentonite is almost insoluble and thus presents a low mobility in most soils.
Mobility in general	The product has poor water-solubility.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose in accordance with all applicable regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied. Store containers and offer for recycling of material when in accordance with the local regulations.

14. Transport information

DOT	Not regulated as dangerous goods.
IATA	Not regulated as dangerous goods.
IMDG	Not regulated as dangerous goods.
Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code	Not applicable.

15. Regulatory information

US federal regulations	
CERCLA Hazardous Substance List (40 CFR 302.4)	Not listed.
Superfund Amendments and Reauthorization Act of 1986 (SARA)	
Hazard categories	Immediate Hazard - No Delayed Hazard - No Fire Hazard - No Pressure Hazard - No Reactivity Hazard - No
SARA 302 Extremely hazardous substance	Not listed.
SARA 311/312 Hazardous chemical	No
SARA 313 (TRI reporting)	Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

Food and Drug Administration (FDA) Total food additive
Direct food additive
GRAS food additive

US state regulations

US. California Controlled Substances. CA Department of Justice (California Health and Safety Code Section 11100)

Not listed.

US. Massachusetts RTK - Substance List

Not regulated.

US. New Jersey Worker and Community Right-to-Know Act

Not regulated.

US. Pennsylvania Worker and Community Right-to-Know Law

Not listed.

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

California Safe Drinking Water and Toxic Enforcement Act of 1986 (Proposition 65): This material is not known to contain any chemicals currently listed as carcinogens or reproductive toxins.

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	Yes
Canada	Non-Domestic Substances List (NDSL)	No
China	Inventory of Existing Chemical Substances in China (IECSC)	Yes
Europe	European Inventory of Existing Commercial Chemical Substances (EINECS)	Yes
Europe	European List of Notified Chemical Substances (ELINCS)	No
Japan	Inventory of Existing and New Chemical Substances (ENCS)	Yes
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	Yes
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates that all components of this product comply with the inventory requirements administered by the governing country(s)

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date	03-October-2013
Revision date	22-July-2015
Version #	20
Further information	This safety datasheet only contains information relating to safety and does not replace any product information or product specification.
HMIS® ratings	Health: 1 Flammability: 0 Physical hazard: 0
NFPA ratings	Health: 1 Flammability: 0 Instability: 0

List of abbreviations

SWERF = Size-Weighted Relevant Fine Fraction methodology is a scientific method developed to quantify the content of respirable particles within a bulk product. All details about the SWERF method are available at www.crystallinesilica.eu.

UVCB = a substance of Unknown or Variable composition, Complex reaction products or Biological materials

References

For any information on literature references or toxicity/ecotoxicity studies, please contact the supplier.

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The manufacturer expressly does not make any representations, warranties, or guarantees as to its accuracy, reliability or completeness nor assumes any liability, for its use. It is the user's responsibility to verify the suitability and completeness of such information for each particular use. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text. The information in the sheet was written based on the best knowledge and experience currently available.

Safety Data Sheet

Damtite Powdered Waterproofers & Waterproof Coatings

Revision date : 2015/05/01

Page: 1/11

Version: 1.0

(07000/SDS-Hydraulic Cement-US/EN)



Wall Firma, Inc.

Masonry Waterproofing and Repair since 1949

1. Identification

Product identifier used on the label

2.5 lb. Pail Damtite Hydraulic Cement

10 lb. Pail Damtite Hydraulic Cement

50 lb. Pail Damtite Hydraulic Cement

Recommended use of the chemical and restriction on use

Recommended use*: for industrial and professional users

* The "Recommended use" identified for this product is provided solely to comply with a US Federal requirement and is not part of the seller's published specification. The terms of this Safety Data Sheet (SDS) do not create or infer any warranty, express or implied, including by incorporation into or reference in the seller's sales agreement.

Details of the supplier of the safety data sheet

Company:

Wall Firma Inc./ Damtite Waterproofing
733 E. Main St.
Monongahela, PA 15063

Telephone: +1 724-258-6873

Emergency telephone number

CHEMTREC: 1-800-424-9300

Other means of identification

Synonyms: Not Available

2. Hazards Identification

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Classification of the product

Skin Corr./Irrit.	2	Skin corrosion/irritation
Eye Dam./Irrit.	1	Serious eye damage/eye irritation
Carc.	1A	Carcinogenicity
STOT SE	3 (irritating to respiratory system)	Specific target organ toxicity — single exposure

Safety Data Sheet

Damтите Powdered Waterproofers & Waterproof Coatings

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(07000/SDS-Hydraulic Cement-US/EN)

STOT RE

1

Specific target organ toxicity — repeated exposure

Label elements

Pictogram:



Signal Word:

Danger

Hazard Statement:

H318

Causes serious eye damage.

H315

Causes skin irritation.

H335

May cause respiratory irritation.

H350

May cause cancer.

H372

Causes damage to organs (Lung) through prolonged or repeated exposure.

Precautionary Statements (Prevention):

P280

Wear protective gloves/protective clothing/eye protection/face protection.

P271

Use only outdoors or in a well-ventilated area.

P260

Do not breathe dust/gas/mist/vapours.

P202

Do not handle until all safety precautions have been read and understood.

P270

Do not eat, drink or smoke when using this product.

P264

Wash with plenty of water and soap thoroughly after handling.

Precautionary Statements (Response):

P305 + P351 + P338

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P310

Immediately call a POISON CENTER or doctor/physician.

P304 + P340

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

P303 + P362

IF ON SKIN (on hair): Wash with plenty of soap and water.

P332 + P313

If skin irritation occurs: Get medical advice/attention.

P362 + P364

Take off contaminated clothing and wash before reuse.

Precautionary Statements (Storage):

P403 + P233

Store in a well-ventilated place. Keep container tightly closed.

P405

Store locked up.

Precautionary Statements (Disposal):

P501

Dispose of contents/container to hazardous or special waste collection point.

Hazards not otherwise classified

If applicable information is provided in this section on other hazards which do not result in

Safety Data Sheet

Damnite Powdered Waterproofers & Waterproof Coatings

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(07000/SDS-Hydraulic Cement-US/EN)

classification but which may contribute to the overall hazards of the substance or mixture.

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

Emergency overview

WARNING:

MAY BE HARMFUL IF INHALED.

RISK OF SERIOUS DAMAGE TO EYES.

Can cause moderate irritation due to abrasive action.

In combination with water, repeated or prolonged dermal exposure can cause moderate to severe alkali burns.

CONTAINS MATERIAL WHICH CAN CAUSE CANCER. Keep container tightly closed.

Avoid inhalation of dusts. Avoid ingestion.

Avoid contact with the skin, eyes and clothing. Wash thoroughly after handling.

3. Composition / Information on Ingredients

According to Regulation 2012 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
65997-15-1	>= 25.0 - < 50.0	% Cement, portland, chemicals
14808-60-7	>= 15.0 - < 25.0	% crystalline silica
1305-62-0	>= 3.0 - < 10.0	% Calcium dihydroxide

According to Regulation 1994 OSHA Hazard Communication Standard; 29 CFR Part 1910.1200

<u>CAS Number</u>	<u>Content (W/W)</u>	<u>Chemical name</u>
65997-15-1	- <= 30.0 60.0	% Cement, portland, chemicals
14808-60-7	- <= 15.0 40.0	% crystalline silica
471-34-1	>= 1.0 - <= 5.0	% Calcium carbonate
1305-62-0	>= 1.0 - <= 5.0	% Calcium dihydroxide
13397-24-5	>= 1.0 - <= 5.0	% Gypsum (Ca(SO4).2H2O)
1317-65-3	>= 0.5 - <= 1.5	% Limestone

4. First-Aid Measures

Description of first aid measures

General advice:

First aid personnel should pay attention to their own safety. Remove contaminated clothing.

If inhaled:

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After inhalation of dust. Keep patient calm, remove to fresh air. If difficulties occur: Obtain medical attention.

If on skin:

After contact with skin, wash immediately with plenty of water and soap. Under no circumstances should organic solvent be used. If irritation develops, seek medical attention.

If in eyes:

Wash affected eyes for at least 15 minutes under running water with eyelids held open, consult an eye specialist.

If swallowed:

Rinse mouth immediately and then drink plenty of water, seek medical attention. Do not induce vomiting unless told to by a poison control center or doctor.

Most important symptoms and effects, both acute and

Symptoms: The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

Indication of any immediate medical attention and special treatment needed

5. Fire-Fighting Measures

Extinguishing media

Suitable extinguishing media:
foam, water spray, dry powder, carbon dioxide

Unsuitable extinguishing media for safety reasons: water jet

Additional information:

Product itself is non-combustible. Only the packaging materials can catch fire. The extinguishing agents normally used are sufficient.

Special hazards arising from the substance or mixture

Hazards during fire-fighting:

carbon monoxide, carbon dioxide, harmful vapours

Evolution of fumes/fog. The substances/groups of substances mentioned can be released in case of fire. Product is not combustible or explosive.

Advice for fire-fighters

Protective equipment for fire-fighting:

Wear self-contained breathing apparatus and chemical-protective clothing.

Further information:

Product itself is non-combustible; fire extinguishing method of surrounding areas must be considered. The degree of risk is governed by the burning substance and the fire conditions. Dispose of fire debris and contaminated extinguishing water in accordance with official regulations.

6. Accidental release measures

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Personal precautions, protective equipment and emergency procedures

Avoid dust formation. Avoid contact with skin and eyes. Use personal protective clothing. Handle in accordance with good building materials hygiene and safety practice.

Environmental precautions

Do not discharge into drains/surface waters/groundwater.

Methods and material for containment and cleaning up

For small amounts: Pick up with suitable appliance and dispose of.

For large amounts: Pick up with suitable appliance and dispose of. Pack in tightly closed containers for disposal.

For residues: Rinse with plenty of water. Avoid raising dust.

7. Handling and Storage

Precautions for safe handling

Avoid dust formation. The Cement contained in this product reacts alkaline when in contact with water or humidity. This may cause severe irritation of skin or mucous membranes. The humidity of the skin or mucous membranes is enough for this reaction. Prolonged direct contact to the dry product should be avoided therefore. Avoid inhalation of dusts. Avoid skin contact. Pour downwind and allow as little free fall as possible while emptying bags into equipment. Breathing must be protected when large quantities are decanted without local exhaust ventilation.

Protection against fire and explosion:

No special precautions necessary.

Conditions for safe storage, including any incompatibilities

Segregate from metals. Segregate from acids. Segregate from lyes. Segregate from oxidants. Segregate from foods and animal feeds.

Suitable materials for containers: tin (tinplate)

Further information on storage conditions: Containers should be stored tightly sealed in a dry place.

8. Exposure Controls/Personal Protection

Advice on system design:

Provide local exhaust ventilation to maintain recommended P.E.L.

Personal protective equipment

Respiratory protection:

Breathing protection if dusts are formed.

Hand protection:

Chemical resistant protective gloves, Manufacturer's directions for use should be observed because of great diversity of types.

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Eye protection:

Tightly fitting safety goggles (chemical goggles).

Body protection:

Body protection must be chosen based on level of activity and exposure.

General safety and hygiene measures:

Avoid contact with the skin, eyes and clothing. Avoid inhalation of dusts. In order to prevent contamination while handling, closed working clothes and working gloves should be used. Handle in accordance with good building materials hygiene and safety practice. When using, do not eat, drink or smoke. Hands and/or face should be washed before breaks and at the end of the shift. At the end of the shift the skin should be cleaned and skin-care agents applied. Gloves must be inspected regularly and prior to each use. Replace if necessary (e.g. pinhole leaks). Contaminated equipment or clothing should be cleaned after each use or disposed of.

9. Physical and Chemical Properties

Form:	powder	
Odour:	odourless	
Odour threshold:	No applicable information available	
Melting point:		suspension)
Sublimation point:		The product has not been tested.
Flammability:	not flammable	No applicable information available.
Vapour pressure:		The product has not been tested.
Bulk density:	approx. 1,800 - 2,400 kg/m ³	
Vapour density:		The product is a non-volatile solid.
Partitioning coefficient n-octanol/water (log Pow):		not applicable
Viscosity, dynamic:		not applicable, the product is a solid
Solubility in water:		(20 °C) dispersible
Miscibility with water:		miscible
Evaporation rate:		The product is a non-volatile solid.

10. Stability and Reactivity

Reactivity

No hazardous reactions if stored and handled as prescribed/indicated.

Chemical stability

The product is stable if stored and handled as prescribed/indicated.

Possibility of hazardous reactions

The product is stable if stored and handled as prescribed/indicated.
Strong bases are formed on the addition of water.

Conditions to avoid

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Avoid dust formation. Avoid humidity.

Incompatible

materials strong acids
strong bases, strong acids

Hazardous decomposition products

Decomposition products:

No hazardous decomposition products if stored and handled as prescribed/indicated.

11. Toxicological information

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Acute toxicity

Assessment of acute toxicity: Product may present a nuisance dust hazard. Inhalation of dust may cause respiratory tract irritation, coughing and breathing difficulties.

Assessment other acute effects

Assessment of STOT single:

Causes temporary irritation of the respiratory tract.

The product has not been tested. The statement has been derived from the properties of the individual components.

Irritation / corrosion

Assessment of irritating effects: Skin contact causes irritation. May cause severe damage to the eyes. The product has not been tested. The statement has been derived from the properties of the individual components.

Skin

Result: Irritant.

*Information on: Cement, portland,
chemicals Species: rabbit
Result: Irritant.*

Eye

Result: Risk of serious damage to eyes.

*Information on: Cement, portland,
chemicals Species: rabbit
Result: Severely irritating.*

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Sensitization

Assessment of sensitization: There is no evidence of a skin-sensitizing potential. The product has not been tested. The statement has been derived from the properties of the individual components. Chromate in this product has been reduced. Sensitization due to chromate within stated shelf-life is unlikely.

Chronic Toxicity/Effects

Repeated dose toxicity

Assessment of repeated dose toxicity: After repeated exposure the prominent effect is local irritation. The product has not been tested. The statement has been derived from the properties of the individual components.

Inhalation of dust may cause respiratory tract irritation, coughing and breathing difficulties.

Genetic toxicity

Assessment of mutagenicity: The chemical structure does not suggest a specific alert for such an effect. Based on available Data, the classification criteria are not met.

Carcinogenicity

Assessment of carcinogenicity: Contains a known carcinogen. This product contains crystalline silica (quartz).

Information on: crystalline silica

Assessment of carcinogenicity: In long-term studies in rats and mice in which the substance was given by feed, a carcinogenic effect was not observed. In long-term animal studies in which the substance was given by inhalation in high doses, a carcinogenic effect was observed. The substance and its compounds in the form of respirable dusts/aerosols classified by the German MAK commission as a category 1 carcinogen (substances that cause cancer to humans). A carcinogenic effect cannot safely be ruled out. The inhalation uptake of the alveolar fraction of the fine dust may cause damage to the lungs. The International Agency for Research on Cancer (IARC) has classified this substance as a Group 1 (known) human carcinogen. The International Agency for Research on Cancer (IARC) has classified this substance as a Group 1 (known) human carcinogen. NTP listed carcinogen

Reproductive toxicity

Assessment of reproduction toxicity: The chemical structure does not suggest a specific alert for such an effect. Based on available Data, the classification criteria are not met.

Teratogenicity

Assessment of teratogenicity: The chemical structure does not suggest a specific alert for such an effect. Based on available Data, the classification criteria are not met.

Experiences in humans

Information on: crystalline silica May cause silicosis.

Other Information

Based on our experience and the information available, no adverse health effects are expected if handled as recommended with suitable precautions for designated uses. The product has not been tested. The statements on toxicology have been derived from the properties of the individual

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components.

Symptoms of Exposure

The most important known symptoms and effects are described in the labelling (see section 2) and/or in section 11.

12. Ecological Information

Toxicity

Aquatic toxicity

Assessment of aquatic toxicity:

There is a high probability that the product is not acutely harmful to aquatic organisms.

The product gives rise to pH shifts. Based on available Data, the classification criteria are not met.

Persistence and degradability

Assessment biodegradation and elimination (H₂O)

Inorganic product which cannot be eliminated from water by biological purification processes. The product is slightly soluble in water. It can be largely eliminated from the water by abiotic processes, e.g. mechanical separation.

Experience shows this product to be inert and non-degradable.

Elimination information

not applicable

Bioaccumulative potential

Assessment bioaccumulation potential

The product will not be readily bioavailable due to its consistency and insolubility in water.

Mobility in soil

Assessment transport between environmental compartments

The substance will not evaporate into the atmosphere from the water surface.

Following exposure to soil, adsorption to solid soil particles is probable, therefore contamination of groundwater is not expected.

Additional information

Other ecotoxicological advice:

Do not discharge product into the environment without control. The product has not been tested. The statements on ecotoxicology have been derived from the properties of the individual components.

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13. Disposal considerations

Waste disposal of substance:

Dispose of in accordance with local authority regulations. Do not discharge into drains/surface waters/groundwater.

Container disposal:

Completely emptied packagings can be given for recycling.

14. Transport Information

Land transport

USDOT Not classified as a dangerous good under transport regulations

Sea transport

IMDG Not classified as a dangerous good under transport regulations

Air transport

IATA/ICAO Not classified as a dangerous good under transport regulations

15. Regulatory Information

Federal Regulations

Registration status:

Chemical TSCA, US released / listed

EPCRA 311/312 (Hazard categories):

Acute;
Chronic

CERCLA RQ

CAS Number

Chemical name

100 LBS

50-00-0

Formaldehyde

State regulations

State RTK

MA, NJ, PA

MA, NJ, PA

MA, NJ, PA

MA, NJ, PA

NJ, PA

CAS Number

65997-15-1

14808-60-7

471-34-1

1305-62-0

13397-24-5

Chemical name

Cement, portland, chemicals

crystalline silica

Calcium carbonate

Calcium dihydroxide

Gypsum (Ca(SO₄).2H₂O)

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MA, NJ, PA

1317-65-3

Limestone

CA Prop. 65:

THIS PRODUCT CONTAINS A CHEMICAL(S) KNOWN TO THE STATE OF CALIFORNIA TO CAUSE CANCER AND BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

NFPA Hazard codes:

Health : 2

Fire: 0

Reactivity: 0

Special:

HMIS III rating

Health: 2^a

Flammability: 0

Physical hazard: 1

16. Other Information

SDS Prepared by:

Wall Firma Inc./ Damtide Waterproofing

SDS Prepared on: 2015/05.01

We support worldwide Responsible Care® initiatives. We value the health and safety of our employees, customers, suppliers and neighbors, and the protection of the environment. Our commitment to Responsible Care is integral to conducting our business and operating our facilities in a safe and environmentally responsible fashion, supporting our customers and suppliers in ensuring the safe and environmentally sound handling of our products, and minimizing the impact of our operations on society and the environment during production, storage, transport, use and disposal of our products.

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SAFETY DATA SHEET

M48006 - ANSI - EN



DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES

SDS No.: M48006

SDS Revision Date: 09-Jun-2015

1. CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

Company Identification:	Occidental Chemical Corporation 5005 LBJ Freeway P.O. Box 809050 Dallas, TX 75380-9050 1-800-752-5151
24 Hour Emergency Telephone Number:	1-800-733-3665 or 1-972-404-3228 (USA); CHEMTREC (within USA and Canada): 1-800-424-9300; CHEMTREC (outside USA and Canada): +1 703-527-3887; CHEMTREC Contract No: CCN16186
To Request an SDS:	MSDS@oxy.com or 1-972-404-3245
Customer Service:	1-800-752-5151 or 1-972-404-3700
Product Identifier:	DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES
Synonyms:	Calcium Dichloride, Calcium Chloride, Calcium Chloride Flake, DOWFLAKE
Product Use:	Concrete Acceleration, Ice Melting, Dust Control, Road Base Stabilization
Uses Advised Against:	None identified.
Note:	DOWFLAKE™ is a trademark of The Dow Chemical Company
Additional Information:	CONSUMER PRODUCTS: When packaged in quantities of 50 lbs. or less, and used in a manner and frequency typical of consumer use, OxyChem considers this product a consumer use product which is regulated by the Consumer Product Safety Commission (CPSC). Because CPSC labeling requirements differ from the Occupational Safety and Health Administration (OSHA) GHS requirements for safety data sheets (SDS), slight differences in hazard information between the product label and SDS may be observed.

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2. HAZARDS IDENTIFICATION

OSHA REGULATORY STATUS: This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

EMERGENCY OVERVIEW:

Color: White
Appearance: Flakes
Odor: Odorless

Signal Word: **WARNING**

MAJOR HEALTH HAZARDS: CAUSES EYE AND SKIN IRRITATION. HARMFUL IF SWALLOWED.

PHYSICAL HAZARDS: Heat is generated when mixed with water or aqueous acid solutions.

PRECAUTIONARY STATEMENTS: Wash thoroughly after handling.

GHS CLASSIFICATION:

GHS: CONTACT HAZARD - SKIN:	Category 2 - Causes skin irritation.
GHS: CONTACT HAZARD - EYE:	Category 2B - Causes eye irritation
GHS: ACUTE TOXICITY - INHALATION:	No data available. Not classified.
GHS: ACUTE TOXICITY - ORAL:	Category 4 - Harmful if swallowed.
GHS: ACUTE TOXICITY - DERMAL:	Not classified as acutely toxic for dermal exposure.
GHS: CARCINOGENICITY:	Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC, or OSHA.

UNKNOWN ACUTE TOXICITY: A percentage of this product consists of ingredient(s) of unknown acute toxicity.

Unknown Acute Dermal Toxicity:

3% of this product consists of ingredient(s) of unknown acute dermal toxicity.

GHS SYMBOL: Exclamation mark

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GHS SIGNAL WORD: WARNING

GHS HAZARD STATEMENTS:

GHS - Health Hazard Statement(s)

Causes skin irritation
Causes eye irritation
Harmful if swallowed

GHS - Precautionary Statement(s) - Prevention

Wear eye and face protection
Wear protective gloves
Wash thoroughly after handling
Do not eat, drink or smoke when using this product

GHS - Precautionary Statement(s) - Response

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
If eye irritation persists: Get medical advice/attention
IF ON SKIN: Wash with plenty of water
Take off contaminated clothing and wash it before reuse
If skin irritation occurs: Get medical advice/attention
IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
Rinse mouth
Specific treatment (see First Aid information on product label and/or Section 4 of the SDS)

GHS - Precautionary Statement(s) - Storage

There are no Precautionary-Storage phrases assigned

GHS - Precautionary Statement(s) - Disposal

Dispose of contents and container in accordance with applicable local, regional, national, and/or international regulations.

Hazards Not Otherwise Classified (HNOC)

None Known

See Section 11: TOXICOLOGICAL INFORMATION

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms: Calcium Dichloride, Calcium Chloride, Calcium Chloride Flake, DOWFLAKE

DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES

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Component	Percent [%]	CAS Number
Calcium chloride	> 83 - < 87	10043-52-4
Water	> 8 - < 14	7732-18-5
Potassium Chloride	> 2 - < 3	7447-40-7
Sodium Chloride	> 1 - < 2	7647-14-5

Notes: Potassium chloride and sodium chloride are impurities from the naturally-occurring source material, brine solution.

4. FIRST AID MEASURES

INHALATION: If inhalation of dust occurs and adverse effects result, remove to uncontaminated area. Call a POISON CENTER or doctor/physician if you feel unwell.

SKIN CONTACT: If on skin, wash with plenty of water. If skin irritation occurs: Get medical advice/ attention. Take off contaminated clothing and wash before reuse. **SPECIFIC TREATMENT:** Wash with lots of water.

EYE CONTACT: If in eyes, rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If irritation occurs, get medical advice/attention.

INGESTION: If swallowed, rinse mouth. Contact a poison center or doctor/physician if you feel unwell.

Most Important Symptoms/Effects (Acute and Delayed) ∴

Acute Symptoms/Effects: Listed below.

Inhalation (Breathing): Inhaling dust may cause irritation to upper respiratory tract (nose and throat). Nasal mucosal and oropharyngeal erythema.

Skin: Skin Irritation. Direct abrasion of skin from solid, erythema and burn from reaction with water. Prolonged contact and occlusion may cause more severe symptoms. Damage is localized to contact areas.

Eye: Eye Irritation. Direct abrasion of cornea from solid, erythema and burn from reaction with water, conjunctival swelling and cornea opacification from hypertonic solution and heat. Corneal eye pain, redness, acute corneal thickening or whitening.

Ingestion (Swallowing): Consumption of solids or hypertonic solutions causes nausea, vomiting, and increased thirst.

Delayed Symptoms/Effects:

- Chronic exposures to skin and mucous membranes that cause irritation may cause a chronic dermatitis or mucosal membrane problem

Interaction with Other Chemicals Which Enhance Toxicity: None known.

Medical Conditions Aggravated by Exposure: Any skin condition that disrupts the skin, such as abrasions, cuts, psoriasis, fungal infections, etc. Any upper respiratory conditions that compromise mucosa can increase local damage from dust contact. Any eye condition that compromises tear production, conjunctiva, or normal corneal homeostasis.

Protection of First-Aiders: At minimum, treating personnel should utilize PPE sufficient for prevention of bloodborne pathogen transmission. If potential for exposure exists refer to Section 8 for specific personal protective equipment.

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Notes to Physician: Due to irritant properties, resulting from heat created as solid material dissolves in water, swallowing may result in burns/ulceration of mucus membranes. If burn is present, treat as any thermal burn, after decontamination. No specific antidote. Treatment of exposure should be directed at the control of symptoms and the clinical condition of the patient.

5. FIRE-FIGHTING MEASURES

Fire Hazard: This material does not burn.

Extinguishing Media: Use extinguishing agents appropriate for surrounding fire.

Fire Fighting: Keep unnecessary people away, isolate hazard area and deny entry. This material does not burn. Fight fire for other material that is burning. Water should be applied in large quantities as fine spray. Wear NIOSH approved positive-pressure self-contained breathing apparatus operated in pressure demand mode. Wear protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots, and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-contained breathing apparatus. If this is not available, wear full chemical resistant clothing with self-contained breathing apparatus and fight fire from a remote location. For protective equipment in post-fire or non-fire clean-up situations, refer to the relevant sections.

Hazardous Combustion Products: Formed under fire conditions: hydrogen chloride gas, calcium oxide

Sensitivity to Mechanical Impact: Not sensitive.

Sensitivity to Static Discharge: Not sensitive.

Lower Flammability Level (air): Not applicable

Upper Flammability Level (air): Not applicable

Flash point: Not applicable

Auto-ignition Temperature: Not applicable

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions:

Isolate area. Keep unnecessary and unprotected personnel from entering the area. Spilled material may cause a slipping hazard on some surfaces. Use appropriate safety equipment. For additional information, refer to Section 8, Exposure Controls and Personal Protection. Refer to Section 7, Handling, for additional precautionary measures.

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Methods and Materials for Containment and Cleaning Up:

Small and large spills: Contain spilled material if possible. Collect in suitable and properly labeled containers. Flush residue with plenty of water. See Section 13, Disposal considerations, for additional information.

Environmental Precautions:

Prevent large spills from entering into soil, ditches, sewers, waterways and/or groundwater. See Section 12, Ecological Information.

7. HANDLING AND STORAGE

Precautions for Safe Handling:

Heat developed during diluting or dissolving is very high. Use cool water when diluting or dissolving (temperature less than 80°F, 27°C). Avoid contact with eyes, skin, and clothing. Do not swallow. Wash thoroughly after handling. See Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION.

Safe Storage Conditions:

Store in a dry place. Protect from atmospheric moisture. Keep container tightly closed. Keep separated from incompatible substances (see below or Section 10 of the Safety Data Sheet).

Incompatibilities/ Materials to Avoid:

Heat is generated when mixed with water or aqueous acids. Spattering and boiling can occur. Avoid contact with: bromide trifluoride, 2-furan percarboxylic acid because calcium chloride is incompatible with those substances. Contact with zinc forms flammable hydrogen gas, which can be explosive. Catalyzes exothermic polymerization of methyl vinyl ether. Attacks metals in the presence of moisture, and may release flammable hydrogen gas. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromates

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Regulatory Exposure Limit(s): Listed below for the product components that have regulatory occupational exposure limits (OEL's) established.

Component	OSHA Final PEL TWA	OSHA Final PEL STEL	OSHA Final PEL Ceiling
Particles Not Otherwise Regulated (PNOR) 00-00-001	15 mg/m ³ (Total) 5 mg/m ³ (Respirable)	-----	-----

OEL: Occupational Exposure Limit; OSHA: United States Occupational Safety and Health Administration; PEL: Permissible Exposure Limit; TWA: Time Weighted Average; STEL: Short Term Exposure Limit

NON-REGULATORY EXPOSURE LIMIT(S): Listed below for the product components that have advisory (non-regulatory) occupational exposure limits (OEL's) established.

Component	CAS Number	ACGIH TWA	ACGIH STEL	ACGIH Ceiling	OSHA TWA (Vacated)	OSHA STEL (Vacated)	OSHA Ceiling (Vacated)
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Particulates Not Otherwise Specified (PNOS)	Not Assigned	10 mg/m ³ (Inhalable) 3 mg/m ³ (Respirable)	-----	-----	-----	-----	-----
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- The Non-Regulatory United States Occupational Safety and Health Administration (OSHA) limits, if shown, are the Vacated 1989 PEL's (vacated by 58 FR 35338, June 30, 1993).

- The American Conference of Governmental Industrial Hygienists (ACGIH) is a voluntary organization of professional industrial hygiene personnel in government or educational institutions in the United States. The ACGIH develops and publishes recommended occupational exposure limits each year called Threshold Limit Values (TLVs) for hundreds of chemicals, physical agents, and biological exposure indices.

Additional Advice: Ingestion: Use good personal hygiene. Do not consume or store food in the work area. Wash hands before smoking or eating.

ENGINEERING CONTROLS: Use local exhaust ventilation, or other engineering controls to maintain airborne levels below exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, general ventilation should be sufficient for most operations. Local exhaust ventilation may be necessary for some operations.

PERSONAL PROTECTIVE EQUIPMENT:

Eye Protection: Wear safety glasses with side-shields. For dusty operations or when handling solutions of the material, wear chemical goggles.

Skin and Body Protection: Wear clean, body-covering clothing.

Hand Protection: Use gloves chemically resistant to this material. If hands are cut or scratched, use gloves chemically resistant to this material even for brief exposures. Examples of preferred glove barrier materials include: Neoprene, Polyvinyl chloride ("PVC" or "vinyl"), Nitrile/butadiene rubber ("nitrile" or "NBR"). NOTICE: The selection of a specific glove for a particular application and duration of use in a workplace should also take into account all relevant workplace factors such as, but not limited to: Other chemicals which may be handled, physical requirements (cut/puncture protection, dexterity, thermal protection), potential body reactions to glove materials, as well as the instructions/specifications provided by the glove supplier.

Respiratory Protection: Respiratory protection should be worn when there is a potential to exceed the exposure limit requirements or guidelines. If there are no applicable exposure limit requirements or guidelines, wear respiratory protection when adverse effects, such as respiratory irritation or discomfort have been experienced, or where indicated by your risk assessment process. In dusty or misty atmospheres, use an approved particulate respirator. The following should be effective types of air-purifying respirators: High efficiency particulate air (HEPA) N95. A respiratory protection program that meets 29 CFR 1910.134 must be followed whenever workplace conditions warrant use of a respirator.

9. PHYSICAL AND CHEMICAL PROPERTIES

DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES

SDS No.: M48006

SDS Revision Date: 09-Jun-2015

Appearance:	Flakes
Color:	White
Odor:	Odorless
Odor Threshold [ppm]:	No data available.
Molecular Formula:	CaCl ₂
Decomposition Temperature:	Not applicable
Boiling Point/Range:	Not applicable to solids
Freezing Point/Range:	Not applicable to solids.
Melting Point/Range:	772 °C (1,422 °F)
Vapor Pressure:	Negligible at ambient temperature
Vapor Density (air=1):	Not applicable
Relative Density/Specific Gravity (water=1):	Not applicable to solids
Bulk Density:	51 - 61 lb/ft ³
Water Solubility:	Readily soluble
pH:	Not applicable to solids
Volatility:	Not applicable
Evaporation Rate (ether=1):	Not applicable
Partition Coefficient (n-octanol/water):	No data available
Flash point:	Not applicable
Flammability (solid, gas):	Not applicable
Lower Flammability Level (air):	Not applicable
Upper Flammability Level (air):	Not applicable
Auto-ignition Temperature:	Not applicable
Viscosity:	Not applicable
Hygroscopic:	Yes

10. STABILITY AND REACTIVITY

Reactivity: Hygroscopic. Liberates large amounts of heat when dissolving in water or aqueous acids.

Chemical Stability: Stable at normal temperatures and pressures.

Possibility of Hazardous Reactions:

Avoid moisture.

Conditions to Avoid:

(e.g., static discharge, shock, or vibration) -. None known.

Incompatibilities/ Materials to Avoid:

Heat is generated when mixed with water or aqueous acids. Spattering and boiling can occur. Avoid contact with: bromide trifluoride, 2-furan percarboxylic acid because calcium chloride is incompatible with those substances. Contact with zinc forms flammable hydrogen gas, which can be explosive. Catalyzes exothermic polymerization of methyl vinyl ether. Attacks metals in the presence of moisture, and may release flammable hydrogen gas. Reaction of bromide impurity with oxidizing materials may generate trace levels of impurities such as bromates.

Hazardous Decomposition Products: Formed under fire conditions: hydrogen chloride gas, calcium oxide

Hazardous Polymerization: Will not occur.

DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES

SDS No.: M48006

SDS Revision Date: 09-Jun-2015

11. TOXICOLOGICAL INFORMATION**TOXICITY DATA:****PRODUCT TOXICITY DATA: DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES**

LD50 Oral: 1126 mg/kg - Oral Acute Toxicity Estimate (ATE)	LD50 Dermal: 2637 mg/kg - Dermal Acute Toxicity Estimate (ATE)	LC50 Inhalation: No data is available
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COMPONENT TOXICITY DATA:**Note:** The component toxicity data is populated by the LOLI database and may differ from the product toxicity data given.

Component	LD50 Oral:	LD50 Dermal:	LC50 Inhalation:
Calcium chloride 10043-52-4	1000 mg/kg (Rat)	2630 mg/kg (Rat)	-----
Water 7732-18-5	-----	-----	-----
Potassium Chloride 7447-40-7	2600 mg/kg (Rat)	-----	-----
Sodium Chloride 7647-14-5	3 g/kg (Rat)	10 g/kg (Rabbit)	42 g/m ³ (1 hr-Rat)

POTENTIAL HEALTH EFFECTS:

- Eye contact:** For solid: May cause slight eye irritation, mechanical injury only. Dust formation should be avoided, as dust can cause severe eye irritation with corneal injury.
- Skin contact:** Brief contact is essentially nonirritating to skin. Prolonged contact may cause skin irritation, even a burn. Not classified as corrosive to the skin according to DOT guidelines. May cause more severe response if skin is damp, abraded (scratched or cut), or covered by clothing, gloves, or footwear.
- Inhalation:** Dust may cause irritation to upper respiratory tract (nose and throat).
- Ingestion:** Low toxicity if swallowed. Small amounts swallowed incidentally as a result of normal handling operations are not likely to cause injury; however, swallowing larger amounts may cause local mucosal damage to esophagus and stomach. Swallowing may result in gastrointestinal irritation or ulceration.

DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES

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Chronic Effects:

Chronic exposures to calcium chloride that cause irritation may cause a chronic dermatitis or mucosal membrane problem. For the minor component(s): POTASSIUM CHLORIDE: In animals, effects have been reported on the following organs after ingestion: Gastrointestinal tract, heart, and kidney. Dose levels producing these effects were many times higher than any dose levels expected from exposure due to use. SODIUM CHLORIDE: Medical experience with sodium chloride has shown a strong association between elevated blood pressure and prolonged dietary overuse. Related effects could occur in the kidneys.

SIGNS AND SYMPTOMS OF EXPOSURE:

Solution and or solids may be visible on the skin and or eyes. Localized redness, warmth, and irritation consistent with mechanism of injury: abrasion, burn, hypertonic solution.

Inhalation (Breathing): Inhaling dust may cause irritation to upper respiratory tract (nose and throat). Nasal mucosal and oropharyngeal erythema.

Skin: Skin Irritation. Direct abrasion of skin from solid, erythema and burn from reaction with water. Prolonged contact and occlusion may cause more severe symptoms. Damage is localized to contact areas.

Eye: Eye Irritation. Direct abrasion of cornea from solid, erythema and burn from reaction with water, conjunctival swelling and cornea opacification from hypertonic solution and heat. Corneal eye pain, redness, acute corneal thickening or whitening.

Ingestion (Swallowing): Consumption of solids or hypertonic solutions causes nausea, vomiting, and increased thirst.

Interaction with Other Chemicals Which Enhance Toxicity: None known.

GHS HEALTH HAZARDS:

GHS: ACUTE TOXICITY - ORAL: Category 4 - Harmful if swallowed.

GHS: ACUTE TOXICITY - DERMAL: Not classified as acutely toxic for dermal exposure.

GHS: ACUTE TOXICITY - INHALATION: No data available. Not classified.

GHS: CONTACT HAZARD - EYE: Category 2B - Causes eye irritation

GHS: CONTACT HAZARD - SKIN: Category 2 - Causes skin irritation

GHS: CARCINOGENICITY:

Not classified as a carcinogen per GHS criteria. This product is not classified as a carcinogen by NTP, IARC, or OSHA.

MUTAGENIC DATA:

Not classified as a mutagen per GHS criteria. The data presented are for the following material: Calcium chloride (CaCl₂) - In vitro genetic toxicity studies were negative. The data presented are for the following material: Potassium chloride - In vitro genetic toxicity studies were positive. However, the relevance of this to humans is unknown. For the minor component(s): Sodium chloride - In vitro genetic toxicity studies were predominantly negative.

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DEVELOPMENTAL TOXICITY:

Not classified as a developmental or reproductive toxin per GHS criteria. For the major component(s): Did not cause birth defects or any other fetal effects in laboratory animals.

12. ECOLOGICAL INFORMATION

ECOTOXICITY DATA:

Aquatic Toxicity:

Material is practically non-toxic to aquatic organisms on an acute basis
(LC50/EC50/EL50/LL50 >100 mg/L in the most sensitive species tested)

Freshwater Fish Toxicity:

Calcium Chloride: LC50, bluegill (*Lepomis macrochirus*): 8,350 - 10,650 mg/l
Potassium Chloride: LC50, rainbow trout (*Oncorhynchus mykiss*), 96 h: 4,236 mg/l
Sodium Chloride: LC50, fathead minnow (*Pimephales promelas*): 10,610 mg/l

Invertebrate Toxicity:

Calcium Chloride: LC50, water flea *Daphnia magna*: 759 - 3,005 mg/l
Potassium Chloride: EC50, water flea *Daphnia magna*, 24 h, immobilization: 590 mg/l
LC50, water flea *Ceriodaphnia dubia*, 96 h: 3,470 mg/l
Sodium Chloride: LC50, water flea *Daphnia magna*: 4,571 mg/l

FATE AND TRANSPORT:

BIODEGRADATION: This material is inorganic and not subject to biodegradation

PERSISTENCE: Calcium chloride is believed not to persist in the environment because it is readily dissociated into calcium and chloride ions in water

Calcium chloride released into the environment is thus likely to be distributed into water in the form of calcium and chloride ions

Calcium ions may remain in soil by binding to soil particulate or by forming stable salts with other ions

Chloride ions are mobile and eventually drain into surface water

Both ions originally exist in nature, and their concentrations in surface water will depend on various factors, such as geological parameters, weathering, and human activities

BIOCONCENTRATION: No bioconcentration is expected because of the relatively high water solubility. Potential for mobility in soil is very high (Koc between 0 and 50). Partitioning from water to n-octanol is not applicable.

BIOACCUMULATIVE POTENTIAL: Calcium chloride and its dissociated forms (calcium and chloride ions) are ubiquitous in the environment. Calcium and chloride ions can also be found as constituents in organisms. Considering its dissociation properties, calcium chloride is not expected to accumulate in living organisms.

MOBILITY IN SOIL: Calcium chloride is not expected to be absorbed in soil due to its dissociation properties and high water solubility. It is expected to dissociate into calcium and chloride free ions or it may form stable inorganic or organic salts with other counter ions, leading to different fates between calcium and chloride ions in soil and water components. Calcium ions may bind to soil particulate or may form stable inorganic salts with sulfate and carbonate ions. The chloride ion is mobile in soil and eventually drains into surface water because it is readily dissolved in water.

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13. DISPOSAL CONSIDERATIONS

Waste from material:

Reuse or reprocess, if possible. All disposal practices must be in compliance with all Federal, State/Provincial and local laws and regulations. Regulations may vary in different locations. Report spills if applicable. Waste characterizations and compliance with applicable laws are the responsibility solely of the waste generator. AS YOUR SUPPLIER, WE HAVE NO CONTROL OVER THE MANAGEMENT PRACTICES OR MANUFACTURING PROCESSES OF PARTIES HANDLING OR USING THIS MATERIAL. THE INFORMATION PRESENTED HERE PERTAINS ONLY TO THE PRODUCT AS SHIPPED IN ITS INTENDED CONDITION AS DESCRIBED IN SDS SECTION: Composition Information. FOR UNUSED & UNCONTAMINATED PRODUCT, the preferred options include sending to a licensed, permitted: Landfill and waste water treatment system.

Container Management:

Dispose of container in accordance with applicable local, regional, national, and/or international regulations. Container rinsate must be disposed of in compliance with applicable regulations.

14. TRANSPORT INFORMATION

LAND TRANSPORT

U.S. DOT 49 CFR 172.101:

Status: Not regulated.

CANADIAN TRANSPORTATION OF DANGEROUS GOODS:

Status: Not regulated.

MARITIME TRANSPORT (IMO / IMDG) Not regulated

Status - IMO / IMDG: Not Regulated

15. REGULATORY INFORMATION

DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES

SDS No.: M48006

SDS Revision Date: 09-Jun-2015

U.S. REGULATIONS

OSHA REGULATORY STATUS:

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200)

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR 302.4):

Not regulated.

SARA EHS Chemical (40 CFR 355.30)

Not regulated

EPCRA SECTIONS 311/312 HAZARD CATEGORIES (40 CFR 370.10):

Acute Health Hazard

EPCRA SECTION 313 (40 CFR 372.65):

To the best of our knowledge, this product does not contain chemicals at levels which require reporting under this statute.

OSHA PROCESS SAFETY (PSM) (29 CFR 1910.119):

Not regulated

NATIONAL INVENTORY STATUS

U.S. INVENTORY STATUS: Toxic Substance Control Act (TSCA): All components are listed or exempt.

TSCA 12(b): This product is not subject to export notification.

Canadian Chemical Inventory: All components of this product are listed on either the DSL or the NDSL.

STATE REGULATIONS

California Proposition 65:

This product is not listed, but it may contain impurities/trace elements known to the State of California to cause cancer or reproductive toxicity as listed under Proposition 65 State Drinking Water and Toxic Enforcement Act.

WARNING: This product (when used in aqueous formulations with a chemical oxidizer such as ozone) may react to form calcium bromate, a chemical known to the State of California to cause cancer.

CANADIAN REGULATIONS

• This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations

WHMIS - Classifications of Substances:

• D2B - Poisonous and Infectious Material; Materials causing other toxic effects - Toxic material

DOWFLAKE™ XTRA 83-87% CALCIUM CHLORIDE FLAKES

SDS No.: M48006

SDS Revision Date: 09-Jun-2015

16. OTHER INFORMATION

Prepared by: OxyChem Corporate HESS - Product Stewardship

Rev. Date: 09-Jun-2015

Disclaimer:

We recommend that you use this product in a manner consistent with the listed use. If your intended use is not consistent with the stated use, please contact your sales or technical service representative.
This information is intended solely for the use of individuals trained in the NFPA and/or HMIS systems.

HMIS: (SCALE 0-4) (Rated using National Paint & Coatings Association HMIS: Rating Instructions, 2nd Edition)

Health Rating: 2

Flammability Rating: 0

Reactivity Rating: 0

NFPA 704 - Hazard Identification Ratings (SCALE 0-4)

Health Rating: 1

Flammability: 0

Reactivity Rating: 0

Reason for Revision:

- Emergency Overview was revised: SEE SECTION 2
- Modified Composition/Information on Ingredients: SEE SECTION 3
- Updated First Aid Measures: SEE SECTION 4
- Revised Handling and Storage Recommendations: SEE SECTION 7
- Revised Exposure Controls/Personal Protection information: SEE SECTION 8
- Toxicological Information has been revised: SEE SECTION 11
- Regulatory Information Changes: SEE SECTION 15

IMPORTANT:

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OSHA Standard 29 CFR 1910.1200 requires that information be provided to employees regarding the hazards of chemicals by means of a hazard communication program including labeling, safety data sheets, training and access to written records. We request that you, and it is your legal duty to, make all information in this Safety Data Sheet available to your employees

End of Safety Data Sheet

Material Safety Data Sheet

Granular Absorbent (#1003000)

☎ (312)321-1515, Information (800)424-9300, Emergency

1. PRODUCT IDENTIFICATION

MSDS Number: 1003000
Identity: Granular Absorbent
Issued: July 11, 2008
Chemical Name: Fullers Earth (attapulgite type) or montmorillonite or amorphous opaline silica

2. COMPOSITION

Component	CAS Number	Amount
Silica Hydrated (Amorphous Opaline Silica)	7631-86-9	90-100%
Fullers Earth	8031-18-3	80-90%
Montmorillonite	1302-78-9	90-93%
Quartz (crystalline silica)	14808-60-7	0-20% bulk

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

This product is a non-combustible, chemically inert mineral. This mineral sample contains a small amount of naturally-occurring crystalline silica as quartz. Prolonged overexposure to respirable crystalline silica may cause lung disease (silicosis). IARC, in Monograph 68, has concluded that crystalline silica inhaled in the form of quartz from occupational sources is carcinogenic to humans (Group 1); however, carcinogenicity was not detected in all industrial circumstances studied. Because applications and exposure data indicate that exposure to respirable quartz in this product with normal use is well below the OSHA Permissible Exposure Limit (PEL) and ACGIH Threshold Limit Value (TLV); and because the company is not aware of any scientific or medical data available indicating that exposure to dust from this product under conditions of normal use will cause silicosis or cancer; adverse effects would not be expected from normal use of this product.

HEALTH HAZARDS

INGESTION: No adverse effects expected with unused material.
INHALATION: Inhalation of excessive concentrations of dust may cause irritation of mucous membranes and upper respiratory tract.
EYE: Contact may cause mechanical irritation and possible injury.
SKIN: No adverse effects expected.
SENSITIZATION: No adverse effects expected.

CHRONIC/CARCINOGENICITY:

Inhalation of excessive concentrations of any dust, including this material, may lead to lung injury. This product contains crystalline silica. Excessive inhalation of respirable crystalline silica may cause silicosis, a progressive, disabling and fatal disease of the lung. Symptoms may include cough, shortness of breath, wheezing and reduced pulmonary function. The International Agency for Research on Cancer (IARC), in Monograph 68 has concluded that crystalline silica inhaled in the form of quartz or cristobalite, from occupational sources is carcinogenic to humans (Group 1).

However, in making the overall evaluation, the Working Group noted that carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs. The National Toxicology Program (NTP) classifies crystalline silica as a known carcinogen. Because applications and exposure data indicate that exposure to respirable quartz in this product with normal use is well below the OSHA Permissible Exposure Limit (PEL) and ACGIH Threshold Limit Value (TLV); and because the company is not aware of any scientific or medical data available indicating that exposure to dust from this product under conditions of normal use will cause silicosis or cancer; adverse effects would not be expected from normal use of this product.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:

None currently known.

4. FIRST AID MEASURES

EYE: Immediately flush eyes with cool running water, lifting upper and lower lids. If irritation persists or for foreign body in the eye, get immediate medical attention.

SKIN: None needed for normal use.

INGESTION: If used material is ingested, get medical attention due to possibility of chemical contamination. If large amount of unused material is swallowed, get immediate medical attention.

INHALATION: Remove to fresh air.

5. FIREFIGHTING MEASURES

FLASH POINT: This product is not combustible.

FLAMMABLE LIMITS Not applicable

EXTINGUISHING MEDIA:
Use media that is appropriate for surrounding fire.

UNUSUAL FIRE OR EXPLOSION HAZARDS:
None

SPECIAL FIREFIGHTING INSTRUCTIONS
None required.

HAZARDOUS COMBUSTION PRODUCTS:
None

6. ACCIDENTAL RELEASE MEASURES

Sweep up and collect for re-use or disposal

7. HANDLING AND STORAGE

HANDLING: Avoid breathing dust. If clothing becomes dusty, launder before re-use.

STORAGE: Store in a dry area.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

EXPOSURE GUIDELINES:

Component	Exposure Limit
Silica Hydrated (Amorphous Opaline Silica)	PEL - 5mg/m ³ TWA (respirable dust) TLV - 3mg/m ³ TWA (respirable fraction) TLV - 10mg/m ³ TWA (inhalable dust)
Fullers Earth	PEL - 5 mg/m ³ TWA (respirable fraction) TLV - 3 mg/m ³ TWA (respirable fraction) TLV - 10 mg/m ³ TWA (inhalable dust)
Montmorillonite	PEL - 5 mg/m ³ TWA (respirable fraction) TLV - 3 mg/m ³ TWA (respirable fraction) TLV - 10 mg/m ³ TWA (inhalable dust)
Quartz (crystalline silica)	PEL - 10 mg/m ³ /%SiO ₂ +2 TWA TLV - 0.025 mg/m ³ TWA

PEL- OSHA Permissible Exposure Limit. TLV- American Conference of Governmental Industrial Hygienists (ACGIH) Threshold Limit Value. TWA- 8 hour Weighted Average. STEL-Short Term Exposure Limit.

ENGINEERING CONTROLS:

For operations where the exposure limit may be exceeded, local exhaust ventilation is recommended.

RESPIRATORY PROTECTION:

For operations where the exposure limit may be exceeded, a NIOSH/MSHA approved high efficiency particulate respirator is recommended.

SKIN PROTECTION: None required for normal use.

EYE PROTECTION: Safety glasses or goggles recommended.

OTHER: None required for normal use.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE AND ODOR:

Gray to tan (or red) granules, no odor

PHYSICAL STATE: Solid

BOILING POINT: Not applicable

VAPOR PRESSURE: Not applicable

VAPOR DENSITY: Not applicable

Material Safety Data Sheet

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SOLUBILITY IN WATER:

Insoluble

SPECIFIC GRAVITY: 2.2

pH: Not applicable

MELTING POINT: Not applicable

OCTANOL/WATER COEFFICIENT:

Not available

10. STABILITY AND REACTIVITY

STABILITY: Stable

INCOMPATIBILITY: Physical contact between this material and turpentine, hydrofluoric acid, vegetable oil or other unsaturated organic compounds (such as fish oil) may generate heat and/or fire. Do not use this material with these compounds.

HAZARDOUS DECOMPOSITION PRODUCTS

None

HAZARDOUS POLYMERIZATION:

Will not occur.

11. TOXICOLOGICAL INFORMATION

No data available.

12. ECOLOGICAL INFORMATION

No data available.

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal environmental regulations. Unused material is suitable for disposal in sanitary landfill. Used material may be subject to regulation, depending on the nature of the material absorbed. Check with appropriate regulatory authority for used material containing hazardous waste.

14. TRANSPORT INFORMATION

PROPER SHIPPING NAME:

Not regulated

UN NUMBER: Not applicable

HAZARD CLASS/PACKING GROUP:

Not applicable

LABELS REQUIRED: None

15. REGULATORY INFORMATION

CERCLA/SUPERFUND None

Material Safety Data Sheet

Granular Absorbent (#1003000)

☎ (312)321-1515, Information (800)424-9300, Emergency

SARA HAZARD CATEGORY (311/312):

Chronic Health

SARA 313: None

TSCA: All of the components of this product are listed on the EPA TSCA Inventory or exempt from notification requirements.

EINECS: All of the components of this product are listed on the EINECS Inventory or exempt from notification requirements

EEC R&S Phrases: Not Classified as Dangerous under EEC Labeling Regulations

JAPAN MITI: All of the components of this product are existing chemical substances as defined in the Chemical Substances Control Law.

AICS: All of the components of this product are listed on the AICS Inventory or exempt from notification requirements

CANADIAN DSL: All of the components of this product are listed on the Canadian Domestic Substance List or exempt from notification requirements.

CA PROPOSITION 65: This product contains respirable crystalline silica which is known to the State of California to cause cancer.

16. OTHER INFORMATION

NFPA RATING: Health=1 Fire=0 Reactivity=0

HMIS RATING: Health=1 * Fire=0 Reactivity=0

The information in this data sheet is believed to be accurate. However, each purchaser should make its own test to determine the suitability of the product for its purposes. OIL-DRI CORPORATION OF AMERICA MAKES NO WARRANTY, EXPRESSED OR IMPLIED, WITH RESPECT TO THE PRODUCT and assumes no responsibility for any risk or liability arising from the use of the information or the product. Statements about the product should not be construed as recommendations to use the product in infringement of any patent.

APPENDIX. ASSOCIATED PRODUCTS

This MSDS applies to the following products:

Absorbs It	Oil Dri Regular Absorbent Plain
All Purpose 18/40	Oil Dri U.S. Special
All Purpose 18/40 2426#	Oil Zorb
Associates Premium	Oil Zorb Premium Abs
Calcine 5/18 Red	Oil-Dri Automotive Premium 4/10
Concentrate	Oil-Dri Premium Poly Abs
Concept Absorbent	Pvl Heavy Duty Generic
DOC Private	Quick Sorb Pail
Dryden Generic	SND Standard GB
Exclusiva	Super Clean A.P. 18/40
Flor Dri GA Generic	White Absorbent
GA A.P. Private Label	White Absorbent-Pvl
Ga Generic	
Grey Calcined 5/30	
Ground Clay 4/20 GW	
Ground Clay 6/30 GB	
Industrial Quick Sorb	
Instant Dri Blue	
Instant Dri Red	
Japanese Floor Abs.	
OD Premium Absorb	
OD Premium Absorbent	
O-D Sams Premium Poly	
Off Shore Generic	
Oil Dri 12/24 LVM	
Oil Dri Allpurpose	
Oil Dri Allpurpose 33 1/3	
Oil Dri Industrial	
Oil Dri Industrial Absorbent	
Oil Dri Premium Poly Abs	

MATERIAL SAFETY DATA SHEET

I. Material Identification And Use

Product Name: Dolomite, Indiana Ag Lime CAS#: 16389-88-1
 Common Names: Carbonate of Calcium and Magnesium, Dolomitic Limestone
 Chemical Name: $\text{CaCO}_3\text{MgCO}_3$
 Product Use: Used in the aggregate, metallurgical and agricultural industries
 Product may contain respirable silica particles. CAS#: 14808-60-7

II. Ingredients And Recommended Occupational Exposure Limits

Composition	Typical % Weight	Exposure Limits	
		OSHA PEL	ACGIH TLV
Mixture of Magnesium and Calcium Carbonate	97-99	15mg/m ³ Total Dust 5mg/m ³ Respirable Dust	10mg/m ³ Total Dust 5mg/m ³ Respirable Dust
Silica (Quartz)	0.1-2.0	0.1mg/m ³ TWA for Respirable Dust	0.1mg/m ³ TWA for Respirable Dust
Other Carbonate Minerals	<1.0		

III. Physical Data

Boiling Point: 1652°F Specific Gravity: 2.7-2.95
 Vapor Pressure: N/A Melting Point: N/A
 Vapor Density: N/A Evaporation Rate: N/A
 Stability: Stable Solubility in water: Negligible
 Appearance: White to light gray – odorless solid

IV. Fire And Explosion Hazard Data

Flashpoint: N/A Flammable Limits: N/A
 Extinguishing Media: N/A LEL: N/A UEL: N/A
 Unusual Fire and Explosion Hazards: Limestone is neither a fire nor explosion hazard.

V. Reactivity Data

Stability: Stable Conditions to Avoid: None
 Hazardous Decomposition: None Hazardous Polymerization: None
 Incompatibles: Strong Acids

VI. Health Hazard Information

Dolomite is essentially a non-toxic material. The refined form of magnesium carbonate is added to foods as a mild alkali. It is also used in pharmaceuticals and cosmetics. Extremely high concentrations of dolomite dust are self-limiting due to the nuisance conditions it may create, causing coughing, sneezing and nasal irritation. Dolomite may contain small amounts of respirable silica particles. Silica is capable of causing silicosis if inhaled in high enough concentrations over an extended period of time. Exposure to excessive concentrations may aggravate pre-existing respiratory conditions.

Carcinogenicity: None Identified

Routes of Entry: Inhalation? YES Skin? NO Ingestion? YES

Emergency and First Aid Procedures:

Eyes – Not anticipated to pose an acute or significant hazard. If irritation occurs, flush eye with large amounts water.

Inhalation – Not anticipated to pose an acute or significant inhalation hazard. If irritation occurs, remove to an area of fresh air.

Ingestion – Not considered and ingestion hazard.

Skin Contact – Not anticipated to pose an acute or significant hazard. If skin
Skin is previously irritated wash area with plenty of soap and water for at least
15 minutes.

VII. Precautions For Safe Handling And Use

Respirable dust may be generated during processing, handling, and storage.

Spillage, where dust may be generated, may overexpose cleanup personnel to respirable dust.

Wetting of the material and/or use of respiratory protective equipment may be necessary. Avoid dry sweeping.

Waste Disposal Method: Dispose of material in accordance with Federal, State, and Local regulations.

VIII. Control Measures

Ventilation: Local exhaust or general ventilation adequate to maintain exposures below appropriate exposure limits.

Eye and Skin Protection: Wear long sleeve shirt and pants, Safety goggles and proper gloves.

Respiratory Protection: A respirator with dust/mist filter is recommended. If airborne concentration exceeds TLV, a self-contained breathing apparatus is advised.

UPDATED: August 28, 2002

Material Service Corporation
Safety Department

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SAFETY DATA SHEET

Issuing Date 07-May-2013

Revision Date 08-Oct-2013

Revision Number 1

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier 009

Product Name DRYLOK FAST PLUG

Other means of identification

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Cement

Uses advised against No information available

Details of the supplier of the safety data sheet

Supplier Address

United Gilsonite Laboratories
1396 Jefferson Ave.
Dunmore
PA
18509
US
Phone:570-344-1202
Fax:570-969-7634
Email:sales@ugl.com
Contact Phone:570-344-1202

Emergency telephone number (800) 424-9300 Chemtrec

2. HAZARDS IDENTIFICATION

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200).

Acute toxicity - Oral	Category 4
Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 1
Skin sensitization	Category 1
Carcinogenicity	Category 1A
Specific target organ toxicity (single exposure)	Category 3
Specific target organ toxicity (repeated exposure)	Category 2

GHS Label elements, including precautionary statements

Emergency Overview

Signal word

Danger

Hazard statements

Harmful if swallowed
Causes skin irritation
Causes serious eye damage
May cause an allergic skin reaction
May cause cancer
May cause respiratory irritation. May cause drowsiness or dizziness
May cause damage to organs through prolonged or repeated exposure



Appearance Gray

Physical State Powder Solid

Odor None

Precautionary Statements - Prevention

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Use personal protective equipment as required
 Wash face, hands and any exposed skin thoroughly after handling
 Do not eat, drink or smoke when using this product
 Contaminated work clothing should not be allowed out of the workplace
 Use only outdoors or in a well-ventilated area
 Do not breathe dust/fume/gas/mist/vapors/spray

Precautionary Statements - Response

IF exposed or concerned: Get medical advice/attention
 Specific treatment (see supplemental first aid instructions on this label)

Eyes

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 Immediately call a POISON CENTER or doctor/physician

Skin

IF ON SKIN: Wash with plenty of soap and water
 Take off contaminated clothing and wash before reuse
 If skin irritation or rash occurs: Get medical advice/attention

Inhalation

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing

Ingestion

IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell
 Rinse mouth

Precautionary Statements - Storage

Store locked up
 Store in a well-ventilated place. Keep container tightly closed

Precautionary Statements - Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

Not Applicable

Other information

- Repeated or prolonged skin contact may cause allergic reactions with susceptible persons.

Interactions with Other Chemicals No information available.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade Secret
Quartz	14808-60-7	40 - 70	*
Portland cement	65997-15-1	40 - 70	*
Calcium hydroxide	1305-62-0	5 - 10	*

* The exact percentage (concentration) of composition has been withheld as a trade secret

4. FIRST AID MEASURES

First aid measures

General Advice	Show this safety data sheet to the doctor in attendance. Immediate medical attention is required.
Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Keep eye wide open while rinsing. Remove contact lenses, if applicable, and continue flushing. Do not rub affected area. Seek immediate medical attention/advice.
Skin Contact	Wash off immediately with soap and plenty of water for at least 15 minutes. May cause an allergic skin reaction If symptoms persist, call a physician. Do not remove clothing if adhering to skin. If skin has bonded to clothing or other skin NEVER pull the area apart. Allow acetone or warm water to penetrate the bond and gently attempt to move bonded areas without pulling the skin away from bonded area. Consult a physician if necessary.
Inhalation	Move to fresh air. Get medical attention immediately if symptoms occur.
Ingestion	Rinse mouth. Clean mouth with water and afterwards drink plenty of water. Never give anything by mouth to an unconscious person. Do NOT induce vomiting. Consult a physician.
Protection of First-aiders	Avoid contact with skin, eyes and clothing. Use personal protective equipment. For personal protection see Section 8.

Most important symptoms and effects, both acute and delayed

Most Important Symptoms/Effects Burning. Itching. Rashes. Hives. Burning sensation.

Indication of any immediate medical attention and special treatment needed

Notes to Physician May cause sensitization of susceptible persons. Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media

CAUTION: Use of water spray when fighting fire may be inefficient.

Specific Hazards Arising from the Chemical

Product is or contains a sensitizer. May cause sensitization by skin contact.

Uniform Fire Code	Sensitizer: Solid Toxic: Solid COMBUSTIBLE DUST/POWDER
--------------------------	--

Explosion Data

Sensitivity to Mechanical Impact None

Sensitivity to Static Discharge None

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Avoid contact with skin, eyes and clothing. Ensure adequate ventilation. Use personal protective equipment. Evacuate personnel to safe areas.

Other Information Refer to protective measures listed in Sections 7 and 8.

Environmental precautions

Environmental Precautions Prevent further leakage or spillage if safe to do so.

Methods and material for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Pick up and transfer to properly labeled containers.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin, eyes and clothing. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use.

Conditions for safe storage, including any incompatibilities

Storage Keep containers tightly closed in a dry, cool and well-ventilated place. Store locked up. Keep out of the reach of children.

Incompatible Products None known based on information supplied.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control parameters

Exposure Guidelines

Chemical Name	ACGIH TLV	OSHA PEL	NIOSH IDLH
Quartz 14808-60-7	TWA: 0.025 mg/m ³ respirable fraction	TWA: 0.1 mg/m ³ (vacated)	IDLH: 50 mg/m ³ respirable dust TWA: 0.05 mg/m ³ respirable dust
Portland cement 65997-15-1	TWA: 1 mg/m ³ particulate matter containing no asbestos and <1% crystalline silica, respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction TWA: 50 mppcf <1% Crystalline silica	IDLH: 5000 mg/m ³ TWA: 10 mg/m ³ total dust TWA: 5 mg/m ³ respirable dust
Calcium hydroxide 1305-62-0	TWA: 5 mg/m ³	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 5 mg/m ³ not in effect as a result of reconsideration	TWA: 5 mg/m ³

ACGIH TLV: American Conference of Governmental Industrial Hygienists - Threshold Limit Value. OSHA PEL: Occupational Safety and Health Administration - Permissible Exposure Limits. NIOSH IDLH: Immediately Dangerous to Life or Health.

Other Exposure Guidelines Vacated limits revoked by the Court of Appeals decision in AFL-CIO v. OSHA, 965 F.2d 962 (11th Cir., 1992).

Appropriate engineering controls

Engineering Measures
Showers
Eyewash stations
Ventilation systems

Individual protection measures, such as personal protective equipment

Eye/Face Protection Tightly fitting safety goggles.

Skin and Body Protection Wear protective gloves/clothing. Long sleeved clothing. Impervious gloves.

Respiratory Protection If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

Hygiene Measures Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Avoid contact with skin, eyes and clothing. Wear suitable gloves and eye/face protection. Wash hands before breaks and immediately after handling the product.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical and Chemical Properties

Physical State	Powder Solid		
Appearance	Gray	Odor	None
Color	No information available	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks/ Method</u>
pH		None known
Melting/freezing point	No data available	None known
Boiling Point/Range		None known
Flash Point		None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
Upper flammability limit	No data available	
Lower flammability limit	No data available	
Vapor pressure	No data available	None known
Vapor density	No data available	None known
Specific Gravity	No data available	None known
Water Solubility	Dispersable	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition temperature	No data available	None known
Decomposition temperature	No data available	None known
Kinematic viscosity	No data available	None known
Dynamic viscosity	No data available	None known
Explosive Properties	No data available	
Oxidizing Properties	No data available	

Other Information

Softening Point	No data available
VOC Content (%)	No data available

10. STABILITY AND REACTIVITY

Reactivity

No data available.

Chemical stability

Stable under recommended storage conditions.

Possibility of Hazardous Reactions

None under normal processing.

Conditions to avoid

None known based on information supplied.

Incompatible materials

None known based on information supplied.

Hazardous Decomposition Products

None known based on information supplied.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	There is no data available for this product. May cause irritation of respiratory tract.
Eye Contact	There is no data available for this product. Expected to be an irritant based on components. May cause redness, itching, and pain. Severely irritating to eyes. Causes serious eye damage. May cause burns. May cause irreversible damage to eyes.
Skin Contact	There is no data available for this product. Expected to be an irritant based on components. Irritating to skin. Prolonged contact may cause redness and irritation.
Ingestion	There is no data available for this product. Ingestion may cause irritation to mucous membranes. Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea. May be harmful if swallowed. (based on components)

Chemical Name	LD50 Oral	LD50 Dermal	LC50 Inhalation
Quartz 14808-60-7	= 500 mg/kg (Rat)	-	-
Calcium hydroxide 1305-62-0	= 7340 mg/kg (Rat)	-	-

Information on toxicological effects

Symptoms	Redness of the skin. May cause redness and tearing of the eyes. Burning. May cause blindness. Itching. Rashes Hives
-----------------	---

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	The table below indicates whether each agency has listed any ingredient as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
Quartz 14808-60-7	A2	Group 1	Known	X

ACGIH: (American Conference of Governmental Industrial Hygienists)

A2 - Suspected Human Carcinogen

IARC: (International Agency for Research on Cancer)

Group 1 - Carcinogenic to Humans

NTP: (National Toxicity Program)

Known - Known Carcinogen

OSHA: (Occupational Safety & Health Administration)

X - Present

Reproductive Toxicity
STOT - single exposure

No information available

Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122), this product has been determined to cause systemic target organ toxicity from acute exposure. (STOT SE). If this product is a mixture, the classification is not based on toxicology studies for this product, but is based solely on toxicology studies for ingredients found within this product. Detailed substance and/or ingredient information may be provided in other sections of this SDS. Target organs effects listed in this document may result from a single overexposure to this product

STOT - repeated exposure

Causes damage to organs through prolonged or repeated exposure. Based on classification criteria from the 2012 OSHA Hazard Communication Standard (29 CFR 1910.122), this product has been determined to cause systemic target organ toxicity from chronic or repeated exposure. (STOT RE). If this product is a mixture, the classification is not based on toxicology studies for this product, but is based solely on toxicology studies for ingredients found within this product. More detailed substance and/or ingredient information may be provided in the other sections of this SDS

Chronic Toxicity

Contains a known or suspected carcinogen. Effects from this product caused by acute exposure may cause permanent damage to target organs and/or may cause chronic conditions. Avoid repeated exposure. Prolonged exposure may cause chronic effects.

Target Organ Effects
Aspiration Hazard

Respiratory system. Eyes. Skin. Gastrointestinal tract (GI). Lungs. Kidney.
No information available.

Numerical measures of toxicity Product Information

The following values are calculated based on chapter 3.1 of the GHS document

ATEmix (oral)

1,239.00 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity

Harmful to aquatic life

Persistence and Degradability

No information available.

Bioaccumulation

No information available.

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Waste Disposal Methods

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Do not re-use empty containers.

California Hazardous Waste Codes 181

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
Calcium hydroxide 1305-62-0	Corrosive

14. TRANSPORT INFORMATION

DOT
Proper Shipping Name NOT REGULATED
Hazard Class NON REGULATED
 N/A

TDG Not regulated

MEX Not regulated

ICAO Not regulated

IATA
Proper Shipping Name Not regulated
Hazard Class NON REGULATED
 N/A

IMDG/IMO
Hazard Class Not regulated
 N/A

RID Not regulated

ADR Not regulated

ADN Not regulated

15. REGULATORY INFORMATION

International Inventories

TSCA Complies
 DSL All components are listed either on the DSL or NDSL.

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory
DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

SARA 313

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	Yes
Chronic Health Hazard	Yes
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product contains the following Proposition 65 chemicals:

Chemical Name	California Prop. 65
Quartz - 14808-60-7	Carcinogen

U.S. State Right-to-Know Regulations

Chemical Name	New Jersey	Massachusetts	Pennsylvania
Calcium hydroxide 1305-62-0	X	X	X
Quartz 14808-60-7	X	X	X
Portland cement 65997-15-1	X	X	X

International Regulations

Mexico - Grade

Slight risk, Grade 1

Chemical Name	Carcinogen Status	Exposure Limits
Quartz		Mexico: TWA= 0.1 mg/m ³
Portland cement		Mexico: TWA 10 mg/m ³ Mexico: STEL 20 mg/m ³
Calcium hydroxide		Mexico: TWA 5 mg/m ³

Canada

WHMIS Hazard Class

D2A Very toxic materials



16. OTHER INFORMATION

16. OTHER INFORMATION

NFPA	Health Hazard 3	Flammability 0	Instability 0	Physical and Chemical Hazards -
HMIS	Health Hazard 3 *	Flammability 0	Physical Hazard 0	Personal Protection X
<i>Chronic Hazard Star Legend</i>	<i>*Indicates a chronic health hazard.</i>			

Prepared By Product Stewardship
23 British American Blvd.
Latham, NY 12110
1-800-572-6501

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Revision Note No information available

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End of Safety Data Sheet



Safety Data Sheet

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SECTION 1: Identification

1.1. Product identifier

3M™ Drywall Corner Bead Spray Adhesive 61

Product Identification Numbers

62-4452-4930-3, 62-4452-4935-2, 62-4452-4938-6, 70-0714-7418-6

1.2. Recommended use and restrictions on use

Recommended use

Adhesive aerosol

1.3. Supplier's details

MANUFACTURER:	3M
DIVISION:	Construction and Home Improvement Markets
ADDRESS:	3M Center, St. Paul, MN 55144-1000, USA
Telephone:	1-888-3M HELPS (1-888-364-3577)

1.4. Emergency telephone number

1-800-364-3577 or (651) 737-6501 (24 hours)

SECTION 2: Hazard identification

The label elements below were prepared in accordance with OSHA Hazard Communication Standard, 29 CFR 1910.1200. This information may be different from the actual product label information for labels regulated by other agencies.

2.1. Hazard classification

Flammable Aerosol: Category 1.
Gas Under Pressure: Liquefied gas.
Serious Eye Damage/Irritation: Category 2A.
Skin Corrosion/Irritation: Category 2.
Reproductive Toxicity: Category 2.
Simple Asphyxiant.
Specific Target Organ Toxicity (single exposure): Category 1.
Specific Target Organ Toxicity (central nervous system): Category 3.

2.2. Label elements

Signal word

Danger

Symbols

Flame | Gas cylinder | Exclamation mark | Health Hazard |

Pictograms



Hazard Statements

Extremely flammable aerosol.

Contains gas under pressure; may explode if heated.

Causes serious eye irritation.

Causes skin irritation.

May cause drowsiness or dizziness.

Suspected of damaging fertility or the unborn child.

May displace oxygen and cause rapid suffocation.

Causes damage to organs:
cardiovascular system |

Precautionary Statements

General:

Keep out of reach of children.

Prevention:

Obtain special instructions before use.

Do not handle until all safety precautions have been read and understood.

Keep away from heat/sparks/open flames/hot surfaces. - No smoking.

Do not spray on an open flame or other ignition source.

Pressurized container: Do not pierce or burn, even after use.

Do not breathe dust/fume/gas/mist/vapors/spray.

Use only outdoors or in a well-ventilated area.

Wear protective gloves and eye/face protection.

Do not eat, drink or smoke when using this product.

Wash thoroughly after handling.

Response:

IF INHALED: Remove person to fresh air and keep comfortable for breathing.

IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
Continue rinsing.

If eye irritation persists: Get medical advice/attention.

IF ON SKIN: Wash with plenty of soap and water.

If skin irritation occurs: Get medical advice/attention.

Take off contaminated clothing and wash it before reuse.

IF exposed or concerned: Get medical advice/attention.

Specific treatment (see Notes to Physician on this label).

Storage:

Protect from sunlight. Store in a well-ventilated place.

Protect from sunlight. Do not expose to temperatures exceeding 50C/122F.

Store in a well-ventilated place. Keep container tightly closed.

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable local/regional/national/international regulations.

Notes to Physician:

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

2.3. Hazards not otherwise classified

None.

SECTION 3: Composition/information on ingredients

Ingredient	C.A.S. No.	% by Wt
Propane	74-98-6	15 - 40 Trade Secret *
Non-volatile components - N.J.T.S. Reg No. 04499600-6346P	Trade Secret*	15 - 40 Trade Secret *
Acetone	67-64-1	10 - 30 Trade Secret *
Cyclohexane	110-82-7	10 - 30 Trade Secret *
Petroleum Distillates	64742-49-0	10 - 30 Trade Secret *
Hexane	110-54-3	< 0.5 Trade Secret *

*The specific chemical identity and/or exact percentage (concentration) of this composition has been withheld as a trade secret.

SECTION 4: First aid measures

4.1. Description of first aid measures

Inhalation:

Remove person to fresh air. Get medical attention.

Skin Contact:

Immediately wash with soap and water. Remove contaminated clothing and wash before reuse. If signs/symptoms develop, get medical attention.

Eye Contact:

Immediately flush with large amounts of water. Remove contact lenses if easy to do. Continue rinsing. Get medical attention.

If Swallowed:

Rinse mouth. If you feel unwell, get medical attention.

4.2. Most important symptoms and effects, both acute and delayed

See Section 11.1. Information on toxicological effects.

4.3. Indication of any immediate medical attention and special treatment required

Exposure may increase myocardial irritability. Do not administer sympathomimetic drugs unless absolutely necessary.

SECTION 5: Fire-fighting measures

5.1. Suitable extinguishing media

Use a fire fighting agent suitable for the surrounding fire.

5.2. Special hazards arising from the substance or mixture

Closed containers exposed to heat from fire may build pressure and explode.

Hazardous Decomposition or By-Products**Substance**

Hydrocarbons
Carbon monoxide
Carbon dioxide

Condition

During Combustion
During Combustion
During Combustion

5.3. Special protective actions for fire-fighters

No special protective actions for fire-fighters are anticipated.

SECTION 6: Accidental release measures**6.1. Personal precautions, protective equipment and emergency procedures**

Evacuate area. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Use only non-sparking tools. Ventilate the area with fresh air. For large spill, or spills in confined spaces, provide mechanical ventilation to disperse or exhaust vapors, in accordance with good industrial hygiene practice. Warning! A motor could be an ignition source and could cause flammable gases or vapors in the spill area to burn or explode. Refer to other sections of this SDS for information regarding physical and health hazards, respiratory protection, ventilation, and personal protective equipment.

6.2. Environmental precautions

Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

If possible, seal leaking container. Place leaking containers in a well-ventilated area, preferably an operating exhaust hood, or if necessary outdoors on an impermeable surface until appropriate packaging for the leaking container or its contents is available. Close cylinder. Collect as much of the spilled material as possible using non-sparking tools. Place in a metal container approved for transportation by appropriate authorities. Clean up residue with an appropriate solvent selected by a qualified and authorized person. Ventilate the area with fresh air. Read and follow safety precautions on the solvent label and SDS. Dispose of collected material as soon as possible.

SECTION 7: Handling and storage**7.1. Precautions for safe handling**

Do not use in a confined area with minimal air exchange. Keep out of reach of children. Do not handle until all safety precautions have been read and understood. Keep away from heat/sparks/open flames/hot surfaces. - No smoking. Do not spray on an open flame or other ignition source. Do not pierce or burn, even after use. Do not breathe dust/fume/gas/mist/vapors/spray. Do not get in eyes, on skin, or on clothing. Do not eat, drink or smoke when using this product. Wash thoroughly after handling. Avoid release to the environment. Avoid contact with oxidizing agents (eg. chlorine, chromic acid etc.) Use personal protective equipment (gloves, respirators, etc.) as required.

7.2. Conditions for safe storage including any incompatibilities

Store in a well-ventilated place. Keep container tightly closed. Protect from sunlight. Do not expose to temperatures exceeding 50C/122F. Protect from sunlight. Store in a well-ventilated place. Store away from acids. Store away from oxidizing agents.

SECTION 8: Exposure controls/personal protection**8.1. Control parameters****Occupational exposure limits**

If a component is disclosed in section 3 but does not appear in the table below, an occupational exposure limit is not available for the component.

Ingredient	C.A.S. No.	Agency	Limit type	Additional Comments
Hexane	110-54-3	ACGIH	TWA:50 ppm	Skin Notation
Hexane	110-54-3	OSHA	TWA:1800 mg/m3(500 ppm)	
Cyclohexane	110-82-7	ACGIH	TWA:100 ppm	
Cyclohexane	110-82-7	OSHA	TWA:1050 mg/m3(300 ppm)	
Petroleum Distillates	64742-49-0	CMRG	TWA:50 ppm	
Acetone	67-64-1	ACGIH	TWA:250 ppm;STEL:500 ppm	A4: Not class. as human carcin
Acetone	67-64-1	OSHA	TWA:2400 mg/m3(1000 ppm)	
Propane	74-98-6	ACGIH	Limit value not established:	
Propane	74-98-6	OSHA	TWA:1800 mg/m3(1000 ppm)	

ACGIH : American Conference of Governmental Industrial Hygienists

AIHA : American Industrial Hygiene Association

CMRG : Chemical Manufacturer's Recommended Guidelines

OSHA : United States Department of Labor - Occupational Safety and Health Administration

TWA: Time-Weighted-Average

STEL: Short Term Exposure Limit

CEIL: Ceiling

8.2. Exposure controls

8.2.1. Engineering controls

Do not remain in area where available oxygen may be reduced. Use general dilution ventilation and/or local exhaust ventilation to control airborne exposures to below relevant Exposure Limits and/or control dust/fume/gas/mist/vapors/spray. If ventilation is not adequate, use respiratory protection equipment.

8.2.2. Personal protective equipment (PPE)

Eye/face protection

Select and use eye/face protection to prevent contact based on the results of an exposure assessment. The following eye/face protection(s) are recommended:

Indirect Vented Goggles

Skin/hand protection

Select and use gloves and/or protective clothing approved to relevant local standards to prevent skin contact based on the results of an exposure assessment. Selection should be based on use factors such as exposure levels, concentration of the substance or mixture, frequency and duration, physical challenges such as temperature extremes, and other use conditions. Consult with your glove and/or protective clothing manufacturer for selection of appropriate compatible gloves/protective clothing.

Gloves made from the following material(s) are recommended: Nitrile Rubber

Respiratory protection

An exposure assessment may be needed to decide if a respirator is required. If a respirator is needed, use respirators as part of a full respiratory protection program. Based on the results of the exposure assessment, select from the following respirator type(s) to reduce inhalation exposure:

Half facepiece or full facepiece air-purifying respirator suitable for organic vapors

Half facepiece or full facepiece supplied-air respirator

For questions about suitability for a specific application, consult with your respirator manufacturer.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

General Physical Form:

Gas

Specific Physical Form:	Aerosol
Odor, Color, Grade:	Pink, sweet/fruity odor.
Odor threshold	<i>No Data Available</i>
pH	<i>Not Applicable</i>
Melting point	<i>Not Applicable</i>
Boiling Point	<i>Not Applicable</i>
Flash Point	-42 °F [<i>Test Method:</i> Closed Cup]
Evaporation rate	1.9 [<i>Ref Std:</i> ETHER=1]
Flammability (solid, gas)	Flammable Aerosol: Category 1.
Flammable Limits(LEL)	1.1 % volume
Flammable Limits(UEL)	12.8 % volume
Vapor Pressure	<i>Not Applicable</i>
Vapor Density	2.97 [<i>Ref Std:</i> AIR=1]
Density	0.726 g/ml
Specific Gravity	0.726 [<i>Ref Std:</i> WATER=1]
Solubility in Water	Nil
Solubility- non-water	<i>No Data Available</i>
Partition coefficient: n-octanol/ water	<i>No Data Available</i>
Autoignition temperature	<i>No Data Available</i>
Decomposition temperature	<i>Not Applicable</i>
Viscosity	<i>Not Applicable</i>
Hazardous Air Pollutants	<=.4 % weight [<i>Test Method:</i> Calculated]
Volatile Organic Compounds	<i>No Data Available</i>
Percent volatile	70 - 80 % weight
VOC Less H2O & Exempt Solvents	<i>No Data Available</i>

SECTION 10: Stability and reactivity

10.1. Reactivity

This material may be reactive with certain agents under certain conditions - see the remaining headings in this section.

10.2. Chemical stability

Stable.

10.3. Possibility of hazardous reactions

Hazardous polymerization will not occur.

10.4. Conditions to avoid

Heat

Sparks and/or flames

10.5. Incompatible materials

Not determined

10.6. Hazardous decomposition products

Substance

None known.

Condition

Refer to section 5.2 for hazardous decomposition products during combustion.

SECTION 11: Toxicological information

The information below may not be consistent with the material classification in Section 2 if specific ingredient

classifications are mandated by a competent authority. In addition, toxicological data on ingredients may not be reflected in the material classification and/or the signs and symptoms of exposure, because an ingredient may be present below the threshold for labeling, an ingredient may not be available for exposure, or the data may not be relevant to the material as a whole.

11.1. Information on Toxicological effects

Signs and Symptoms of Exposure

Based on test data and/or information on the components, this material may produce the following health effects:

Inhalation:

Intentional concentration and inhalation may be harmful or fatal.

Simple Asphyxiation: Signs/symptoms may include increased heart rate, rapid respirations, drowsiness, headache, incoordination, altered judgement, nausea, vomiting, lethargy, seizures, coma, and may be fatal.

Respiratory Tract Irritation: Signs/symptoms may include cough, sneezing, nasal discharge, headache, hoarseness, and nose and throat pain.

May cause additional health effects (see below).

Skin Contact:

Skin Irritation: Signs/symptoms may include localized redness, swelling, itching, dryness, cracking, blistering, and pain.

Eye Contact:

Severe Eye Irritation: Signs/symptoms may include significant redness, swelling, pain, tearing, cloudy appearance of the cornea, and impaired vision.

Ingestion:

Gastrointestinal Irritation: Signs/symptoms may include abdominal pain, stomach upset, nausea, vomiting and diarrhea.

May cause additional health effects (see below).

Additional Health Effects:

Single exposure may cause target organ effects:

Central Nervous System (CNS) Depression: Signs/symptoms may include headache, dizziness, drowsiness, incoordination, nausea, slowed reaction time, slurred speech, giddiness, and unconsciousness.

Single exposure, above recommended guidelines, may cause:

Cardiac Sensitization: Signs/symptoms may include irregular heartbeat (arrhythmia), faintness, chest pain, and may be fatal.

Reproductive/Developmental Toxicity:

Contains a chemical or chemicals which can cause birth defects or other reproductive harm.

Toxicological Data

If a component is disclosed in section 3 but does not appear in a table below, either no data are available for that endpoint or the data are not sufficient for classification.

Acute Toxicity

Name	Route	Species	Value
Overall product	Dermal		No data available; calculated ATE > 5,000 mg/kg
Overall product	Inhalation-Vapor(4 hr)		No data available; calculated ATE > 50 mg/l
Overall product	Ingestion		No data available; calculated ATE > 5,000 mg/kg

Propane	Inhalation-Gas (4 hours)	Rat	LC50 > 200,000 ppm
Acetone	Dermal	Rabbit	LD50 > 15,688 mg/kg
Acetone	Inhalation-Vapor (4 hours)	Rat	LC50 76 mg/l
Acetone	Ingestion	Rat	LD50 5,800 mg/kg
Cyclohexane	Dermal	Rat	LD50 > 2,000 mg/kg
Cyclohexane	Inhalation-Vapor (4 hours)	Rat	LC50 > 32.9 mg/l
Cyclohexane	Ingestion	Rat	LD50 6,200 mg/kg
Petroleum Distillates	Dermal	Rabbit	LD50 > 3,160 mg/kg
Petroleum Distillates	Inhalation-Vapor (4 hours)	Rat	LC50 > 14.7 mg/l
Petroleum Distillates	Ingestion	Rat	LD50 > 5,000 mg/kg
Non-volatile components - N.J.T.S. Reg No. 04499600-6346P	Dermal		LD50 estimated to be > 5,000 mg/kg
Non-volatile components - N.J.T.S. Reg No. 04499600-6346P	Ingestion		LD50 estimated to be 2,000 - 5,000 mg/kg
Hexane	Dermal	Rabbit	LD50 > 2,000 mg/kg
Hexane	Inhalation-Vapor (4 hours)	Rat	LC50 170 mg/l
Hexane	Ingestion	Rat	LD50 > 28,700 mg/kg

ATE = acute toxicity estimate

Skin Corrosion/Irritation

Name	Species	Value
Propane	Rabbit	Minimal irritation
Acetone	Mouse	Minimal irritation
Cyclohexane	Rabbit	Mild irritant
Petroleum Distillates	Rabbit	Irritant
Non-volatile components - N.J.T.S. Reg No. 04499600-6346P	Professional judgement	Minimal irritation
Hexane	Human and animal	Mild irritant

Serious Eye Damage/Irritation

Name	Species	Value
Propane	Rabbit	Mild irritant
Acetone	Rabbit	Severe irritant
Cyclohexane	Rabbit	Mild irritant
Petroleum Distillates	Rabbit	Mild irritant
Hexane	Rabbit	Mild irritant

Skin Sensitization

Name	Species	Value
Petroleum Distillates	Guinea pig	Not sensitizing
Hexane	Human	Not sensitizing

Respiratory Sensitization

For the component/components, either no data are currently available or the data are not sufficient for classification.

Germ Cell Mutagenicity

Name	Route	Value
------	-------	-------

Propane	In Vitro	Not mutagenic
Acetone	In vivo	Not mutagenic
Acetone	In Vitro	Some positive data exist, but the data are not sufficient for classification
Cyclohexane	In Vitro	Not mutagenic
Cyclohexane	In vivo	Some positive data exist, but the data are not sufficient for classification
Petroleum Distillates	In Vitro	Not mutagenic
Hexane	In Vitro	Not mutagenic
Hexane	In vivo	Not mutagenic

Carcinogenicity

Name	Route	Species	Value
Acetone	Not Specified	Multiple animal species	Not carcinogenic
Petroleum Distillates	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification
Hexane	Dermal	Mouse	Not carcinogenic
Hexane	Inhalation	Mouse	Some positive data exist, but the data are not sufficient for classification

Reproductive Toxicity

Reproductive and/or Developmental Effects

Name	Route	Value	Species	Test Result	Exposure Duration
Acetone	Ingestion	Some positive male reproductive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,700 mg/kg/day	13 weeks
Acetone	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 5.2 mg/l	during organogenesis
Cyclohexane	Inhalation	Not toxic to female reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Not toxic to male reproduction	Rat	NOAEL 24 mg/l	2 generation
Cyclohexane	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 6.9 mg/l	2 generation
Hexane	Ingestion	Not toxic to development	Mouse	NOAEL 2,200 mg/kg/day	during organogenesis
Hexane	Inhalation	Some positive developmental data exist, but the data are not sufficient for classification	Rat	NOAEL 0.7 mg/l	during gestation
Hexane	Ingestion	Toxic to male reproduction	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Inhalation	Toxic to male reproduction	Rat	LOAEL 3.52 mg/l	28 days

Target Organ(s)

Specific Target Organ Toxicity - single exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Propane	Inhalation	cardiac sensitization	Causes damage to organs	Human	NOAEL Not available	
Propane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Propane	Inhalation	respiratory irritation	All data are negative	Human	NOAEL Not available	
Acetone	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	
Acetone	Inhalation	respiratory irritation	Some positive data exist, but the	Human	NOAEL Not	

			data are not sufficient for classification		available	
Acetone	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 1.19 mg/l	6 hours
Acetone	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL Not available	
Acetone	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	poisoning and/or abuse
Cyclohexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Cyclohexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Human and animal	NOAEL Not available	
Cyclohexane	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgment	NOAEL Not available	
Petroleum Distillates	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human and animal	NOAEL Not available	
Petroleum Distillates	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification		NOAEL Not available	
Petroleum Distillates	Ingestion	central nervous system depression	May cause drowsiness or dizziness	Professional judgment	NOAEL Not available	
Hexane	Inhalation	central nervous system depression	May cause drowsiness or dizziness	Human	NOAEL Not available	not available
Hexane	Inhalation	respiratory irritation	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL Not available	8 hours
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 24.6 mg/l	8 hours

Specific Target Organ Toxicity - repeated exposure

Name	Route	Target Organ(s)	Value	Species	Test Result	Exposure Duration
Acetone	Dermal	eyes	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL Not available	3 weeks
Acetone	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 3 mg/l	6 weeks
Acetone	Inhalation	immune system	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL 1.19 mg/l	6 days
Acetone	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Guinea pig	NOAEL 119 mg/l	not available
Acetone	Inhalation	heart | liver	All data are negative	Rat	NOAEL 45 mg/l	8 weeks
Acetone	Ingestion	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 900 mg/kg/day	13 weeks
Acetone	Ingestion	heart	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 200 mg/kg/day	13 weeks
Acetone	Ingestion	liver	Some positive data exist, but the data are not sufficient for	Mouse	NOAEL 3,896	14 days

			classification		mg/kg/day	
Acetone	Ingestion	eyes	All data are negative	Rat	NOAEL 3,400 mg/kg/day	13 weeks
Acetone	Ingestion	respiratory system	All data are negative	Rat	NOAEL 2,500 mg/kg/day	13 weeks
Acetone	Ingestion	muscles	All data are negative	Rat	NOAEL 2,500 mg/kg	13 weeks
Acetone	Ingestion	skin | bone, teeth, nails, and/or hair	All data are negative	Mouse	NOAEL 11,298 mg/kg/day	13 weeks
Cyclohexane	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 24 mg/l	90 days
Cyclohexane	Inhalation	auditory system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1.7 mg/l	90 days
Cyclohexane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rabbit	NOAEL 2.7 mg/l	10 weeks
Cyclohexane	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 24 mg/l	14 weeks
Cyclohexane	Inhalation	peripheral nervous system	All data are negative	Rat	NOAEL 8.6 mg/l	30 weeks
Hexane	Inhalation	peripheral nervous system	Causes damage to organs through prolonged or repeated exposure	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	respiratory system	Some positive data exist, but the data are not sufficient for classification	Mouse	LOAEL 1.76 mg/l	13 weeks
Hexane	Inhalation	liver	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	6 months
Hexane	Inhalation	kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	LOAEL 1.76 mg/l	6 months
Hexane	Inhalation	hematopoietic system	Some positive data exist, but the data are not sufficient for classification	Mouse	NOAEL 35.2 mg/l	13 weeks
Hexane	Inhalation	auditory system | immune system | eyes	Some positive data exist, but the data are not sufficient for classification	Human	NOAEL Not available	occupational exposure
Hexane	Inhalation	heart | skin | endocrine system	All data are negative	Rat	NOAEL 1.76 mg/l	6 months
Hexane	Ingestion	peripheral nervous system	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL 1,140 mg/kg/day	90 days
Hexane	Ingestion	endocrine system | hematopoietic system | liver | immune system | kidney and/or bladder	Some positive data exist, but the data are not sufficient for classification	Rat	NOAEL Not available	13 weeks

Aspiration Hazard

Name	Value
Cyclohexane	Aspiration hazard
Petroleum Distillates	Aspiration hazard
Hexane	Aspiration hazard

Please contact the address or phone number listed on the first page of the SDS for additional toxicological information on this material and/or its components.

SECTION 12: Ecological information

Ecotoxicological information

Please contact the address or phone number listed on the first page of the SDS for additional ecotoxicological information on this material and/or its components.

Chemical fate information

Please contact the address or phone number listed on the first page of the SDS for additional chemical fate information on this material and/or its components.

SECTION 13: Disposal considerations**13.1. Disposal methods**

Dispose of contents/ container in accordance with the local/regional/national/international regulations.

Incinerate in a permitted waste incineration facility. Facility must be capable of handling aerosol cans. The facility should be equipped to handle gaseous waste. Empty drums/barrels/containers used for transporting and handling hazardous chemicals (chemical substances/mixtures/preparations classified as Hazardous as per applicable regulations) shall be considered, stored, treated & disposed of as hazardous wastes unless otherwise defined by applicable waste regulations. Consult with the respective regulating authorities to determine the available treatment and disposal facilities.

EPA Hazardous Waste Number (RCRA): D001 (Ignitable)

SECTION 14: Transport Information

For Transport Information, please visit <http://3M.com/Transportinfo> or call 1-800-364-3577 or 651-737-6501.

SECTION 15: Regulatory information**15.1. US Federal Regulations**

Contact 3M for more information.

311/312 Hazard Categories:

Fire Hazard - Yes Pressure Hazard - Yes Reactivity Hazard - No Immediate Hazard - Yes Delayed Hazard - Yes

Section 313 Toxic Chemicals subject to the reporting requirements of that section and 40 CFR part 372 (EPCRA):

<u>Ingredient</u>	<u>C.A.S. No</u>	<u>% by Wt</u>
Cyclohexane	110-82-7	Trade Secret 10 - 30

15.2. State Regulations

Contact 3M for more information.

15.3. Chemical Inventories

The components of this product are in compliance with the chemical notification requirements of TSCA.

Contact 3M for more information.

15.4. International Regulations

Contact 3M for more information.

This SDS has been prepared to meet the U.S. OSHA Hazard Communication Standard, 29 CFR 1910.1200.

SECTION 16: Other information

NFPA Hazard Classification

Health: 2 **Flammability:** 4 **Instability:** 0 **Special Hazards:** None

Aerosol Storage Code: 3

National Fire Protection Association (NFPA) hazard ratings are designed for use by emergency response personnel to address the hazards that are presented by short-term, acute exposure to a material under conditions of fire, spill, or similar emergencies. Hazard ratings are primarily based on the inherent physical and toxic properties of the material but also include the toxic properties of combustion or decomposition products that are known to be generated in significant quantities.

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Supersedes Date: 02/24/16

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SECTION 1 – PRODUCT AND COMPANY IDENTIFICATION

1.1 Trade Name (as labeled):	Duo Patch
Synonyms:	N/A
CAS No:	Mixture
1.2 Product Use:	Concrete repair mortar
1.3 Company Name:	SpecChem
Company Address:	1511 Baltimore Ave; Suite 600
Company Address Cont:	Kansas City, MO 64108
Business Phone:	(816) 968-5600
Website:	www.specchemllc.com
1.4 Emergency Telephone Number:	Chemtrec: (800) 424-9300
Date of Current Revision:	February 1, 2015
Date of Last Revision:	May 17, 2012

SECTION 2 – HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: This product is a gray powder with minimal odor.

Health Hazards: May cause skin and respiratory irritation and burns to the eyes. Contact with skin may cause an allergic reaction. Repeated exposure may cause damage to the lungs. Contains components that are defined as human carcinogens.

Flammability Hazards: This product is not considered flammable.

Reactivity Hazards: None.

Environmental Hazards: The environmental effects of this product have not been investigated, however release may cause long term adverse environmental effects.

US DOT Symbols Not Regulated



EU and GHS Symbols

Signal Word Danger

2.1 EU Labeling and Classification:

This product meets the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives.

EU HAZARD CLASSIFICATION OF INGREDIENTS PER DIRECTIVE 1272/2008/EC:

Index Number:

238-878-4 is not listed in Annex I

266-043-4 is not listed in Annex I

Substances not listed either individually or in group entries must be self classified.

Components Contributing to Classification:

Crystalline Silica (Quartz)/Silica Sand, Portland Cement, Calcium Oxide, Aluminum Sulfate

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2.2 Label Elements:

GHS Hazard Classifications:

Carcinogenicity Category 2
STOT – SE Category 3 (Respiratory System)
Skin Irritation Category 2
Skin Sensitization Category 1
Eye Damage Category 1

Hazard Statements:

H351 Suspected of causing cancer
H373 May cause damage to organs
(Respiratory System) through prolonged or
repeated exposure

H335 May cause respiratory irritation

H315 Causes skin irritation

H317 May cause an allergic skin reaction

H318 Causes serious eye damage

Precautionary Statements:

P201 Obtain special instructions before use.

P202 Do not handle until all safety precautions
have been read and understood.

P260 Do not breathe

dust/fume/gas/mist/vapours/spray.

P264 Wash thoroughly after handling.

P271 Use only outdoors or in a well-ventilated
area.

P272 Contaminated work clothing should not be
allowed out of the workplace

P270 Do not eat, drink or smoke when using
this product.

P280 Wear protective gloves/eye
protection/face protection.

Response Statements:

P308+P313 IF exposed or concerned: Get
medical advice/attention.

P304+P340 IF INHALED: Remove person to
fresh air and keep comfortable for breathing.

P312 Call a POISON CENTER/Doctor if you
feel unwell.

P302+P352 IF ON SKIN: Wash with plenty of
water.

P333+P312 If skin irritation or rash occurs: Get
medical advice/attention.

P362+P364 Take off contaminated clothing and
wash it before reuse.

P305+P351+P338 IF IN EYES: Rinse
cautiously with water for several minutes.

Remove contact lenses, if present and easy to
do. Continue rinsing.

P310 Immediately call a POISON
CENTER/Doctor.

Storage Statements:

P403+P233 Store in a well-ventilated place.

Keep container tightly closed.

P405 Store locked up.

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Disposal Statements:

P501 Dispose of contents/container in accordance with local/regional/national/international regulations..

2.3 Health Hazards or Risks From Exposure:

Symptoms of Overexposure by Route of Exposure:

The most significant routes of overexposure for this product are by contact with skin or eyes. The symptoms of overexposure are described in the following paragraphs.

Acute:

Inhalation: May cause respiratory irritation.

Skin Contact: May cause irritation to skin.

Eye Contact: Contact with the eyes may cause burns or irritation.

Ingestion: May cause gastrointestinal irritation, nausea, and vomiting.

Chronic: Repeated exposure may cause skin dryness or cracking.

Target Organs:

Acute: Eyes, Skin, Respiratory

Chronic: Lung, Skin

SECTION 3 – COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous Ingredients	WT%	CAS No.	EINECS No.	Hazard Classification
Crystalline Silica (Quartz)/ Silica Sand	50–70%	14808-60-7	238-878-4	Carc. 2, STOT RE2
Portland Cement	25–45%	65997-15-1	266-043-4	STOT SE3, Skin Irrit. 2, Eye Dam. 1, Skin Sens. 1
Calcium Oxide	3–10%	1305-78-8	215-138-9	STOT SE3, Skin Irrit. 2, Eye Dam. 1
Aluminum Sulfate	1–4%	10043-01-3	233-135-0	STOT SE3, Skin Irrit. 2, Eye Dam. 1
Balance of other ingredients are non-hazardous or less than 1% in concentration (or 0.1% for carcinogens, reproductive toxins, or respiratory sensitizers).				

Note: All WHMIS required information is included in appropriate sections based on the ANSI Z400.1-2010 format. This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR, EU Directives and the Japanese Industrial Standard JIS Z 7250:2000

SECTION 4 – FIRST AID MEASURES

4.1 Description of First Aid Measures:

Eye Contact:

If product enters the eyes, flush with plenty of water or eye wash solution for several minutes. Remove contacts if present and easy to do. Seek medical attention if irritation persists.

Skin Contact:

Wash skin thoroughly with soap and water after handling. Seek medical attention if irritation develops and persists.

Inhalation:

If breathing becomes difficult, remove victim to fresh air. If necessary, use artificial respiration to support vital functions. Seek medical attention.

Ingestion:

If product is swallowed, call physician or poison center if you feel unwell.

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If professional advice is not available, do not induce vomiting. Never induce vomiting or give dilutents (milk or water) to someone who is unconscious, having convulsions, or who cannot swallow. Seek medical advice. Take a copy of the label and/or SDS with the victim to the health professional.

**Medical Conditions
Generally Aggravated
By Exposure:**

Pre-existing skin, respiratory system or eye problems may be aggravated by prolonged contact.

4.2 Symptoms and Effects Both Acute and Delayed: Exposure to skin and respiratory may cause irritation. Contact with the eyes may cause burns. Contact with skin may cause an allergic reaction. Repeated exposure may cause damage to the lungs.

4.3 Recommendations to Physicians: Treat symptoms and eliminate overexposure.

SECTION 5 – FIRE FIGHTING MEASURES

5.1 Fire Extinguishing Materials:

Use the following fire extinguishing materials:

Water Spray:	Yes
Foam:	Yes
Halon:	Yes
Carbon Dioxide:	Yes
Dry Chemical:	Yes
Other:	Any "C" Class

5.2 Unusual Fire and Explosion Hazards:

Irritating and toxic fumes may be produced at high temperatures. Use of water may result if the formation of a toxic aqueous solution. Do not allow run-off from fire fighting to enter drains or water courses.

Explosive Sensitivity to Mechanical Impact:	No
Explosive Sensitivity to Static Discharge:	No

5.3 Special Fire-Fighting Procedures:

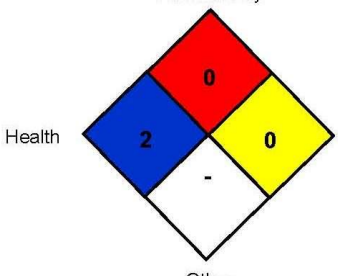


- Incipient fire responders should wear eye protection.
- Structural firefighters must wear Self-Contained Breathing Apparatus (SCBA) and full protective equipment.
- Isolate materials not yet involved in the fire and protect personnel.
- Move containers from fire area if this can be done without risk; otherwise, cool with carefully applied water spray.

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- If possible, prevent run-off water from entering storm drains, bodies of water, or other environmentally sensitive areas.

NFPA RATING SYSTEM		HMIS RATING SYSTEM	
<p>Flammability</p>  <p>Health Reactivity</p> <p>Other</p>		HAZARDOUS MATERIAL IDENTIFICATION SYSTEM	
		HEALTH HAZARD (BLUE)	2
		FLAMMABILITY HAZARD (RED)	0
		PHYSICAL HAZARD (YELLOW)	0
PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	See Sect 8		See Sect 8
For Routine Industrial Use and Handling Applications			
Hazard Scale: 0 = Minimum 1 = Slight 2 = Moderate 3 = Serious 4 = Severe * = Chronic Hazard			

SECTION 6 – ACCIDENTAL RELEASE MEASURES (STEPS FOR SPILLS)

6.1 Personal Precautions, Protective Equipment and Emergency Procedures:

Use cautious judgment when cleaning up spill. Wear suitable protective clothing, gloves, and eye/face protection.

6.2 Environmental Precautions:

If liquid was introduced, construct a dike to prevent spreading. Keep out of sewers, storm drains, surface waters, and soils.

6.3 Spill and Leak Response:

Small Spills:

- Collect material via broom or mop. Place in tightly sealed containers for proper disposal.
- Approach spill areas with caution.
- If liquid was introduced, create a dike or trench to contain material.
- Soak up with absorbent material such as clay, sand or other suitable non-reactive material.

Large Spills:

- Place in leak-proof containers. Seal tightly for proper disposal.
- Dispose of in accordance with U.S. Federal, State, and local hazardous waste disposal regulations and those of Canada and its Provinces, those of Australia, Japan and EU Member States (see Section 13, Disposal Considerations).

SECTION 7 - HANDLING AND STORAGE

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7.1 Precautions for Safe Handling:

To prevent eye contact under the foreseeable conditions of use, wear appropriate safety eyewear. When handling, do not eat, drink, or smoke. Wash thoroughly after handling.

7.2 Storage and Handling Practices:

Keep away from incompatible materials. Keep container closed when not in use and store in well ventilated area.

7.3 Specific Uses:

Rapid setting concrete repair mortar.

SECTION 8 – EXPOSURE CONTROLS / PERSONAL PROTECTION

8.1 Exposure Parameters:

Ingredients	CAS No.	OSHA PEL	NIOSH PEL	ACGIH TWA
Crystalline Silica (Quartz)/Silica Sand	14808-60-7	TWA 0.1 mg/m3 (resp) TWA 0.3 mg/m3 (total)	Ca TWA 0.05 mg/m3	0.025 mg/m3
Portland Cement	65997-15-1	TWA 5 mg/m3 (resp) TWA 15 mg/m3 (total)	TWA 5 mg/m3 (resp) TWA 10 mg/m3 (total)	10 mg/m3 (total)
Calcium Oxide	1305-78-8	TWA 5 mg/m3	TWA 2 mg/m3	TWA 2 mg/m3
Aluminum Sulfate	10043-01-3	TWA 2 mg/m3	TWA 2 mg/m3	TWA 2 mg/m3

8.2 Exposure Controls:

Ventilation and Engineering Controls:

Use with adequate ventilation to ensure exposure levels are maintained below the limits provided above.

The following information on appropriate Personal Protective Equipment is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132), or standards of EU member states (including EN 149 for respiratory PPE, and EN 166 for face/eye protection), and those of Japan. Please reference applicable regulations and standards for relevant details.

Respiratory Protection:

Maintain airborne contaminant concentrations below guidelines listed above. Use only respiratory protection authorized in the U.S. Federal OSHA Respiratory Protection Standard (29 CFR 1910.134), equivalent U.S. State standards, Canadian CSA Standard Z94.4-93, the European Standard EN149, or EU member states.

Eye Protection:

Safety glasses or goggles are required. If necessary, refer to U.S. OSHA 29 CFR 1910.133, Canadian Standards, and the European Standard EN166, Australian Standards, or relevant Japanese Standards.

Hand Protection:

Chemical resistant gloves are required to prevent skin contact. If necessary, refer to U.S. OSHA 29 CFR 1910.138, the European

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Body Protection:

Standard DIN EN 374, the appropriate Standards of Canada, Australian Standards, or relevant Japanese Standards.
Use body protect appropriate to task being performed.
If necessary, refer to appropriate Standards of Canada, or appropriate standards of the EU, Australian Standards, or relevant Japanese Standards. If a hazard of injury to the feet exists due to falling objects, rolling objects, where objects may pierce the soles of the feet or where employee's feet may be exposed to electrical hazards, use foot protection, as described in U.S. OSHA 29 CFR 1910.136.

SECTION 9 – PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties:

Appearance (Physical State and Color): Gray powder

Odor: Minimal

Odor Threshold: No data available

pH: No data available

Melting/Freezing Point: No data available

Boiling Point: No data available

Flash Point: No data available

Evaporation Rate: No data available

Flammability (Solid; Gas): No data available

Upper/Lower Flammability or Explosion Limits: No data available

Vapor Pressure (mm Hg @ 20°C (68° F): No data available

Vapor Density: No data available

Relative Density: No data available

Specific Gravity: 2.6 - 3.2

Solubility in Water: Miscible

Weight per Gallon: No data available

Partition Coefficient (n-octanol/water): No data available

Auto-Ignition Temperature: No data available

Decomposition Temperature: No data available

Viscosity: No data available

9.2 Other Information: No data available

SECTION 10 – STABILITY AND REACTIVITY

10.1 Reactivity:

This product is not reactive.

10.2 Stability:

Stable under conditions of normal storage and use.

10.3 Possibility of Hazardous Reactions:

Will not occur.

10.4 Conditions to Avoid:

No data available.

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10.5 Incompatible Substances: Hydrogen fluoride.

10.6 Hazardous Decomposition Products: No data available.

SECTION 11 – TOXICOLOGY INFORMATION

11.1 Information on Toxicological Effects:

Toxicity Data:

No data available

Suspected Cancer Agent:

Crystalline Silica (Quartz)/Silica Sand (CAS 14808-60-7) is found on one or more of the following lists: FEDERAL OSHA Z LIST, NTP, IARC, or CAL/OSHA and therefore is considered to be a cancer-causing agent by these agencies.

Irritancy:

Skin, eye, and respiratory irritant.

Sensitization to the Product:

This product is expected to cause skin sensitization.

Germ Cell Mutagenicity:

This product does not contain ingredients that are suspected to be a germ cell mutagenic.

Reproductive Toxicity:

This product is not expected to be a human reproductive toxicant.

SECTION 12 – ECOLOGICAL INFORMATION

12.1 Toxicity:

No data available

12.2 Persistence and Degradability:

No specific data available on this product.

12.3 Bioaccumulative Potential:

No specific data available on this product.

12.4 Mobility in Soil:

No specific data available on this product.

12.5 Results of PBT and vPvB Assessment: No specific data available on this product.

12.6 Other Adverse Effects:

No data available

12.7 Water Endangerment Class:

At present, there are no ecotoxicological assessments for this product.

SECTION 13 – DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods:

Waste disposal must be in accordance with appropriate U.S. Federal, State, and local regulations, those of Australia, EU Member States and Japan.

13.2 EU Waste Code:

Not determined

SECTION 14 - TRANSPORTATION INFORMATION

14.1 U.S. Department of Transportation (DOT) Shipping Regulations:

This product is classified (per 49 CFR 172.101) by the U.S. Department of Transportation, as follows.

UN Identification Number:

Not applicable

Proper Shipping Name:

Not regulated

Hazard Class Number and Description:

Not applicable

Packing Group:

Not applicable

DOT Label(s) Required:

Not applicable

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**North American Emergency
Response Guidebook Number:**

Not applicable

14.2 Environmental Hazards:

Marine Pollutant:

The components of this product are not designated by the Department of Transportation to be Marine Pollutants (49 CFR 172.101, Appendix B).

None

14.3 Special Precaution for User:

14.4 International Air Transport Association

Shipping Information (IATA):

Not regulated.

14.5 International Maritime Organization

Shipping Information (IMO):

UN Identification Number:

Not applicable

Proper Shipping Name:

Not regulated

Hazard Class Number and Description:

Not applicable

Packing Group:

Not applicable

EMS-No:

Not applicable

SECTION 15 – REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations Specific for the Substance or Mixture:

United States Regulations:

U.S. SARA Reporting Requirements:

The components of this product are not subject to the reporting requirements of Sections 302, 304, and 313 of Title III of the Superfund Amendments and Reauthorization Act.

U.S. SARA 311/312:

Acute Health: Yes; Chronic Health: Yes; Fire: No; Reactivity: No

U.S. CERCLA Reportable Quantity:

None

U.S. TSCA Inventory Status:

The components of this product are listed on the TSCA Inventory or are exempted from listing.

Other U.S. Federal Regulations:

None known

California Safe Drinking Water and Toxic Enforcement Act (Proposition 66):

This product does contain "Silica, crystalline", which is on the Proposition 65 Lists.

15.2 Canadian Regulations:

Canadian DSL/NDSL Inventory Status:

Components are DSL Listed, NDSL Listed and/or are exempt from listing

Other Canadian Regulations:

Not applicable

Canadian Environmental Protection Act (CEPA) Priorities Substances Lists:

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

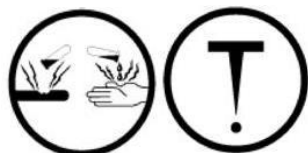
Canadian WHMIS Classification and Symbols:

This product is Class E, Corrosive, and D2B, Materials causing other toxic effects, per WHMIS Controlled Product Regulations

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15.3 European Economic Community Information:

This product meets the definition of a hazardous substance or preparation as defined by the European Union Council Directives 67/548/EEC, 1999/45/EC, 1272/2008/EC and subsequent Directives. See Section 2 for Details.

Chemical Safety Assessment:

No Chemical Safety Assessment has been carried out for this substance/mixture by the supplier.

15.4 Australian Information for Product:

Components of this product are listed on the International Chemical Inventory list.

15.5 Japanese Information for Product:

Japanese Minister of International Trade and Industry (MITI) Status: The components of this product are not listed as Class I specified Chemical Substances, Class II Specified Chemical Substances, or Designated Chemical Substances by the Japanese MITI.

15.6 International Chemical Inventories:

Listing of the components on individual country Chemical Inventories is as follows:

Australian Inventory of Chemical Substances (AICS): Listed

Korean Existing Chemicals List (ECL): Listed

Japanese Existing National Inventory of Chemical Substances (ENCS): Listed

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed

U.S. TSCA: Listed

SECTION 16 – OTHER INFORMATION

Prepared By: Chris Eigbrett (MSDS to GHS Compliance)

Date of Printing: February 1, 2015

The information contained herein is believed to be accurate but is not warranted to be so. Data and calculations are based on information furnished by the manufacturer of the product and manufacturers of the components of the product. Users are advised to confirm in advance of the need that information is current, applicable and suited to the circumstances of use. This safety sheet cannot cover all possible situations which the user may experience during processing. Each aspect of your operation should be examined to determine if, or where, additional precautions may be necessary. All health and safety information contained in this bulletin should be provided to your employees or customers. SpecChem assumes no responsibility for injury to vendee or third party person proximately caused by the material if reasonable safety procedures are not adhered to as stipulated in the data sheet. Furthermore, SpecChem assumes no responsibility for injury caused by abnormal use of this material even if reasonable safety procedures are followed. Compliance with all applicable federal, state, and local laws and local regulations remains the responsibility of the user.

END OF SDS SHEET





SAFETY DATA SHEET (SDS): GRANITE

SECTION I – IDENTIFICATION

PRODUCT IDENTIFIER	TRADE NAME	OTHER SYNONYMS
Granite	Crushed Stone	Aggregate, Manufactured Sand
RECOMMENDED USE AND RESTRICTION ON USE Used for construction purposes This product is not intended or designed for and should not be used as an abrasive blasting medium or for foundry applications.		
MANUFACTURER/SUPPLIER INFORMATION Luck Stone Corporation P. O. Box 29682 Richmond, Virginia 23242 Phone: 804-784-6300 8 AM to 5 PM Eastern Time Monday to Friday For additional health, safety or regulatory information and other emergency situations, call 804-476-6405		

SECTION II – HAZARD(S) IDENTIFICATION

HAZARD CLASSIFICATION: Category 1A Carcinogen Category 1 Specific Target Organ Toxicity (STOT) following repeated exposures Category 1 Eye Damage Category 1 Skin Corrosive	 
SIGNAL WORD: DANGER	
HAZARD STATEMENTS: May cause cancer by inhalation. Causes damage to lungs, kidneys and autoimmune system through prolonged or repeated exposure by inhalation. Causes severe skin burns and serious eye damage.	
PRECAUTIONARY STATEMENTS Do not handle until the safety information presented in this SDS has been read and understood. Do not breathe dusts or mists. Do not eat, drink or smoke while manually handling this product. Wash skin thoroughly after manually handling. If swallowed: Rinse mouth and do not induce vomiting. If on skin (or hair): Rinse skin after manually handling and wash contaminated clothing if there is potential for direct skin contact before reuse. If inhaled excessively: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do, and continue rinsing. If exposed, concerned, unwell or irritation of the eyes, skin, mouth or throat/nasal passage persist: Get medical attention. Wear eye protection and respiratory protection following this SDS, NIOSH guidelines and other applicable regulations. Use protective gloves if manually handling the product. Avoid creating dust when handling, using or storing. Use with adequate ventilation to keep exposure below recommended exposure limits. Dispose of product in accordance with local, regional, national or international regulations. Please refer to Section XI for details of specific health effects of the components.	

SECTION III – COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT(S) CHEMICAL NAME	CAS REGISTRY NO	% by weight (approx)
Silicon Dioxide, SiO ₂ ⁽¹⁾	7631-86-9	45-75
Aluminum Oxide, Al ₂ O ₃	1344-28-1	10-20
Ferrous Oxide, FeO	1345-25-1	0-3
Ferric Oxide, Fe ₂ O ₃	1309-37-1	2-15
Magnesium Oxide, MgO	1309-48-4	1-8
Calcium Oxide, CaO	1305-78-8	2-12
Sodium Oxide, Na ₂ O	1313-59-3	1-4
Potassium Oxide, K ₂ O	12136-45-7	1-5
Titanium Oxide, TiO ₂	13463-67-7	0-3

(1): Typically contains crystalline silica and the composition varies naturally

SECTION IV – FIRST-AID MEASURES

INHALATION: If excessive inhalation occurs, remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or develops later.

EYES: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Remove contact lenses, if present and easy to do, and continue rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Contact a physician if irritation persists or develops later.

SKIN: Rinse skin with soap and water after manually handling and wash contaminated clothing if there is potential for direct skin contact. Contact a physician if irritation persists or develops later.

INGESTION: If swallowed, rinse mouth and do not induce vomiting. If gastrointestinal discomfort occurs, persists or develops later, get medical attention.

SIGNS AND SYMPTOMS OF EXPOSURE: There are generally no signs or symptoms of exposure to respirable crystalline silica. Often, chronic silicosis has no symptoms. The symptoms of chronic silicosis, if present, are shortness of breath, wheezing, cough and sputum production. The symptoms of acute silicosis which can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as 6 months, are the same as those associated with chronic silicosis; additionally, weight loss and fever may also occur. The symptoms of scleroderma, an autoimmune disease, include thickening and stiffness of the skin, particularly in the fingers, shortness of breath, difficulty swallowing and joint problems.

Direct skin and eye contact with dust may cause irritation by mechanical abrasion. Some components of the product are also known to cause corrosive effects to skin, eyes and mucous membranes. Ingestion of large amounts may cause gastrointestinal irritation and blockage. Inhalation of dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion or corrosive action. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits. Repeated excessive exposure may cause pneumoconiosis, such as silicosis and other respiratory effects.

SECTION V – FIRE-FIGHTING MEASURES**EXTINGUISHING AGENT**

Not flammable; use extinguishing media compatible with surrounding fire.

UNUSUAL FIRE AND EXPLOSION HAZARD

Contact with powerful oxidizing agents may cause fire and/or explosions (see Section X of this SDS). While individual components are known to react vigorously with water to produce heat, this is not expected from this product.

SPECIAL FIRE FIGHTING PROCEDURES

None known

HAZARDOUS COMBUSTION PRODUCTS

None known

SECTION VI – ACCIDENTAL RELEASE MEASURES**STEPS TO BE TAKEN IN CASE MATERIAL IS RELEASED OR SPILLED**

Persons involved in cleaning should first follow the precautions defined in Section VII of the SDS. Spilled materials, where dust can be generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust and other components that may pose inhalation hazards. Do not dry sweep spilled material. Collect the material using a method that does not produce dust such as a High-Efficiency Particulate Air (HEPA) vacuum or thoroughly wetting down the dust before cleaning up. Wear appropriate personal protective equipment as specified in Section VIII including appropriate respirators during and following clean up or whenever airborne dust is present to ensure worker exposures remain below occupational exposure limits (OELs - Refer to Section VIII).

Place the dust in a covered container appropriate for disposal. Dispose of the dust according to federal, state and local regulations.

This product is not subject to the reporting requirements of SARA Title III Section 313, and 40 CFR 372.

SECTION VII – HANDLING AND STORAGE

This product is not intended or designed for and should not be used as an abrasive blasting medium or for foundry applications.

Follow protective controls set forth in Section VIII of this SDS when handling this product. Dust containing respirable crystalline silica and other components that may be corrosive/irritant may be generated during processing, handling and storage. Use good housekeeping procedures to prevent the accumulation of dust in the workplace.

Do not breathe dust. Avoid contact with skin and eyes. Do not store near food or beverages or smoking materials. Do not stand on piles of materials; it may be unstable.

Use adequate ventilation and dust collection equipment and ensure that the dust collection system is adequate to reduce airborne dust levels to below the appropriate OELs. If the airborne dust levels are above the appropriate OELs, use respiratory protection during the establishment of engineering controls. Refer to Section VIII - Exposure Controls/Personal Protection for further information.

In accordance with OSHA's Hazard Communication Standard (29 CFR 1910.1200, 1915.99, 1917.28, 1918.90, 1926.59, 1928.21), state, and/or local right-to-know laws and regulations, familiarize your employees with this SDS and the information contained herein. Warn your employees, your customers and other third parties (in case of resale or distribution to others) of the potential health risks associated with the use of this product and train them in the appropriate use of personal protective equipment and engineering controls, which will reduce their risks of exposure.

See also ASTM International standard practice E 1132-06, "Standard Practice for Health Requirements Relating to Occupational Exposure to Respirable Crystalline Silica."

For safe handling and use of this product for Hydraulic Fracturing, please see the OSHA/NIOSH Hazard Alert Worker Exposure to Silica during Hydraulic Fracturing DHHS (NIOSH) Publication No. 2012-166 (2012).
http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION**Airborne OELs for Components of Granite:**

COMPONENT(S) CHEMICAL NAME	MSHA/OSHA PEL	ACGIH TLV-TWA	NIOSH REL
Silicon Dioxide, SiO ₂	(R) 10 mg/m ³ / (% SiO ₂ + 2) §	(R) 0.025 mg/m ³ #	(R) 0.05 mg/m ³ #
Aluminum Oxide, Al ₂ O ₃	(T) 15 mg/m ³ , (R) 5 mg/m ³	(1) (R) 1 mg/m ³	-
Ferrous Oxide, FeO	-	-	-
Ferric Oxide, Fe ₂ O ₃	(2) 10 mg/m ³	(R) 5 mg/m ³	(3) 5 mg/m ³
Magnesium Oxide, MgO	(4) 15 mg/m ³	(I) 10 mg/m ³	-
Calcium Oxide, CaO	5 mg/m ³	2 mg/m ³	2 mg/m ³
Sodium Oxide, Na ₂ O (5)	2 mg/m ³	(C) 2 mg/m ³	(C) 2 mg/m ³
Potassium Oxide, K ₂ O	-	(6) (C) 2 mg/m ³	(6) (C) 2 mg/m ³
Titanium Oxide, TiO ₂	15 mg/m ³	10 mg/m ³	-

§: Crystalline silica is normally measured as respirable dust. The OSHA/MSHA standard also presents a formula for calculation of the PEL based on total dust: 30 mg/m³ / (% SiO₂ + 2). The OSHA/MSHA PEL listed is for dust containing crystalline silica (quartz) and is based on the silica content of the respirable dust sample. The OSHA/MSHA PEL for crystalline silica as tridymite and cristobalite is one-half the PEL for crystalline silica (quartz).

The ACGIH and NIOSH limits are for crystalline silica (quartz), independent of the dust concentration. The ACGIH TLV for crystalline silica as cristobalite is equal to the TLV for crystalline silica as quartz. In 2005, ACGIH withdrew the TLV for crystalline silica as tridymite. Refer to Section X for thermal stability information for crystalline silica (quartz).

(1): Limits based on Aluminum Metal and Insoluble Compounds.

(2): As Iron Oxide Fume.

(3): Dust and fume, as Iron

(4): As Magnesium Oxide Fume Total Particulate.

(5): Based on Sodium Hydroxide.

(6): Based on Potassium Hydroxide.

(R): Respirable Fraction.

(T): Total Dust.

(I): Inhalable Fraction.

(C): Ceiling Limit

Airborne OELs for Inert/Nuisance Dust:

Standard	Respirable Dust	Total Dust
MSHA/OSHA PEL (as Inert or Nuisance Dust)	5 mg/m ³	15 mg/m ³
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m ³	*10 mg/m ³
NIOSH REL (Particulates Not Otherwise Regulated)	-	-

Note: The limits for Inert Dust are provided as guidelines. Nuisance dust is limited to particulates not known to cause systemic injury or illness.

* The TLV provided is for inhalable particles not otherwise specified.

ENGINEERING CONTROLS

Ventilation: Use local exhaust, general ventilation or natural ventilation adequate to maintain exposures below appropriate exposure limits.

Other control measures: Respirable dust and crystalline silica levels should be monitored regularly. Dust and crystalline silica levels in excess of appropriate exposure limits should be reduced by implementing feasible engineering controls, including (but not limited to) dust suppression (wetting), ventilation, process enclosure and enclosed employee work stations.

EYE/FACE PROTECTION

Safety glasses with side shields should be worn as minimum protection. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated. If irritation persists, get medical attention immediately. There is potential for severe eye irritation if exposed to excessive concentrations of dust for those using contact lenses.

SKIN PROTECTION

Use appropriate protective gloves if manually handling the product.

SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION, CONTD.**RESPIRATORY PROTECTION****Respirator Recommendations:**

For respirable crystalline silica levels that exceed or are likely to exceed appropriate exposure limits, a NIOSH-approved particulate filter respirator must be worn. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements. For additional information contact NIOSH at 1-800-356-4674 or visit website: <http://www.cdc.gov/niosh/npg> (search for crystalline silica). See also ANSI standard Z88.2 (latest revision) "American National Standard for Respiratory Protection," 29 CFR 1910.134 and 1926.103, and 42 CFR 84.

NIOSH recommendations for respiratory protection for crystalline silica include:

Up to 0.5 mg/m³:

(APF = 10) Any particulate respirator equipped with an N95, R95, or P95 filter (including N95, R95, and P95 filtering facepieces) except quarter-mask respirators. The following filters may also be used: N99, R99, P99, N100, R100, P100.

Up to 1.25 mg/m³:

(APF = 25) Any powered, air-purifying respirator with a high-efficiency particulate (100-series) filter.

(APF = 25) Any supplied-air respirator operated in a continuous-flow mode

Up to 2.5 mg/m³:

(APF = 50) Any air-purifying, full-facepiece respirator with an N100, R100, or P100 filter.

(APF = 50) Any powered, air-purifying respirator with a tight-fitting facepiece and a high-efficiency particulate filter

Up to 25 mg/m³:

(APF = 1000) Any supplied-air respirator operated in a pressure-demand or other positive-pressure mode

Emergency or planned entry into unknown concentrations or IDLH conditions (50 mg/m³ for crystalline silica-quartz): A self-contained breathing apparatus (SCBA) that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode or any supplied-air respirator that has a full-face piece and is operated in a pressure-demand or other positive-pressure mode in combination with an auxiliary self-contained positive-pressure breathing apparatus.

Escape from unknown or IDLH conditions: An air-purifying, full-face piece respirator with a high-efficiency particulate (100-series) filter or any appropriate escape-type, self-contained breathing apparatus.

If the workplace airborne crystalline silica concentration is unknown for a given task, conduct air monitoring to determine the appropriate level of respiratory protection to be worn. Consult with a certified industrial hygienist, your insurance risk manager or the OSHA Consultative Services group for detailed information. Ensure appropriate respirators are worn, as needed, during and following the task, including clean up or whenever airborne dust is present, to ensure worker exposures remain below OELs.

GENERAL HYGIENE CONSIDERATIONS

There are no known hazards associated with this material when used as recommended. Following the guidelines in this SDS are recognized as good industrial hygiene practices. Avoid breathing dust. Avoid skin and eye contact. Wash dust-exposed skin with soap and water before eating, drinking, smoking and using toilet facilities. Wash work clothes after each use.

SECTION IX— PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE Granite is a mixture of angular particles, generally grey but can be multi-colored, ranging in size from sand to boulders.	ODOR AND ODOR THRESHOLD Odorless and not applicable
pH AND VISCOSITY Not applicable	MELTING POINT/FREEZING POINT Not applicable
BOILING POINT AND RANGE Not applicable	FLASH POINT AND FLAMMABILITY Not applicable
FLAMMABILITY/EXPLOSIVE LIMITS AND AUTOIGNITION TEMPERATURE Not applicable	EVAPORATION RATE AND DECOMPOSITION TEMPERATURE Not applicable
VAPOR PRESSURE AND VAPOR DENSITY IN AIR Not applicable	SPECIFIC GRAVITY. 2.55-2.8
SOLUBILITY IN WATER Negligible	PARTITION COEFFICIENT: N-OCTANOL/WATER Not applicable

SECTION X – STABILITY AND REACTIVITY

STABILITY Stable	CONDITIONS TO AVOID Contact with incompatible materials (see below).
THERMAL STABILITY If crystalline silica (quartz) is heated to more than 870°C (1598°F), it can change to a form of crystalline silica known as tridymite, and if crystalline silica (quartz) is heated to more than 1470°C (2678°F), it can change to a form of crystalline silica known as cristobalite.	
INCOMPATIBILITY (Materials to avoid) Contact with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride may cause fire and/or explosions. Some components of this product may react vigorously with water.	
HAZARDOUS DECOMPOSITION PRODUCTS Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.	
HAZARDOUS POLYMERIZATION Not known to polymerize	

SECTION XI – TOXICOLOGICAL INFORMATION

Health Effects: The information below represents an overview of health effects caused by overexposure to one or more components in granite.	
Primary routes(s) of exposure:	■ Inhalation • Skin ■ Ingestion
EYE CONTACT: Direct contact with dust may cause irritation by mechanical abrasion or corrosive action. Conjunctivitis may occur.	
SKIN CONTACT: Direct contact may cause irritation by mechanical abrasion. Some components of material are also known to cause corrosive effects to skin and mucous membranes.	
SKIN ABSORPTION: Not expected to be a significant route of exposure.	
INGESTION: Small amounts (a tablespoonful) swallowed during normal handling operations are not likely to cause injury. Ingestion of large amounts may cause gastrointestinal irritation and blockage.	

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.

INHALATION: Dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion or corrosive action. Coughing, sneezing, chest pain, shortness of breath, inflammation of mucous membrane, and flu-like fever may occur following exposures in excess of appropriate exposure limits.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Inhaling respirable dust and/or crystalline silica may aggravate existing respiratory system disease(s) (e.g., bronchitis, emphysema, chronic obstructive pulmonary disease) and/or dysfunctions. Exposure to dust may aggravate existing skin and/or eye conditions. Smoking and obstructive/restrictive lung diseases may also exacerbate the effects of excessive exposure to this product.

This product is a mixture of components. The composition percentages are listed in Section III. Toxicological information for each component is listed below:

Silicon Dioxide: It is comprised of amorphous and crystalline forms of silica.

Exposure route: Eyes, respiratory system.

Target organs: Eyes, skin, respiratory system.

ACGIH, MSHA, and OSHA have determined that adverse effects are not likely to occur in the workplace provided exposure levels do not exceed the appropriate exposure limits. Lower exposure limits may be appropriate for some individuals including persons with pre-existing medical conditions as described under medical conditions aggravated by exposure.

A. SILICOSIS

The major concern is silicosis (lung disease), caused by the inhalation and retention of respirable crystalline silica dust. Silicosis leads to conditions such as lung fibrosis and reduced pulmonary function. The form and severity in which silicosis manifests itself, depends in part on the type and extent of exposure to silica dusts: chronic, accelerated and acute forms are recognized. In later stages the critical condition may become disabling and potentially fatal. Restrictive and/or obstructive changes in lung function may occur due to exposure. A risk associated with silicosis is development of pulmonary tuberculosis (silico-tuberculosis). Respiratory insufficiencies due to massive fibrosis and reduced pulmonary function, possibly with accompanying heart failure, are other potential causes of death due to silicosis.

Chronic or Ordinary Silicosis is the most common form of silicosis and can occur after many years of exposure to levels above the OELs for airborne respirable crystalline silica dust. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. Symptoms of silicosis may include (but are not limited to): Shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; heart enlargement and/or failure. It is further defined as either simple or complicated silicosis.

Simple Silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF).

Complicated Silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Although there may be no symptoms associated with complicated silicosis or PMF, the symptoms, if present, are shortness of breath, wheezing, cough and sputum production. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease (cor pulmonale) secondary to the lung disease.

Accelerated Silicosis can occur with exposure to high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of the initial exposure. The progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except that the lung lesions appear earlier and the progression is more rapid.

Acute Silicosis can occur with exposures to very high concentrations of respirable crystalline silica over a very short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough and weight loss. Acute silicosis is a rapidly progressive, incurable lung disease and is typically fatal.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.**B. CANCER**

IARC - The International Agency for Research on Cancer ("IARC") concluded that there is “*sufficient evidence* in humans for the carcinogenicity of crystalline silica in the form of quartz or cristobalite”, there is “*sufficient evidence* in experimental animals for the carcinogenicity of quartz dust” and that there is “*limited evidence* in experimental animals for the carcinogenicity of tridymite dust and cristobalite dust.” The overall IARC evaluation was that “crystalline silica inhaled in the form of quartz or cristobalite dust is *carcinogenic to humans (Group 1)*.” The IARC evaluation noted that not all industrial circumstances studied evidenced carcinogenicity. The monograph also stated that “Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs.” For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, “Silica Dust, Crystalline, in the Form of Quartz or Cristobalite” (2012).

NTP - In its Eleventh Annual Report on Carcinogens, concluded that respirable crystalline silica is known to be a human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust.

OSHA - Crystalline silica is not on the OSHA carcinogen list.

CALIFORNIA PROPOSITION 65 - Crystalline silica in October 1996 was listed on the Safe Drinking Water and Toxic Enforcement ACT of 1986 as a chemical known to the state to cause cancer or reproductive toxicity.

There have been many articles published on the carcinogenicity of crystalline silica, which the reader should consult for additional information; the following are examples of recently published articles: (1) “Dose-Response Meta-Analysis of Silica and Lung Cancer”, Cancer Causes Control, (20):925-33 (2009); (2) “Occupational Silica Exposure and Lung Cancer Risk: A Review of Epidemiological Studies 1996-2005”, Ann Oncol, (17) 1039-50 (2006); (3) “Lung Cancer Among Industrial Sand Workers Exposed to Crystalline Silica”, Am J Epidemiol, (153) 695-703 (2001); (4) “Crystalline Silica and The Risk of Lung Cancer in The Potteries”, Occup Environ Med, (55) 779-785 (1998); (5) “Is Silicosis Required for Silica-Associated Lung Cancer?”, American Journal of Industrial Medicine, (37) 252- 259 (2000); (6) “Silica, Silicosis, and Lung Cancer: A Risk Assessment”, American Journal of Industrial Medicine, (38) 8-18 (2000); (7) “Silica, Silicosis, and Lung Cancer: A Response to a Recent Working Group Report”, Journal of Occupational and Environmental Medicine, (42) 704-720 (2000).

C. AUTOIMMUNE DISEASES

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders, -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. For a review of the subject, the following may be consulted: (1) “Antinuclear Antibody and Rheumatoid Factor in Silica-Exposed Workers”, Arh Hig Rada Toksikol, (60) 185-90 (2009); (2) “Occupational Exposure to Crystalline Silica and Autoimmune Disease”, Environmental Health Perspectives, (107) Supplement 5, 793-802 (1999); (3) “Occupational Scleroderma”, Current Opinion in Rheumatology, (11) 490-494 (1999); (4) “Connective Tissue Disease and Silicosis”, Am J Ind Med, (35), 375-381 (1999).

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to persons with tuberculosis. The following may be consulted for further information: (1) “Tuberculosis and Silicosis: Epidemiology, Diagnosis and Chemoprophylaxis”, J Bras Pneumol, (34) 959-66 (2008); (2) Occupational Lung Disorders, Third Edition, Chapter 12, entitled “Silicosis and Related Diseases”, Parkes, W. Raymond (1994); (3) “Risk of Pulmonary Tuberculosis Relative to Silicosis and Exposure to Silica Dust in South African Gold Miners,” Occup Environ Med, (55) 496-502 (1998); (4) “Occupational Risk Factors for Developing Tuberculosis”, Am J Ind Med, (30) 148-154 (1996).

E. KIDNEY DISEASE

There is evidence that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis is associated with the increased incidence of kidney diseases, including end stage renal disease. For additional information on the subject, the following may be consulted: (1) “Mortality from Lung and Kidney Disease in a Cohort of North American Industrial Sand Workers: An Update”, Ann Occup Hyg, (49) 367-73 (2005); (2) “Kidney Disease and Silicosis”, Nephron, (85) 14-19 (2000); (3) “End Stage Renal Disease Among Ceramic Workers Exposed to Silica”, Occup Environ Med, (56) 559-561 (1999); (4) “Kidney Disease and Arthritis in a Cohort Study of Workers Exposed to Silica”, Epidemiology, (12) 405-412 (2001).

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.**F. NON-MALIGNANT RESPIRATORY DISEASES**

NIOSH has cited the results of studies that report an association between dusts found in various mining operations and non-malignant respiratory disease, particularly among smokers, including bronchitis, emphysema, and small airways disease. *NIOSH Hazard Review – Health Effects of Occupational Exposure to Respirable Crystalline Silica*, published in April 2002, available from NIOSH, 4676 Columbia Parkway, Cincinnati, OH 45226, or at <http://www.cdc.gov/niosh/02-129A.html>.

Respirable dust containing newly broken particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken pieces of silica.

Aluminum Oxide:

Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Inhalation or ingestion of high concentrations of this substance may cause gastrointestinal and/or upper respiratory tract irritation. Eye and skin irritant.

Chronic effect/carcinogenicity: Aluminum oxide is not classifiable as a human carcinogen. On occasion workers chronically exposed to aluminum-containing dusts or fumes have developed severe pulmonary reactions including fibrosis, emphysema and pneumothorax. Long-term exposure may have effects on the central nervous system.

Sodium Oxide:

Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Corrosive – Sodium oxide reacts violently with water to form sodium hydroxide. Causes burns of skin, eyes, respiratory and gastrointestinal tracts, extremely destructive to mucous membranes.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Iron Oxide: (Ferrous and Ferric Oxides)

Exposure route: Inhalation, ingestion, skin

Target organs: Respiratory system, skin, eyes, neurological system

Acute effect: Major findings: stupor, shock, acidosis, hematemesis, bloody diarrhea or coma. Minor findings: vomiting, diarrhea, mild lethargy. Benign pneumoconiosis with X-ray shadows indistinguishable from fibrotic pneumoconiosis. Experimental work in animals exposed by intratracheal injection or by inhalation to iron oxide mixed with less than 5% silica has shown no evidence of fibrosis produced in lung tissue.

Chronic effect/carcinogenicity: Irritability, nausea or vomiting, and normocytic anemia. When exposed to levels greater than 50 to 100 milligram per day, it can result in pathological deposition of iron in the body tissues causing fibrosis of the pancreas, diabetes mellitus, and liver cirrhosis. Workers exposed to iron oxide fume and silica may develop a “mixed dust pneumoconiosis.” Not classifiable as human carcinogen.

Potassium Oxide:

Exposure route: Inhalation, ingestion, eye/skin contact.

Target organs: Respiratory system, gastrointestinal system, eyes, skin.

Acute effect: Corrosive – Potassium oxide reacts violently with water to produce potassium hydroxide. If inhaled, causes sore throat, cough, burning sensation and shortness of breath. Contact with skin produces pain and blisters. Severe deep burns, redness and pain occur with eye contact. Ingestion results in burning sensations, abdominal pain, shock or collapse.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

SECTION XI – TOXICOLOGICAL INFORMATION, CONTD.**Calcium Oxide:**

Exposure route: Inhalation, ingestion, skin/eye contact.

Target organs: Eyes, skin, respiratory system.

Acute effect: Direct contact with tissues, can result in burns and severe irritation because of its high reactivity and alkalinity. Major complaints of workers exposed to lime consist of irritation of the skin and eyes, although inflammation of the respiratory passages, ulceration and perforation of the nasal septum, and even pneumonia has been attributed to inhalation of the dust.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Magnesium Oxide:

Exposure route: Inhalation, eye/skin contact.

Target organs: Eyes, respiratory system.

Acute effect: Magnesium oxide dust caused slight irritation of the eyes and nose, conjunctivitis, inflammation of the mucous membrane, and coughing up discolored sputum after industrial exposures amongst workers exposed to an unspecified concentration of MgO.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen.

Titanium Oxide:

Exposure route: inhalation.

Target organs: respiratory system

Acute effect: Toxicological studies have concluded that titanium oxide is inert, not absorbed by the body, and exerts no toxic effect.

Chronic effect/carcinogenicity: Classified as Group 2B-possibly carcinogenic to humans by IARC

Acute Toxicity Estimates for Granite – Not Available

SECTION XII – ECOLOGICAL INFORMATION

No data available for this product.

SECTION XIII – DISPOSAL CONSIDERATIONS**WASTE DISPOSAL METHOD**

Collect and reuse clean materials. Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

The above information applies to Luck Stone Corporation product only as sold. The product may be contaminated during use and it is the responsibility of the user to assess the appropriate disposal method in that situation.

SECTION XIV – TRANSPORT INFORMATION**DOT HAZARD CLASSIFICATION**

None

PLACARD REQUIRED

None

LABEL REQUIRED

Label as required by the OSHA Hazard Communication standard {29 CFR 1910.1200(f)}, and applicable state and local regulations.

SECTION XV – REGULATORY INFORMATION

OSHA: Crystalline Silica is not listed as a carcinogen.

SARA Title III: Section 311 and 312: Immediate health hazard and delayed health hazard.

TSCA: All components of the product appear on the EPA TSCA chemical substance inventory.

RCRA: The product is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: The product is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR §302.4

EPCRA (Emergency Planning and Community Right to Know Act): The product is not an extremely hazardous substance under regulations of the Emergency Planning and Community Right to Know Act, 40 CFR Part 355, Appendices A and B and is not a toxic chemical subject to the requirements of Section 313.

Clean Air Act: Crystalline silica (quartz) mined and processed by Luck Stone Corporation was not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3). (The FDA standard primarily applies to products containing silica used in the coatings of food contact surfaces).

California Proposition 65: Respirable crystalline silica and titanium dioxide is classified as a substance known to the state of California to be a carcinogen.

SECTION XVI – OTHER INFORMATION**DEFINITIONS OF ACRONYMS/ABBREVIATIONS**

ACGIH: American Conference of Governmental Industrial Hygienists

ANSI: American National Standards Institute

APF: Assigned Protection Factor

California REL: California Inhalation Reference Exposure Limit

CAS: Chemical Abstracts Service

CERCLA: Comprehensive Environmental Response, Compensation and Liability Act

CFR: US Code of Federal Regulations

DHHS: Department of Health and Human Services

EPA: Environmental Protection Agency

EPCRA: Emergency Planning and Community Right to Know Act

FDA: Food and Drug Administration

GHS: Globally Harmonized System

HEPA: High-Efficiency Particulate Air

IARC: International Agency for Research on Cancer

IDLH: Immediately Dangerous to Life and Health

MSHA: Mine Safety and Health Administration

NIOSH: National Institute for Occupational Safety and Health, US Department of Health and Human Services

NIOSH REL: NIOSH Recommended Exposure Limit

NTP: National Toxicology Program

OEL: Occupational Exposure Limit

OSHA: Occupational Safety and Health Administration, US Department of Labor

PEL: Permissible Exposure Limit

PMF: Progressive Massive Fibrosis

RCRA: Resource Conservation and Recovery Act

SARA Title III: Title III of the Superfund Amendments and Reauthorization Act, 1986

SDS: Safety Data Sheet

STOT: Specific Target Organ Toxicity

TLV: Threshold Limit Value

TSCA: Toxic Substance Control Act

TWA: Time-Weighted Average

SECTION XVI – OTHER INFORMATION, CONTD.

User's Responsibility: The OSHA Hazard Communication Standard 29 CFR 1910.1200 requires that this SDS be made available to your employees who handle or may be exposed to this product. Educate and train your employees regarding applicable precautions. Instruct your employees to handle this product properly.

Disclaimer: The information contained in this document applies to this specific material as supplied and Luck Stone Corporation believes that the information contained in this SDS is accurate. The suggested precautions and recommendations are based on recognized good work practices and experience as of the date of publication. They are not necessarily all-inclusive or fully adequate in every circumstance as not all use circumstances can be anticipated. It may not be valid for this material if it is used in combination with other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for one's own particular use. Since the actual use of the product described herein is beyond our control, Luck Stone Corporation, assumes no liability arising out of the use of the product by others. Appropriate warnings and safe handling procedures should be provided to handlers and users. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulation, rules or insurance requirement. However, product must not be used in a manner which could result in harm.

An electronic version of this SDS is available at www.luckstone.com. More information on the effects of crystalline silica exposure may be obtained from OSHA (phone number: 1-800-321-OSHA; website: <http://www.osha.gov>) or from NIOSH (phone number: 1-800-35-NIOSH; website: <http://www.cdc.gov/niosh>).

DATE OF PREPARATION 5/2015

REPLACES 5/2001

NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE IS MADE

Safety Data Sheet - Portland Cement Based Materials

Section 1. Identification

GHS product identifier:	Portland Cement Based Materials
Chemical name:	Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.
Other means of identification:	Cement, masonry cement, mortar cement, portland cement and lime, hydraulic cement, portland cement silicate, portland limestone cement. Covers Products: i.work Saylor's, i.work OPTIMO, i.work Stabil-CEM, i.pro BRIXMENT, i.pro VELVET, i.pro BRICK-LOK, i.pro BLX, i.pro Saylor's PLUS, i.pro Stabil-CEM, i.pro Contempra, i.pro VITA, i.idro Saylor's, i.tech BRIXMENT, i.tech Saylor's, i.tech STONE-HOLD, i.tech Encase-MENT, i.design flamingo-BRIXMENT
Relevant identified uses of the substance or mixture and uses advised against:	Building materials, construction, a basic ingredient in concrete.
Supplier's details:	3251 Bath Pike • Nazareth, PA 18064 • 800-437-7762 • essroc.com • us.i-nova.net County Road 49, Picton, ON. K0K 2T0 • essroc.com • us.i-nova.net
Emergency telephone number (24-hour emergency information)	800-424-9300 Chemtrec

Section 2. Hazards Identification

DANGER! Overexposure to portland cement can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry portland cement.

Portland cement is not classifiable as a human carcinogen.

OSHA/HCS status:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Canadian (WHMIS):	Portland cement products are considered to be hazardous materials under the Hazardous Products Act as defined by the Controlled Products Regulations (CPR).
Classification of the substance or mixture:	SKIN CORROSION/IRRITATION — Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION — Category 1 SKIN SENSITIZATION — Category 1 CARCINOGENICITY/INHALATION — Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] — Category 3

GHS label elements

Hazard pictograms:



Signal word:

Danger

Hazard statements:

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause respiratory irritation.

May cause cancer.

Precautionary statements

Prevention:

Wear protective gloves. Wear eye or face protection. Use only outdoors or in a well-ventilated area. Avoid breathing dust. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Causes eye and skin burns. See Section 4 for additional details. May present risk of engulfment. See Section 7 for additional details. Overexposure to wet cement can cause severe skin damage in the form of chemical burns, including third degree burns. The same severe injury can occur if wet or moist skin is exposed to dry portland cement. Clothing wet with moisture from cement can transmit the caustic effects to the skin, causing chemical burns. Portland cement causes skin burns with little warning; discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE: Contact with wet cement may aggravate existing skin conditions. Sensitivity to hexavalent chromium can be aggravated by exposure.

Response:

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, fibrosis or scar tissue formations in the lungs. Call a POISON CENTER or physician if you feel unwell. **IF ON SKIN:** Wash with plenty of pH neutral soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: get medical attention. Portland cement may contain trace amounts of hexavalent chromium. Hexavalent chromium is associated with allergic skin reactions which may appear as contact dermatitis and skin ulcerations. Persons already sensitized may react to their first exposure to cement. Other individuals may develop allergic dermatitis after repeated exposure to cement. The symptoms of allergic reactions may include reddening of the skin, rash, and irritation. Symptoms of chronic exposure to wet cement may include reddening, irritation, and eczematous rashes. Drying, thickening, and cracking of the skin and nails may also occur. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Exposure to dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amount of dry power or splashes of wet portland cement may cause effects ranging from moderate eye irritation to chemical burns or blindness. Immediately call a POISON CENTER or physician. **IF INGESTED:** Irritating to mouth, throat and stomach. Ingestion of large quantities may cause severe irritation and chemical burns of the mouth, throat, stomach and digestive tract. Do not ingest portland cement. Get immediate medical attention.

Storage:

Keep container tightly closed in a dry and well-ventilated area.

Disposal:

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified:

Not applicable.

Section 3. Composition/information on ingredients

Substance/mixture:

Mixture

Chemical name:

Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.

Other means of identification:

Cement, hydraulic cement, portland cement silicate

CAS number/other identifiers

CAS number: 65997-15-1
 Product code: Not available.

Ingredient name	%	CAS number
Cement, portland chemicals	35 - 100	65997-15-1
The structure of portland cement may contain the following in some concentration ranges:		
Limestone	0 - 65	1317-65-3
Gypsum	2 - 10	13397-24-5
Hydrated Lime	0 - 50	1305-62-0
Cement Kiln Dust	0 - 15	68475-76-3
Iron Oxide	0 - 10	1309-37-1
Bentonite	0 - 10	1302-78-9
Magnesium oxide	0 - 4	1309-48-4
Calcium oxide	0 - 4	1305-78-8
Carbon Black	0 - 2	1333-66-4
Quartz	< 3	14808-60-7
Hexavalent chromium*	Trace	18450-29-9

Any concentration shown as a range is to protect confidentiality or is due to process variation.

*Hexavalent chromium is included due to dermal sensitivity associated with the component.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact:	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.
Inhalation:	Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of portland cement requires immediate medical attention. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.
Skin contact:	Get medical attention immediately. Heavy exposure to portland cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess portland cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated as caustic burns. Portland cement causes skin burns with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure.
Ingestion:	Get medical attention immediately. Call a poison center or physician. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed potential acute health effects

Eye contact:	Causes serious eye damage.
Inhalation:	May cause respiratory irritation.
Skin contact:	Causes severe burns. May cause an allergic skin reaction.
Ingestion:	May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact:	Adverse symptoms may include the following: pain, watering and redness
Inhalation:	Adverse symptoms may include the following: respiratory tract irritation and coughing
Skin contact:	Adverse symptoms may include the following: pain or irritation, redness and blistering may occur, skin burns, ulceration and necrosis may occur
Ingestion:	Adverse symptoms may include the following: stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments:	Not applicable.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media:	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media:	Do not use water jet or water-based fire extinguishers.
Specific hazards arising from the chemical:	No specific fire or explosion hazard.
Hazardous thermal decomposition products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides and metal oxide/oxides
Special protective actions for fire-fighters:	Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders:	For personal protective clothing requirements, please see Section 8.
Environmental precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has entered the environment, including waterways, soil or air. Materials can enter waterways through drainage systems.

Methods and materials for containment and cleaning up

Small spill:	Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of waste material by using a licensed waste disposal contractor.
Large spill:	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place dust in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Large spills to waterways may be hazardous due to alkalinity of the product. Dispose of waste material using a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures:	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material and keep the container tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities:	A key to using the product safely requires the user to recognize that portland cement reacts chemically with water to produce calcium hydroxide which can cause severe chemical burns. Every attempt should be made to avoid skin and eye contact with cement. Do not get portland cement inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement mixtures. Launder/clean clothing and shoes before reuse. Do not enter a confined space that stores or contains portland cement unless appropriate procedures and protection are available. Portland cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Cement, portland, chemicals	ACGIH TLV (United States, 3/2012). TWA: 1 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). TWA: 5 mg/m ³ 10 hours. Form: Respirable fraction TWA: 10 mg/m ³ 10 hours. Form: Total OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust Exposure limits in Canada are under provincial jurisdictions.

Calcium oxide	ACGIH TLV (United States, 3/2012). TWA: 2 mg/m ³ 8 hours. NIOSH REL (United States, 6/2009). TWA: 2 mg/m ³ 10 hours. OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours. Exposure limits in Canada are under provincial jurisdictions.
Limestone	NIOSH REL (United States, 6/2009). TWA: 5 mg/m ³ 10 hours. Form: Respirable fraction TWA: 10 mg/m ³ 10 hours. Form: Total OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust Exposure limits in Canada are under provincial jurisdictions.
Magnesium oxide	ACGIH TLV (United States, 3/2012). TWA: 10 mg/m ³ 8 hours. Form: Inhalable fraction OSHA PEL (United States, 6/2010). TWA: 15 mg/m ³ 8 hours. Form: Total particulates Exposure limits in Canada are under provincial jurisdictions.
Quartz	ACGIH TLV (United States, 3/2012). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). TWA: 0.05 mg/m ³ 10 hours. Form: respirable dust OSHA PEL Z-3 (United States, 9/2005). TWA: 10mg/m ³ divided by %SiO ₂ + 2: Respirable TWA: 30mg/m ³ divided by %SiO ₂ + 2: Total Exposure limits in Canada are under provincial jurisdictions.
Calcium sulfate (gypsum)	ACGIH TLV (United States, 3/2012) TWA: 10 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA 5 mg/m ³ 8 hours. Form: Respirable fraction TWA 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL Z-1 (United States, 2/2006) TWA 5 mg/m ³ 8 hours. Form: Respirable fraction TWA 15 mg/m ³ 8 hours. Form: Total dust Exposure limits in Canada are under provincial jurisdictions.

Appropriate engineering controls:	Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures:	Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by portland cement with a pH neutral soap and clean, uncontaminated water. If clothing becomes saturated with portland cement, garments should be removed and replaced with clean, dry clothing.
Eye/face protection:	To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Wearing contact lenses when working with cement is not recommended.

Skin protection

Hand protection:	Use impervious, waterproof, abrasion and alkali-resistant gloves. Do not rely on barrier creams in place of impervious gloves. Do not get portland cement inside gloves.
Body protection:	Use impervious, waterproof, abrasion and alkali-resistant boots and protective long-sleeved and long-legged clothing to protect the skin from contact with wet portland cement. To reduce foot and ankle exposure, wear impervious boots that are high enough to prevent portland cement from getting inside them. Do not get portland cement inside boots, shoes, or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas of the body.
Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. Footwear and other gear to protect the skin should be approved by a specialist before handling this product.
Respiratory protection:	Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical State:	Solid. [Powder.]	Lower and upper explosive (flammable) limits:	Not applicable.
Color:	Various (Gray or white).	Vapor pressure:	Not applicable.
Odor:	Odorless.	Vapor density:	Not applicable.
Odor threshold:	Not available.	Relative density:	2.3 to 3.1
pH:	>11.5 [Conc. (% w/w): 1%]	Solubility:	Slightly soluble in water.
Melting point:	Not available.	Solubility in water:	0.1 to 1%
Boiling point:	>1000°C (>1832°F)	Partition coefficient: n-octanol/water:	Not applicable.
Flash point:	Not flammable. Not combustible.	Auto-ignition temperature:	Not applicable.
Burning time:	Not available.	Decomposition temperature:	Not available.
Burning rate:	Not available.	SADT:	Not available.
Evaporation rate:	Not applicable.	Viscosity:	Not applicable.
Flammability (solid, gas):	Not applicable.		

Section 10. Stability and reactivity

Reactivity:	Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.
Chemical stability:	The product is stable.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	No specific data.
Incompatible materials:	Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Portland cement is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved. Reacts with acids, aluminum metals and ammonium salts. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas — silicon tetrafluoride.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity: Portland Cement LD50/LC50 = Not available

Irritation/Corrosion: Skin: May cause skin irritation. May cause serious burns in the presence of moisture.
 Eyes: Causes serious eye damage. May cause burns in the presence of moisture.
 Respiratory: May cause respiratory tract irritation.

Sensitization: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.

Mutagenicity: There are no data available.

Carcinogenicity:

Classification

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Cement, portland, chemicals	—	—	A4	—
Quartz	—	1	A2	Known to be a human carcinogen.

Reproductive toxicity: There are no data available.

Teratogenicity: There are no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of Exposure	Target Organs
Calcium oxide	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation
Cement, portland, chemicals	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of Exposure	Target Organs
Quartz	Category 1	Inhalation	Respiratory tract and kidneys

Aspiration hazard: There are no data available.

Information on the likely routes of exposure

Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects: Eye contact: Causes serious eye damage.
 Inhalation: May cause respiratory irritation.
 Skin contact: Causes severe burns. May cause an allergic skin reaction.
 Ingestion: May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics:

Eye contact: Adverse symptoms may include the following: pain, watering, redness

Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing

Skin contact: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, skin burns, ulcerations and necrosis may occur

Ingestion: Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure:

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects:

General: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. If sensitized to hexavalent chromium, a severe allergic dermal reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Portland cement is not classifiable as a human carcinogen. Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity. Excessive exposure to crystalline silica can cause silicosis, a non-cancerous lung disease.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity:

Acute toxicity estimates: There are no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Calcium oxide	Chronic NOEC 100 mg/L Fresh water	Fish— <i>Oreochromis niloticus</i> —Juvenile (Fledgling, Hatchling, Weanling)	46 days

Persistence and degradability:

There are no data available.

Bioaccumulative potential:

There are no data available.

Mobility in soil:

Soil/water partition coefficient (K_{oc}): Not available.

Other adverse effects:

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Untreated waste should not be released to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe manner. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff, and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	—	—	—
Transport hazard class(es)	—	—	—
Packing group	—	—	—
Environmental hazards	None.	None.	None.
Additional information	—	—	—

Portland Cement products are not considered hazardous under Transport Canada's Transportation of Dangerous Goods (TDG) regulations.

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations: TSCA 6 final risk management: Chromium, ion (Cr6+)
 United States inventory (TSCA 8b): Portland cements are considered to be statutory mixtures under TSCA. CAS 65997-15-1 is included on the TSCA inventory.
 Clean Water Act (CWA) 307: Chromium, ion (Cr6+)
 CERCLA: This product is not listed as a CERCLA substance.

Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs) — Not listed

Clean Air Act Section 602: Class I Substances — Not listed

Clean Air Act Section 602: Class II Substances — Not listed

DEA List I Chemicals: (Precursor Chemicals) — Not listed

DEA List II Chemicals: (Essential Chemicals) — Not listed

SARA 311/312

Classification: Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Calcium oxide	A-B	No.	No.	No.	Yes.	No.
Quartz	< 0.2	No.	No.	No.	No.	Yes.
Chromium, ion (Cr6+)	< 0.1	No.	No.	No.	Yes.	Yes.
Nickel Compounds	< 0.1	No.	No.	No.	Yes.	Yes.
Lead (Organic & Inorganic)	< 0.1	No.	No.	No.	No.	Yes.

SARA 313

	Product name	CAS number	%
Form R—Reporting requirements	Chromium, ion (Cr6+)	8540-29-9	< 0.1
	Lead (Organic or Inorganic)	—	< 0.1
	Nickel Compounds	—	< 0.1
Supplier notification	Alternatively, if any of the compounds are not present, state: This product does not contain any constituents listed under SARA Title III Section 313.		

Canada

WHMIS/DSL: Products containing crystalline silica and calcium carbonate are classified as D2A, E and are subject to WHMIS requirements.

State regulations

Massachusetts:	The following components are listed: cement, portland, chemicals, limestone
New York:	None of the components are listed.
New Jersey:	The following components are listed: cement, portland, chemicals, gypsum, limestone
Pennsylvania:	The following components are listed: cement, portland, chemicals, gypsum, limestone

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the above warning in the absence of definitive testing to prove the defined risks do not exist.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Quartz	Yes.	No.	No.	No.
Chromium, ion (Cr6+)	Yes.	Yes.	0.001 µg/day (inhalation)	8.2 micrograms/day (ingestion)
Nickel Compounds	No.	No.	No.	No.
Lead	Yes.	Yes.	15 µg/day (ingestion)	0.5 micrograms/day (inhalation)

International regulations

International lists:	Canadian Domestic Substances List (DSL): Portland cement is included on the DSL. Mexico Inventory (INSQ): All components are listed or exempted.
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Section 16. Other information

History

Date of issue mm/dd/yyyy: 05/15/2015
Version: 1
Revised Section(s): Not applicable.

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of portland cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with portland cement to produce portland cement products. Users should review other relevant material safety data sheets before working with this portland cement or working on portland cement products, for example, portland cement concrete.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Essroc Cement Corp., except that the product shall conform to contracted specifications. The information provided herein was believed by the Essroc Cement Corp. to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation
GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations

Safety Data Sheet - Portland Cement Based Materials

Section 1. Identification

GHS product identifier:	Portland Cement Based Materials
Chemical name:	Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.
Other means of identification:	Cement, masonry cement, mortar cement, portland cement and lime, hydraulic cement, portland cement silicate, portland limestone cement. Covers Products: i.work Saylor's, i.work OPTIMO, i.work Stabil-CEM, i.pro BRIXMENT, i.pro VELVET, i.pro BRICK-LOK, i.pro BLX, i.pro Saylor's PLUS, i.pro Stabil-CEM, i.pro Contempra, i.pro VITA, i.idro Saylor's, i.tech BRIXMENT, i.tech Saylor's, i.tech STONE-HOLD, i.tech Encase-MENT, i.design flamingo-BRIXMENT
Relevant identified uses of the substance or mixture and uses advised against:	Building materials, construction, a basic ingredient in concrete.
Supplier's details:	3251 Bath Pike • Nazareth, PA 18064 • 800-437-7762 • essroc.com • us.i-nova.net County Road 49, Picton, ON. K0K 2T0 • essroc.com • us.i-nova.net
Emergency telephone number (24-hour emergency information)	800-424-9300 Chemtrec

Section 2. Hazards Identification

DANGER! Overexposure to portland cement can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry portland cement.

Portland cement is not classifiable as a human carcinogen.

OSHA/HCS status:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Canadian (WHMIS):	Portland cement products are considered to be hazardous materials under the Hazardous Products Act as defined by the Controlled Products Regulations (CPR).
Classification of the substance or mixture:	SKIN CORROSION/IRRITATION — Category 1 SERIOUS EYE DAMAGE/ EYE IRRITATION — Category 1 SKIN SENSITIZATION — Category 1 CARCINOGENICITY/INHALATION — Category 1 SPECIFIC TARGET ORGAN TOXICITY (SINGLE EXPOSURE) [Respiratory tract irritation] — Category 3

GHS label elements

Hazard pictograms:



Signal word:

Danger

Hazard statements:

Causes severe skin burns and eye damage.

May cause an allergic skin reaction.

May cause respiratory irritation.

May cause cancer.

Precautionary statements

Prevention:

Wear protective gloves. Wear eye or face protection. Use only outdoors or in a well-ventilated area. Avoid breathing dust. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Causes eye and skin burns. See Section 4 for additional details. May present risk of engulfment. See Section 7 for additional details. Overexposure to wet cement can cause severe skin damage in the form of chemical burns, including third degree burns. The same severe injury can occur if wet or moist skin is exposed to dry portland cement. Clothing wet with moisture from cement can transmit the caustic effects to the skin, causing chemical burns. Portland cement causes skin burns with little warning; discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE: Contact with wet cement may aggravate existing skin conditions. Sensitivity to hexavalent chromium can be aggravated by exposure.

Response:

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, fibrosis or scar tissue formations in the lungs. Call a POISON CENTER or physician if you feel unwell. **IF ON SKIN:** Wash with plenty of pH neutral soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: get medical attention. Portland cement may contain trace amounts of hexavalent chromium. Hexavalent chromium is associated with allergic skin reactions which may appear as contact dermatitis and skin ulcerations. Persons already sensitized may react to their first exposure to cement. Other individuals may develop allergic dermatitis after repeated exposure to cement. The symptoms of allergic reactions may include reddening of the skin, rash, and irritation. Symptoms of chronic exposure to wet cement may include reddening, irritation, and eczematous rashes. Drying, thickening, and cracking of the skin and nails may also occur. **IF IN EYES:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Exposure to dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amount of dry power or splashes of wet portland cement may cause effects ranging from moderate eye irritation to chemical burns or blindness. Immediately call a POISON CENTER or physician. **IF INGESTED:** Irritating to mouth, throat and stomach. Ingestion of large quantities may cause severe irritation and chemical burns of the mouth, throat, stomach and digestive tract. Do not ingest portland cement. Get immediate medical attention.

Storage:

Keep container tightly closed in a dry and well-ventilated area.

Disposal:

Dispose of contents and container in accordance with all local, regional, national and international regulations.

Hazards not otherwise classified:

Not applicable.

Section 3. Composition/information on ingredients

Substance/mixture:

Mixture

Chemical name:

Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.

Other means of identification:

Cement, hydraulic cement, portland cement silicate

CAS number/other identifiers

CAS number: 65997-15-1
 Product code: Not available.

Ingredient name	%	CAS number
Cement, portland chemicals	35 - 100	65997-15-1
The structure of portland cement may contain the following in some concentration ranges:		
Limestone	0 - 65	1317-65-3
Gypsum	2 - 10	13397-24-5
Hydrated Lime	0 - 50	1305-62-0
Cement Kiln Dust	0 - 15	68475-76-3
Iron Oxide	0 - 10	1309-37-1
Bentonite	0 - 10	1302-78-9
Magnesium oxide	0 - 4	1309-48-4
Calcium oxide	0 - 4	1305-78-8
Carbon Black	0 - 2	1333-66-4
Quartz	< 3	14808-60-7
Hexavalent chromium*	Trace	18450-29-9

Any concentration shown as a range is to protect confidentiality or is due to process variation.

*Hexavalent chromium is included due to dermal sensitivity associated with the component.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye contact:	Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.
Inhalation:	Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of portland cement requires immediate medical attention. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.
Skin contact:	Get medical attention immediately. Heavy exposure to portland cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess portland cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated as caustic burns. Portland cement causes skin burns with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure.
Ingestion:	Get medical attention immediately. Call a poison center or physician. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Most important symptoms/effects, acute and delayed potential acute health effects

Eye contact:	Causes serious eye damage.
Inhalation:	May cause respiratory irritation.
Skin contact:	Causes severe burns. May cause an allergic skin reaction.
Ingestion:	May cause burns to mouth, throat and stomach.

Over-exposure signs/symptoms

Eye contact:	Adverse symptoms may include the following: pain, watering and redness
Inhalation:	Adverse symptoms may include the following: respiratory tract irritation and coughing
Skin contact:	Adverse symptoms may include the following: pain or irritation, redness and blistering may occur, skin burns, ulceration and necrosis may occur
Ingestion:	Adverse symptoms may include the following: stomach pains

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician:	Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.
Specific treatments:	Not applicable.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media:	Use an extinguishing agent suitable for the surrounding fire.
Unsuitable extinguishing media:	Do not use water jet or water-based fire extinguishers.
Specific hazards arising from the chemical:	No specific fire or explosion hazard.
Hazardous thermal decomposition products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides and metal oxide/oxides
Special protective actions for fire-fighters:	Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.
Special protective equipment for fire-fighters:	Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

For non-emergency personnel:	No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.
For emergency responders:	For personal protective clothing requirements, please see Section 8.
Environmental precautions:	Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if the product has entered the environment, including waterways, soil or air. Materials can enter waterways through drainage systems.

Methods and materials for containment and cleaning up

Small spill:	Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of waste material by using a licensed waste disposal contractor.
Large spill:	Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place dust in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Large spills to waterways may be hazardous due to alkalinity of the product. Dispose of waste material using a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

Section 7. Handling and storage

Precautions for safe handling

Protective measures:	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material and keep the container tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.
Advice on general occupational hygiene:	Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.
Conditions for safe storage, including any incompatibilities:	A key to using the product safely requires the user to recognize that portland cement reacts chemically with water to produce calcium hydroxide which can cause severe chemical burns. Every attempt should be made to avoid skin and eye contact with cement. Do not get portland cement inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement mixtures. Launder/clean clothing and shoes before reuse. Do not enter a confined space that stores or contains portland cement unless appropriate procedures and protection are available. Portland cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits

Ingredient name	Exposure limits
Cement, portland, chemicals	ACGIH TLV (United States, 3/2012). TWA: 1 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). TWA: 5 mg/m ³ 10 hours. Form: Respirable fraction TWA: 10 mg/m ³ 10 hours. Form: Total OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust Exposure limits in Canada are under provincial jurisdictions.

Calcium oxide	ACGIH TLV (United States, 3/2012). TWA: 2 mg/m ³ 8 hours. NIOSH REL (United States, 6/2009). TWA: 2 mg/m ³ 10 hours. OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours. Exposure limits in Canada are under provincial jurisdictions.
Limestone	NIOSH REL (United States, 6/2009). TWA: 5 mg/m ³ 10 hours. Form: Respirable fraction TWA: 10 mg/m ³ 10 hours. Form: Total OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours. Form: Respirable fraction TWA: 15 mg/m ³ 8 hours. Form: Total dust Exposure limits in Canada are under provincial jurisdictions.
Magnesium oxide	ACGIH TLV (United States, 3/2012). TWA: 10 mg/m ³ 8 hours. Form: Inhalable fraction OSHA PEL (United States, 6/2010). TWA: 15 mg/m ³ 8 hours. Form: Total particulates Exposure limits in Canada are under provincial jurisdictions.
Quartz	ACGIH TLV (United States, 3/2012). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009). TWA: 0.05 mg/m ³ 10 hours. Form: respirable dust OSHA PEL Z-3 (United States, 9/2005). TWA: 10mg/m ³ divided by %SiO ₂ + 2: Respirable TWA: 30mg/m ³ divided by %SiO ₂ + 2: Total Exposure limits in Canada are under provincial jurisdictions.
Calcium sulfate (gypsum)	ACGIH TLV (United States, 3/2012) TWA: 10 mg/m ³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA 5 mg/m ³ 8 hours. Form: Respirable fraction TWA 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL Z-1 (United States, 2/2006) TWA 5 mg/m ³ 8 hours. Form: Respirable fraction TWA 15 mg/m ³ 8 hours. Form: Total dust Exposure limits in Canada are under provincial jurisdictions.

Appropriate engineering controls:	Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.
Environmental exposure controls:	Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Individual protection measures

Hygiene measures:	Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by portland cement with a pH neutral soap and clean, uncontaminated water. If clothing becomes saturated with portland cement, garments should be removed and replaced with clean, dry clothing.
Eye/face protection:	To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Wearing contact lenses when working with cement is not recommended.

Skin protection

Hand protection:	Use impervious, waterproof, abrasion and alkali-resistant gloves. Do not rely on barrier creams in place of impervious gloves. Do not get portland cement inside gloves.
Body protection:	Use impervious, waterproof, abrasion and alkali-resistant boots and protective long-sleeved and long-legged clothing to protect the skin from contact with wet portland cement. To reduce foot and ankle exposure, wear impervious boots that are high enough to prevent portland cement from getting inside them. Do not get portland cement inside boots, shoes, or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas of the body.
Other skin protection:	Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. Footwear and other gear to protect the skin should be approved by a specialist before handling this product.
Respiratory protection:	Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Section 9. Physical and chemical properties

Appearance

Physical State:	Solid. [Powder.]	Lower and upper explosive (flammable) limits:	Not applicable.
Color:	Various (Gray or white).	Vapor pressure:	Not applicable.
Odor:	Odorless.	Vapor density:	Not applicable.
Odor threshold:	Not available.	Relative density:	2.3 to 3.1
pH:	>11.5 [Conc. (% w/w): 1%]	Solubility:	Slightly soluble in water.
Melting point:	Not available.	Solubility in water:	0.1 to 1%
Boiling point:	>1000°C (>1832°F)	Partition coefficient: n-octanol/water:	Not applicable.
Flash point:	Not flammable. Not combustible.	Auto-ignition temperature:	Not applicable.
Burning time:	Not available.	Decomposition temperature:	Not available.
Burning rate:	Not available.	SADT:	Not available.
Evaporation rate:	Not applicable.	Viscosity:	Not applicable.
Flammability (solid, gas):	Not applicable.		

Section 10. Stability and reactivity

Reactivity:	Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.
Chemical stability:	The product is stable.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	No specific data.
Incompatible materials:	Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Portland cement is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved. Reacts with acids, aluminum metals and ammonium salts. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas — silicon tetrafluoride.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity: Portland Cement LD50/LC50 = Not available

Irritation/Corrosion: Skin: May cause skin irritation. May cause serious burns in the presence of moisture.
 Eyes: Causes serious eye damage. May cause burns in the presence of moisture.
 Respiratory: May cause respiratory tract irritation.

Sensitization: May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.

Mutagenicity: There are no data available.

Carcinogenicity:

Classification

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Cement, portland, chemicals	—	—	A4	—
Quartz	—	1	A2	Known to be a human carcinogen.

Reproductive toxicity: There are no data available.

Teratogenicity: There are no data available.

Specific target organ toxicity (single exposure)

Name	Category	Route of Exposure	Target Organs
Calcium oxide	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation
Cement, portland, chemicals	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation

Specific target organ toxicity (repeated exposure)

Name	Category	Route of Exposure	Target Organs
Quartz	Category 1	Inhalation	Respiratory tract and kidneys

Aspiration hazard: There are no data available.

Information on the likely routes of exposure

Dermal contact. Eye contact. Inhalation. Ingestion.

Potential acute health effects: Eye contact: Causes serious eye damage.
 Inhalation: May cause respiratory irritation.
 Skin contact: Causes severe burns. May cause an allergic skin reaction.
 Ingestion: May cause burns to mouth, throat and stomach.

Symptoms related to the physical, chemical and toxicological characteristics:

Eye contact: Adverse symptoms may include the following: pain, watering, redness

Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing

Skin contact: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, skin burns, ulcerations and necrosis may occur

Ingestion: Adverse symptoms may include the following: stomach pains

Delayed and immediate effects and also chronic effects from short and long term exposure:

Short term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Long term exposure

Potential immediate effects: No known significant effects or critical hazards.

Potential delayed effects: No known significant effects or critical hazards.

Potential chronic health effects:

General: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. If sensitized to hexavalent chromium, a severe allergic dermal reaction may occur when subsequently exposed to very low levels.

Carcinogenicity: Portland cement is not classifiable as a human carcinogen. Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity. Excessive exposure to crystalline silica can cause silicosis, a non-cancerous lung disease.

Mutagenicity: No known significant effects or critical hazards.

Teratogenicity: No known significant effects or critical hazards.

Developmental effects: No known significant effects or critical hazards.

Fertility effects: No known significant effects or critical hazards.

Numerical measures of toxicity:

Acute toxicity estimates: There are no data available.

Section 12. Ecological information

Toxicity

Product/ingredient name	Result	Species	Exposure
Calcium oxide	Chronic NOEC 100 mg/L Fresh water	Fish— <i>Oreochromis niloticus</i> —Juvenile (Fledgling, Hatchling, Weanling)	46 days

Persistence and degradability:

There are no data available.

Bioaccumulative potential:

There are no data available.

Mobility in soil:

Soil/water partition coefficient (Koc): Not available.

Other adverse effects:

No known significant effects or critical hazards.

Section 13. Disposal considerations

Disposal methods:

The generation of waste should be avoided or minimized wherever possible. Disposal of this product, solutions and any by-products should comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements. Dispose of surplus and non-recyclable products via a licensed waste disposal contractor. Untreated waste should not be released to the sewer unless fully compliant with the requirements of all authorities with jurisdiction. Waste packaging should be recycled. Incineration or landfill should only be considered when recycling is not feasible. This material and its container must be disposed of in a safe manner. Care should be taken when handling empty containers that have not been cleaned or rinsed out. Empty containers or liners may retain some product residues. Avoid dispersal of spilled material and runoff, and contact with soil, waterways, drains and sewers.

Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	—	—	—
Transport hazard class(es)	—	—	—
Packing group	—	—	—
Environmental hazards	None.	None.	None.
Additional information	—	—	—

Portland Cement products are not considered hazardous under Transport Canada's Transportation of Dangerous Goods (TDG) regulations.

Special precautions for user: Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: Not available.

Section 15. Regulatory information

U.S. Federal regulations: TSCA 6 final risk management: Chromium, ion (Cr6+)
 United States inventory (TSCA 8b): Portland cements are considered to be statutory mixtures under TSCA. CAS 65997-15-1 is included on the TSCA inventory.
 Clean Water Act (CWA) 307: Chromium, ion (Cr6+)
 CERCLA: This product is not listed as a CERCLA substance.

Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs) — Not listed

Clean Air Act Section 602: Class I Substances — Not listed

Clean Air Act Section 602: Class II Substances — Not listed

DEA List I Chemicals: (Precursor Chemicals) — Not listed

DEA List II Chemicals: (Essential Chemicals) — Not listed

SARA 311/312

Classification: Immediate (acute) health hazard
 Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Calcium oxide	A-B	No.	No.	No.	Yes.	No.
Quartz	< 0.2	No.	No.	No.	No.	Yes.
Chromium, ion (Cr6+)	< 0.1	No.	No.	No.	Yes.	Yes.
Nickel Compounds	< 0.1	No.	No.	No.	Yes.	Yes.
Lead (Organic & Inorganic)	< 0.1	No.	No.	No.	No.	Yes.

SARA 313

	Product name	CAS number	%
Form R—Reporting requirements	Chromium, ion (Cr6+)	8540-29-9	< 0.1
	Lead (Organic or Inorganic)	—	< 0.1
	Nickel Compounds	—	< 0.1
Supplier notification	Alternatively, if any of the compounds are not present, state: This product does not contain any constituents listed under SARA Title III Section 313.		

Canada

WHMIS/DSL: Products containing crystalline silica and calcium carbonate are classified as D2A, E and are subject to WHMIS requirements.

State regulations

Massachusetts:	The following components are listed: cement, portland, chemicals, limestone
New York:	None of the components are listed.
New Jersey:	The following components are listed: cement, portland, chemicals, gypsum, limestone
Pennsylvania:	The following components are listed: cement, portland, chemicals, gypsum, limestone

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the above warning in the absence of definitive testing to prove the defined risks do not exist.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Quartz	Yes.	No.	No.	No.
Chromium, ion (Cr6+)	Yes.	Yes.	0.001 µg/day (inhalation)	8.2 micrograms/day (ingestion)
Nickel Compounds	No.	No.	No.	No.
Lead	Yes.	Yes.	15 µg/day (ingestion)	0.5 micrograms/day (inhalation)

International regulations

International lists:	Canadian Domestic Substances List (DSL): Portland cement is included on the DSL. Mexico Inventory (INSQ): All components are listed or exempted.
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Section 16. Other information

History

Date of issue mm/dd/yyyy: 05/15/2015
Version: 1
Revised Section(s): Not applicable.

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of portland cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with portland cement to produce portland cement products. Users should review other relevant material safety data sheets before working with this portland cement or working on portland cement products, for example, portland cement concrete.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Essroc Cement Corp., except that the product shall conform to contracted specifications. The information provided herein was believed by the Essroc Cement Corp. to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation
GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations



SAFETY DATA SHEET

Name of Material Trowel Patch	
1	HEALTH
1	FLAMMABILITY
0	REACTIVITY
B	PROTECTIVE EQUIPMENT

Section I – PRODUCT AND COMPANY IDENTIFICATION

Product Name: Latexite® Trowel Patch (1gallon, 2gallon)

Manufacturer Name: Dalton Enterprises, Inc.

Item #: 1 gal: 32016; 2 gal: 32051

UPC #: 1 gal: 090932320161; 2 gal: 090932320511

Address: 131 Willow Street Cheshire, CT 06410

Telephone Number: (203) 272-3221

24 Hour Emergency Number: (203) 272-3221

U.S. And Canada: (203) 272-3221

Trade Names and Synonyms: Asphalt Patch Materials

Recommended Use and Restrictions: Filler for asphalt pavement

Section II – HAZARDS IDENTIFICATION

Classification

Skin Corrosion/Irritation	Category 2
Serious Eye Damage, Eye Irritation	Category 2
Carcinogenicity	1A

Label Elements

Signal Word: Warning

Hazard Statements:

Harmful if swallowed

May cause skin irritation

May cause cancer



GHS Pictogram:

Precautionary Statements – Prevention

Obtain special instructions before use

Do not handle until all safety precautions have been read and understood

Use personal protective equipment as required

Wash face, hands and any exposed skin thoroughly after handling

Do not eat, drink or smoke when using this product

Use only outdoors or in a well-ventilated area

Eyes: Contact may cause irritation.

Skin: Prolonged or repeated contact may cause irritation.

Ingestion: May cause nausea, vomiting and diarrhea.

Inhalation: May cause irritation

Precautionary Statements - Storage

Store locked up

Precautionary Statements - Disposal

Dispose of contents/container in accordance with local regulations.

Hazards not otherwise classified (HNOC)

Not applicable

Unknown Toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity

Other information

No information available

Interactions with Other Chemicals

No information available.

Section III – COMPOSITION

<u>CAS#</u>	<u>Component</u>	<u>% Composition</u>
8052-42-4	Petroleum Asphalt	40-55
1332-58-7	Clay/Arcilla	15-20
14808-60-7	Crystalline Silica	10-25
7732-18-5	Water	25-35

Section IV – FIRST-AID MEASURES

Emergency and First Aid Procedures

General Advice: Present this safety data sheet to the physician in attendance.

Eye Contact: Flush thoroughly with water. If irritation persists, see a physician.

Skin Contact: Clean exposed area thoroughly with soap and water. If irritation persists see a physician.

Ingestion: If swallowed do NOT induce vomiting. Seek medical attention if symptoms develop.

Inhalation: Move to fresh air if symptoms develop. If irritation persists see a physician.

Most Important Symptoms: Possibility of minor eye and skin irritation.

Indication of Immediate Medical Attention and Special Treatment Needed: Treat Symptomatically

Section V – FIRE-FIGHTING MEASURES

Suitable Extinguishing Media: CO2, dry chemical, foam, sand.

Unsuitable Extinguishing Media: N/A

Specific Hazards arising From the Chemical: Combustion may yield fumes, smoke, carbon monoxide and carbon dioxide.

Special Protective Equipment and Precautions for Firefighters: Wear full protective clothing, including self-contained breathing apparatus (Positive Pressure/Pressure Demand), helmet, and face mask.

Section VI – ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures: Avoid skin and eye contact, use proper protective equipment recommended in section 8.

Methods and Materials for Containment and Cleanup: Contain spill and dike with inert material (sand, sawdust, dirt, etc.). Place in closed container for proper disposal. Avoid runoff to waterways and sewers. Dispose of in accordance with local regulations.

Section VII – HANDLING AND STORAGE

Precautions for Safe Handling: Store in a dry area, avoid eye contact and wash thoroughly after handling
Conditions for Safe Storage, Including Incompatibilities: Keep container closed and upright to prevent leakage. Store in a cool, dry, ventilated area. Avoid freezing. Keep container upright to prevent leakage.

Section VIII – EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

<u>Component</u>	<u>ACGIH TWA (mg/m³)</u>	<u>OSHA PEL (TWA) (mg/m³)</u>
Petroleum Asphalt	0.5 mg/m ³	-
Crystalline Silica	0.025 mg/m ³	(30)/(%SiO ₂ + 2) mg/m ³ TWA, total dust (250)/(%SiO ₂ + 5) mppcf TWA, respirable fraction (10)/(%SiO ₂ + 2) mg/m ³ TWA, respirable fraction

Engineering Controls: Ensure adequate ventilation

Individual Protection Measures

Eyes/Face: Safety goggles

Skin: Gloves

Respiratory: None required if good ventilation is maintained. This product is an emulsified, encapsulated mixture which greatly reduces the likelihood of exposure to hazardous particles.

Hygienic controls: Wash thoroughly with soap and water before eating or drinking. Wash contaminated clothing.

Section IX – PHYSICAL AND CHEMICAL PROPERTIES

Appearance: Dark brown to black

Physical State: liquid/paste

Odor: Asphaltic odor

Odor Threshold: N/A

pH: 7.5 – 9.5

Melting Point: N/A

Boiling Point: >100°C / 212°F

Flash Point: N/A

Evaporation Rate: N/A

Flammability: N/A

Upper Explosive Limit: N/A

Lower Explosive Limit: N/A

Vapor Pressure: 17mm Hg

Vapor Density: Heavier than air

Specific Gravity: 1.20

Solubility In Water: Easily dispersible

Partition Coefficient (n-octanol/water): N/A

Auto Ignition Temperature: N/A

Decomposition Temperature: N/A

Max Voc: < 50g/L

Section X – STABILITY AND REACTIVITY

Reactivity: None known under normal conditions

Stability: Stable

Hazardous Reactions: None known under normal conditions

Conditions to avoid: Keep from freezing and extreme heat

Incompatibility: Strong oxidizers

Hazardous Decomposition Products: Combustion may yield fumes, smoke, carbon monoxide and carbon dioxide.

Section XI – TOXICOLOGICAL INFORMATION

Health Effects

Eye Contact: Minor irritation may result

Skin Contact: Minor irritation may result

Ingestion: Minor irritation may result

Inhalation: Minor irritation may result

Toxicological Effects

<u>Component</u>	<u>CAS #</u>	<u>Acute oral toxicity LD50</u>	<u>Acute dermal toxicity LD50</u>
Petroleum Asphalt	8052-42-4	5,001 mg/kg (rat)	2,001 mg/kg (rat)
Crystalline Silica	14808-60-7	1,300 mg/kg (rat)	no data available

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Sensitization: Product not known to cause sensitization

Mutagenic Effects: None known

Carcinogenicity: May cause cancer

<u>Component</u>	<u>CAS #</u>	<u>IARC</u>	<u>NTP</u>	<u>OSHA</u>
Petroleum Asphalt	8052-42-4	2B	Suspected	
Crystalline Silica	14808-60-7	Group 1	Known	

Crystalline silica in respirable form is carcinogenic to humans. The crystalline silica present is not respirable as this product is supplied. IARC has determined that there is inadequate evidence of carcinogenic effects of petroleum asphalt in humans, and limited evidence of carcinogenic effects to experimental animals.

Reproductive Toxicity: No toxicity known

STOT – Single Exposure: None Known

STOT – Repeated Exposure: None Known

Chronic Toxicity: No Known Effect

Target Organ Effects: Eyes, Skin.

Aspiration Hazard: Based on available data, the classification criteria are not met.

Numerical Measures of Toxicity

No data available

Section XII – ECOLOGICAL INFORMATION

Ecological Fate:	No data available
Persistence/Degradability:	No data available
Bioaccumulation Potential:	No data available
Mobility in Soil:	No data available
Other Adverse Effects:	No data available

Analysis for ecological effects has not been conducted.

Section XIII – DISPOSAL CONSIDERATIONS

Waste Disposal Information: Dispose of in accordance with federal, state, and local regulations.

Section XIV – TRANSPORT INFORMATION

DOT

Proper Shipping Name: Not regulated

UN Number: N/A

Hazard Class: N/A

Section XV – REGULATORY INFORMATION

International Inventories

TSCA: Complies

US Federal Regulations

SARA 313: This product contains no chemicals subject to Annual Release Reporting Requirements under SARA Title III, Section 313 (40 CFR 372)

SARA Hazard Category (311/312): Non Hazardous

CWA (Clean Water Act): This product contains no chemicals regulated by the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42)

CERCLA: This product contains no substances regulated by the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302)

US State Regulations

Component Name	CAS	State Right to Know		
		MA	NJ	PA
Petroleum Asphalt	8052-42-4	yes	yes	yes
Mineral Filler	1332-58-7	yes	yes	yes
Crystalline Silica	14808-60-7	yes	yes	yes
Water	7732-18-5	no	no	no

California Prop 65:

WARNING! This product contains a chemical known to the State of California to cause cancer: Asphalt (CAS-No: 8052-42-4) and Crystalline Silica (CAS-No: 14808-60-7).

International Regulations

WHMIS: Non Hazardous

Section XV – OTHER INFORMATION

Other precautions:

Keep out of reach of children.

Always read label plus precautions and follow directions carefully.

Do not breathe vapor or spray mist.

Use only with adequate ventilation.

Do not take internally.

Avoid contact with eyes and skin.

Wash thoroughly after using.

Additional Technical Data Sheets and/or SDS are available upon request.

NFPA Rating: Health 1; Fire 1; Reactivity 0

Revision Date: 04/01/15

Supersedes: 08/24/12

Prepared by: RL

Disclaimer/Statement of Liability:

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SAFETY DATA SHEET

MAG[®] - MAGNESIUM CHLORIDE FLAKES

MSDS NO.: KC009

Rev Date: 03-02-2015

Rev. Num. 00

1. IDENTIFICATION:

COMPANY NAME: Knight Chemicals LLC
ADDRESS: 7320 W. Florist Ave
Milwaukee, WI 53218
TELEPHONE: 1(800)825-7650
FAX: 1(414)461-0903
EMERGENCY CONTACT: Call CHEMTREC at 800-424-9300 for 24 hour Emergency Response involving a spill, leak, fire, exposure, or accident.
MANUFACTURER: Dead Sea Works LTD. – P.O.B. Beer Sheva 84100, Isreal
PRODUCT NAME / USE: MAG[®] - Magnesium Chloride Flakes

2. HAZARD(S) IDENTIFICATION:

EMERGENCY OVERVIEW:

APPEARANCE: White to off-white solid Flakes
ODOR: None
REACTIVITY: None
PRIMARY ROUTE OF ENTRY: Skin Contact

POTENTIAL HEALTH EFFECTS:

EYE: May cause moderate eye irritation. Rinse with water for at least 15 minutes (open eyes).

SKIN CONTACT: Short single exposure not likely to cause significant skin irritation

SKIN ABSORPTION: The substance is not dangerous. However, over exposure or contact with open wounds may cause slight irritation.

INGESTION: The substance is not dangerous. Obtain medical attention if discomfort continues.

INHALATION: The substance is not dangerous by inhalation.

3. COMPOSITION / INFORMATION ON INGREDIENTS:

PRODUCT TRADE NAME: MAG®
CHEMICAL NAME: Magnesium Chloride Flakes
SYNONYMS: Magnesium Chloride Flakes
CHEMICAL FAMILY: Inorganic Salt
MOLECULAR FORMULA: MgCl₂
CAS NUMBER: 007791-18-6

<u>CHEMICAL</u>	<u>CAS No.</u>	<u>TLV (ACGIH)</u>	<u>PEL (OSHA)</u>
Magnesium Chloride	007791-18-6	None Established	
Calcium Chloride	010043-52-4	None Established	
Sodium Chloride	007647-14-5	None Established	
Potassium Chloride	007447-40-7	None Established	
Water	007732-18-5	None Established	

4. FIRST AID MEASURES

EYES: Irrigate with flowing water immediately and continuously for 15 minutes. Consult medical personnel.

SKIN: Wash off in flowing water or shower.

INGESTION: If swallowed, induce vomiting only as directed by medical personnel. Call a physician. (Never give anything by mouth or attempt to induce vomiting in an unconscious person.)

INHALATION: Remove to fresh air if effects occur, administer oxygen if necessary. Consult a physician.

5. FIRE-FIGHTING MEASURES:

FIRE & EXPLOSION HAZARD: Negligible fire hazard when exposed to heat or flame.

EXTINGUISHING MEDIA: This material does not burn. If exposed to fire from another source, use suitable extinguishing agent for that fire.

FIRE FIGHTING PROCEDURES: Keep people away. Isolate fire and deny unnecessary entry. This material does not burn. Fight fire for other material that is burning. Water should be applied in large quantities as a fine spray.

SPECIAL PROTECTIVE EQUIPMENT FOR FIREFIGHTERS: Wear positive-pressure, self-containing breathing apparatus (SCBA) and protective fire fighting clothing (includes fire fighting helmet, coat, trousers, boots and gloves). Avoid contact with this material during fire fighting operations. If contact is likely, change to full chemical resistant fire fighting clothing with self-containing breathing apparatus and fight fire from a remote location.

6. ACCIDENTAL RELEASE MEASURES:

Action to take for spills/leaks: Losses incidental to correct application of this product in its intended uses are not expected to be harmful to the environment. Wear appropriate safety apparel during clean-up. See Section 8. Avoid entry of large amount of product into sewers, natural waters, and drinking water sources. Due to possible harmful effects, avoid contact with vegetation, animals and fish life. Recover quickly into suitable, dry sealable containers if reusing. Small quantities may be flushed away with plenty of water. Walking surfaces may remain wet longer due to moisture being held by spilled product--avoid by thoroughly water washing surfaces.

7. HANDLING & STORAGE

Comply with federal, state, and local laws, regulations and procedures when storing this product. Store in a tightly closed container. Store away from incompatible materials. Do not store in attic, upper floors or any area where leaking of contents could cause damage.

SPECIAL PRECAUTIONS TO BE TAKEN IN HANDLING AND STORAGE: Avoid eye and prolonged skin contact

8. EXPOSURE CONTROLS / PERSONAL PROTECTION:

EXPOSURE GUIDELINES: There are no occupational exposure limits established by OSHA, ACGIH or NIOSH.

VENTILATION: Provide general and/or local exhaust ventilation to control airborne levels below the exposure guidelines.

RESPIRATORY PROTECTION: Atmospheric levels should be maintained below the exposure guidelines. When respiratory protection is required for certain operations use an approved air-purifying respirator. In dusty atmospheres, use an approved dust respirator.

SKIN PROTECTION: For brief contact, no precautions other than clean body-covering clothing should be needed. Use protective clothing impervious to this material. Selection of specific items such as gloves, boots, aprons, or full-body suit will depend on operation. If skin comes in contact with contaminated clothing, remove the clothing immediately, wash skin area with soap and water, and launder clothing before reuse.

EYE PROTECTION: Safety glasses should be sufficient for most operations; however, for dusty operations or when handling solutions of the material, wear chemical goggles. Eye wash fountain should be located in immediate work area.

9. PHYSICAL & CHEMICAL PROPERTIES:

MELTING POINT:	N/A
BOILING POINT:	N/A
VAPOR PRESSURE:	N/A
VAPOR DENSITY:	N/A
SOLUBILITY IN WATER:	167 g/100 ml Water
SPECIFIC GRAVITY:	N/A
APPEARANCE:	White to off-white solid flakes
ODOR:	None
EVAPORATION RATE:	Not applicable
FLASH POINT:	None – Product is not combustible
METHOD USED:	Not applicable
FLAMMABLE LIMITS:	
LFL	Not applicable
UFL	Not applicable
AUTOIGNITION TEMPERATURE:	Not applicable
HYGROSCOPIC:	YES

10. STABILITY & REACTIVITY:

STABILITY: Stable. Hygroscopic.

CONDITIONS TO AVOID: Decomposes at >160° F

INCOMPATIBILITY: Excessive exposure to air will lead to wetting and caking,

HAZARDOUS DECOMPOSITION PRODUCTS: Oxides of: potassium, calcium, magnesium and sodium, and above 160°C decomposes giving HCl gases.

HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL INFORMATION:

Acute toxicity by manufacturer:

LD50 (oral rat) 8100 mg/kg

MAGNESIUM CHLORIDE:

LD50 (oral rat) 2800 mg/kg

CALCIUM CHLORIDE:

LD50 (oral rat) 1000 mg/kg

LD50 (oral mouse) 1940 mg/kg

SODIUM CHLORIDE:

LD50 (oral rat) 3000 mg/kg

LC50 (inhalation rat) 42000 mg/m3 (60 min)

LD50 (absorption through skin rabbit) 10000 mg/kg

POTASSIUM CHLORIDE:

LD50 (oral rat) 2600 mg/kg

LDLo (intraperitoneal dog) 85 mg/kg

LD50 (oral mouse) 383 mg/kg

LD50 (intraperitoneal rat) 660 mg/kg

12. ECOLOGICAL INFORMATION:

ENVIRONMENTAL HAZARDS: If properly introduced in small concentrations into adapted biological sewage treatment plants, decomposition of the activated sludge is not affected.

Not mentioned in the EC Regulations of 4/5/76 concerning discharge of dangerous materials into waters, neither in List I nor List II.

MgCl₂ is a component of seawater.

13. DISPOSAL CONSIDERATIONS:

DISPOSAL METHOD: Comply with federal, state, and local laws, regulations and procedures. Contact manufacturer and/or authorities for detailed information. Product as sold is not an RCRA listed or characteristic hazardous waste.

14. TRANSPORT INFORMATION:

U.S. DOT 49 CFR 172.101: Not Regulated

CANADIAN TRANSPORTATION OF DANGEROUS GOODS: Not Regulated

The Transportation of Dangerous Goods Act (**T.D.G.A.**) classification for this product is: Not Regulated

15. REGULATORY INFORMATION:

REGULATION INFORMATION: (Not meant to be all-inclusive--selected regulations represented.)

TSCA STATUS:	Yes
DSL STATUS:	Yes
EINECS STATUS:	Yes
OTHER TSCA ISSUES:	None

CALIFORNIA PROPOSITION 65: This product contains no listed substances known to the State of California to cause cancer, birth defects or other reproductive harm, at levels which would require a warning under the statute.

NOTICE: The information herein is presented in good faith and believed to be accurate as of the effective date shown below. However, no warranty, expressed or implied, is given. Regulatory requirements are subject to change and may differ from one location to another; it is the buyer's responsibility to ensure that its activities comply with federal, state or provincial, and local laws. The following specific information is made for the purpose of complying with numerous federal, state or provincial, and local laws and regulations. See MSD Sheet for health and safety information.

16. OTHER INFORMATION:

Information contained on these sheets needs to be made available to your workers according to the OSHA Hazard Communication Standard 29CFR 1910.1200 and the Workplace Hazardous Materials Information System (WHMIS).

This Safety Data Sheet and the information it contains is offered to you in good faith as accurate, but there is no representation, guarantee or warranty, either expressed or implied, regarding its accuracy, reliability or completeness. This information relates to the specific product designated and may not be valid for such product used in combination with any other materials or in any other processes. Certain health and safety precautions given in this data sheet may not be adequate for all individuals and/or situations. It is the user's responsibility to use this product safely and to satisfy themselves as to the suitability and completeness of such information for their own particular use. Consult with appropriate experts to guard against hazards associated with the use of this product and its ingredients. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.

The conditions of storage, handling, use and disposal of the product are beyond our control. For this and other reasons, we do not assume any responsibility and expressly disclaim any liability for loss, damage, or expense arising out of or in any way connected with the storage, handling, use or disposal of the product.



SAFETY DATA SHEET

DATE: 1.1.2016 Rev 4

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Marking Chalk Blue

USE OF PRODUCT: Chalk Box Marking Chalk

MANUFACTURER: Keson Industries

ADDRESS: 810 Commerce St., Aurora, IL 60504

EMERGENCY PHONE: 1-800-345-3766 (8am to 5pm Central Time, Monday – Friday)

SECTION 2: HAZARDS IDENTIFICATION

OSHA GHS Hazard Statements (Warning Label)

DANGER: May cause cancer (lung)

Hazard Ratings:

Hazardous Material Identification System (HMIS): Health 1*, Flammability 0, Reactivity 0*chronic effects

National Fire Protection Association (NFPA): Health 1, Flammability 0, Reactivity 0

EMERGENCY OVERVIEW:

Product Description: These products are colored, finely powdered, odorless chalks. Health Hazards: Inhalation of dusts from this product may irritate the respiratory system. Skin and eye contact may cause mechanical abrasion. These chalks contain Crystalline Silica, a known human carcinogen by inhalation.

Flammability Hazards: These chalks are not flammable. Finely divided dusts from these products can form explosive mixtures in air. If involved in a fire, these products may decompose to form iron oxides, aluminum oxides, silicon dioxide, sulfur dioxide, magnesium oxides, carbon oxides and calcium oxides.

POTENTIAL HEALTH EFFECTS

EYES: May cause irritation. Chalk dust is discomforting and abrasive to the eyes.

SKIN: Prolonged contact may cause irritation. When the product is used as intended, it is unlikely to cause problems.

INGESTION: Ingestion of large amount may cause internal irritation. Ingestion is considered an unlikely route of entry in commercial or industrial environments.

INHALATION: May irritate the respiratory system. When the product is used as intended, it is unlikely to cause problems.

Chronic: Repeated or prolonged inhalation exposure to crystalline silica dust beyond exposure limits may cause chronic lung injury (silicosis). Prolonged inhalation of iron oxide dust is known to produce a benign lung condition known as siderosis. When the product is used as intended, dust levels should not exceed exposure limits. See Sections 8 and 11.



WARNING



DANGER

Obtain special instructions before use. May cause cancer by inhalation. Avoid breathing dust or fume. Causes serious eye irritation. Causes mild skin irritation. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection.



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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	Value (%)	CAS No.	EC No.
Calcium carbonate (1)	85-90	471-34-1	207-439-9
Ultra Marine Blue	10 - 15	57455-37-5	None
Silica (crystalline quartz) (1)	0.1 - 1	14808-60-7	238-878-4

1 Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

SECTION 4: FIRST AID MEASURES

EYES: If product enters the eye do not rub, rubbing may cause abrasions. Flush eyes with copious amounts of water for 15 minutes, occasionally lifting upper and lower eyelids. If adverse effects persist after flushing with water, get medical aid.

SKIN: Wet clothing first to minimize dust generation, then; remove contaminated clothing and shoes. Wash contaminated clothing before wearing again. Wash infected areas with water and soap. Get medical attention in the event of irritation.

INGESTION: If this material is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, seek immediate medical attention. If alert, victim should drink up to three glasses of water. Do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain emergency medical attention.

INHALATION: If dust or particulates are inhaled, Remove from exposure and move to fresh air immediately. Encourage to blow nose to ensure clear breathing passages. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Show this data safety sheet to medical professionals.

SECTION 5: FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Substance is noncombustible, however; the containers may burn, releasing carbon monoxide and carbon dioxide. Use appropriate extinguishing media for the combustible material involved in a fire.

SPECIAL FIRE FIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus in pressure demand and full protective gear.

FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, "ABC" type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving this material.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Finely divided dusts from this material pose a hazard of an air/dust explosion in presence of an ignition source

HAZARDOUS DECOMPOSITION PRODUCTS: If oxidation of this product should occur, heat will be liberated which could cause surrounding combustibles to burn.



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SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Wear appropriate personal protective equipment. Do not allow this material to be released into the environment. Recover the product whenever possible. Avoid generating dust when sweeping or shoveling up. If required, wet the material with water to prevent creating dust. Pick up and place in a suitable container for reclamation or disposal.

Cleanup of Small Spills: Solids should be gently covered with wet absorbent pads. Clean spill with pad and dispose of properly. Decontaminate the spill area (three times) using a bleach and detergent solution and then rinse with clean water.

Large Spills: Restrict access to the spill areas. For spills of greater than 5 g, be sure not to generate dusts by gently covering with damp absorbent sheets, spill-control pads, pillows, cloths, or towels. The dispersion of particles into surrounding air and the possibility of inhalation is a serious matter and should be treated as such. Do not apply chemical in-activators as they may produce hazardous by-products. Sweep up or vacuum spilled solid (an explosion-proof vacuum should be used), avoiding the generation of airborne dusts. Decontaminate the area thoroughly.

All Spills: Use procedures described above and then place all spill residues in an appropriate, labeled container and seal. Move to a secure area. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing airborne dusts generated by this product. Use in a well-ventilated area. Ensure this product is used with adequate ventilation and personal protective equipment (see Section 8, Exposure Controls and Personal Protection). Avoid airborne dusts generated by this product. Clean work areas routinely to prevent accumulation of dust. Clean up spills promptly.

CONDITIONS FOR SAFE STORAGE: Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Keep container tightly closed when not in use. Refer to NFPA 654, *Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids* for additional information on storage.

SPECIFIC END USE(S): These products are used in chalk line devices in construction. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all residue and dispose of according to applicable or applicable federal, state, provincial and local standards.



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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit 8-Hour TWA¹(mg/m³)

Component	CAS No.	% by weight	OSHA PEL	ACGIH TLV	NIOSH REL
Calcium Carbonate (Limestone) (4)	471-34-1; (1317-65-3)	85-90	15(2), 5 (3)	10(2)	10(2), 5(3)
Ultra Marine Blue	57455-37-5	10-15	None	None	None
Silica-Crystalline Quartz (4)	14808-60-7	0.1-1.0	10(2,5),3.3(3,5)	0.05(3)	0.05(3)

¹TWA = Time-weighted average

²Total dust.

³Respirable dust.

⁴Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

⁵Using the OSHA quartz formula, this PEL was calculated assuming crystalline silica content of 1.0% in this ingredient.

SPECIAL NOTE: The following information is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hand Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand protection, and CR 13464:1999 for face/eye protection). Please reference applicable regulations and standards for relevant details.

ENGINEERING CONTROLS: Facilities storing or utilizing this material should have potable water available for washing of eyes and skin. Use sufficient general area ventilation. To ensure exposure levels are maintained below the limits provided in this section if applicable.

VENTILATION: Local ventilation should be used.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 20% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-face piece pressure/demand SCBA or a full face piece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Wear safety goggles/glasses as appropriate for the task if dust or other particulates are present. Face shields may be recommended if solutions are made. If necessary, refer to appropriate regulations.

SKIN PROTECTION: Use appropriate protective clothing for the task. Full-body protective clothing and gloves are recommended for emergency response procedures. If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: No information found.

WORK HYGIENIC PRACTICES: Wash contaminated clothing before reuse.

EXPOSURE GUIDELINES: No information found.



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PROTECTIVE EQUIPMENT			
EYES	RESPIRATORY	HANDS	BODY
	SEE SECTION 8		SEE SECTION 8

For Routine Industrial Use and Handling Applications

Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Powder – Blue Color

ODOR: Odorless

pH AS SUPPLIED: 8.5-9.5 (at 10% solids)

BOILING POINT: No Data Available

MELTING POINT: Decomposes

F: 1517 Deg

C: 825Deg

FREEZING POINT: No Data Available.

VAPOR PRESSURE (mmHg): No Data Available.

VAPOR DENSITY (AIR = 1): No Data Available.

SPECIFIC GRAVITY (H₂O = 1): No Data Available.

EVAPORATION RATE: No Data Available.

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressures.

CONDITIONS TO AVOID (STABILITY): Incompatible materials

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents, acids, aluminum, fluorine, magnesium, peroxides, hydrazine, calcium hypochlorite, performic acid, and bromine pentafluoride.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Carbon monoxide, carbon dioxide, calcium oxide.

HAZARDOUS POLYMERIZATION: Does not occur.



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SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of industrial exposure to this product are by skin or eye contact and inhalation.

INHALATION: If dusts or particulates from these products are inhaled, irritation of the nose, throat, and lungs can occur. Symptoms may include sneezing, coughing, nasal congestion, and difficulty breathing. Symptoms are generally alleviated upon exposure to fresh air. If heated, chronic exposure to concentrations of silicon dioxide fume may cause chronic obstructive lung disease. Inhalation of iron oxide fume or dust is cause of pulmonary roentgen graphic appearance called siderosis, or an accumulation of iron that leads to reduced lung capacity. These products contain Crystalline Silica, which is a known human carcinogen. Chronic inhalation exposure to this material may cause silicosis, pulmonary fibrosis, bronchitis or present a hazard of cancer, due to the presence of Crystalline Silica.

CONTACT WITH SKIN or EYES: Skin contact may cause abrasion, redness, and discomfort. Prolonged and repeated skin exposure may cause dermatitis (dry, red skin). Direct eye contact with these products may cause stinging, abrasions, and redness. Dust can cause mechanical irritation to the eye. Repeated contact of dust with the eyes can cause conjunctivitis a disease that may cause eyes to become pink and sore), or can cause discoloration of the eyes.

SKIN ABSORPTION: This product does not pose a hazard of skin absorption.

INGESTION: Ingestion is an unlikely route of occupational exposure to this product. In the unlikely event that dusts from the product are ingested nausea, vomiting, and diarrhea may result.

Repeated ingestion of iron compounds can cause vomiting, diarrhea, pink urine, black stool, and liver or kidney damage. Repeated ingestion of iron compounds can also cause siderosis, which is an accumulation of iron in tissues.

Chronic: Repeated inhalation exposure of crystalline silica above safe levels may cause adverse effects to the respiratory system. Chronic inhalation may result in pulmonary fibrosis. This product contains crystalline silica, which is a known human carcinogen.

SECTION 11 NOTES: The International Agency for Research on Cancer (IARC) classified (quartz) crystalline silica (cs) as a probable carcinogen and in 1997 reclassified it as a Group 1 carcinogen, i.e., that there was sufficient evidence for carcinogenicity in experimental animals and sufficient evidence for carcinogenicity in humans. In its Ninth Annual Report on Carcinogens, the National Toxicology Program (NTP) listed crystalline silica as a known human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust. The International Agency for Research on Cancer (IARC) has evaluated crystalline silica and determined that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)."

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Safe practices must be in place to prevent environmental contamination.

SECTION 12 NOTES: These products have not been tested for aquatic or animal toxicity. All release to terrestrial, atmospheric and aquatic environments should be avoided.



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SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Waste from residue of this product is NOT hazardous waste according to the EPA regulations. Disposal by landfill may be acceptable. Waste disposal must follow all US Federal, State and Local (EPA) regulations, Canadian and European Governmental Guidelines.

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: (DOT) These products are not classified as dangerous goods under the DOT regulations 49CFR: 172.101

WATER TRANSPORTATION: (IMO) Not classified as dangerous

AIR TRANSPORTATION: (ATA) Not classified as dangerous

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA: Components are listed as air contaminants. Regulation standards -29CFR. Standard number 1910.100 Table 2-1

TSCA (TOXIC SUBSTANCE CONTROL ACT): All components are listed on the TSCA inventory

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): Not Listed

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): The components of this product has been reviewed on the EAP Hazards Categories in section 311-312 and is considered a chronic health risk.

STATE REGULATIONS: California: (Proposition 65) WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm (Silica Crystalline Quartz, CAS Number: 14808-60-7)

CANADA WHIMS: (Workplace Hazardous Materials Information System) This SDS sheet contains all of the information needed by the CPR. (Controlled Products Regulation)

WHIMS CLASSIFICATION D2A: Very toxic (carcinogenicity)

EU CLASSIFICATION, LABELING: This product does meet the definition of hazard class described by the EUROPEAN UNION COUNCIL DIRECTIVE EC# 1272/2008. Classification information for components Crystalline Silica. EU Classification (xn) Harmful EU risk R68/20 harmful: Risk of irreversible damage through inhalation.



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SECTION 16: OTHER INFORMATION

Hazard Ratings:

Hazardous Material Identification System (HMIS): Health 1*, Flammability 0, Reactivity 0*chronic effects

National Fire Protection Association (NFPA): Health 1, Flammability 0, Reactivity 0



The contents and format of this SDS are in accordance with the U.S. Hazard Communication Standard 29 CFR 1910.1200; the Canadian CPR, and Workplace Hazardous Materials Information System (WHMIS); and EEC Commission Directive 1999/45/EC, and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are correct. However, the information is provided without any warranty, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

End of document



Safety Data Sheet MAX GEL[†]

1. Identification

1.1 Product identifier

Product name MAX GEL[†]
Product code 10618

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Drilling fluid additive.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I L.L.C.
P.O.Box 42842
Houston, TX 77242
www.miswaco.slb.com

Prepared by
Global Chemical Regulatory Compliance (GCRC) , Bethicia Prasek

1.4 Emergency Telephone Number

Emergency telephone (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600
Telephone Number - 281-561-1511

2. Hazards identification

2.1 Classification of the substance or mixture

GHS - Classification

Health hazards

Carcinogenicity	Category 1A
-----------------	-------------

Environmental hazards Not classified

Physical Hazards Not classified

2.2 Label elements



Signal word
DANGER

Hazard statements
H350 - May cause cancer

Precautionary statements
P201 - Obtain special instructions before use
P281 - Use personal protective equipment as required
P308 + P313 - IF exposed or concerned: Get medical advice/ attention

Supplementary precautionary statements
P202 - Do not handle until all safety precautions have been read and understood
P501 - Dispose of contents/ container to an approved waste disposal plant

3. Composition/information on Ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	CAS-No	Weight % - range
Silica, crystalline, quartz	14808-60-7	5 - 10
Silica, crystalline, Tridymite	15468-32-3	0.1 - 1

Comments

The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 First-Aid Measures

Inhalation	Move to fresh air. If breathing is difficult, (trained personnel should) give oxygen. Get medical attention immediately if symptoms occur.
Ingestion	Drink 1 or 2 glasses of water. Never give anything by mouth to an unconscious person. Get medical attention if symptoms occur.
Skin contact	Wash skin thoroughly with soap and water. Remove contaminated clothing and launder before reuse. Get medical attention if irritation persists.
Eye contact	Promptly wash eyes with lots of water while lifting eye lids. Remove contact lenses. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

Main symptoms

Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically
---------------------------	-----------------------

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Water Fog, Alcohol Foam, CO₂, Dry Chemical.

Extinguishing media which shall not be used for safety reasons

None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards

None known.

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Wear suitable protective equipment. Evacuate personnel to safe areas. Prevent further leakage or spillage if safe to do so. Avoid dust formation.

6.2 Environmental precautions

Do not allow material to contaminate ground water system.

Environmental exposure controls

No information available.

6.3 Methods and materials for containment and cleaning up

Methods for containment

Cover powder spill with plastic sheet or tarp to minimize spreading.

Methods for cleaning up

Shovel or sweep up.

6.4 Reference to other sections

No information available.

7. Handling and storage

7.1 Precautions for safe handling

Handling

Avoid breathing dust; if exposed to high dust concentration, leave area immediately. Avoid contact with skin, eyes and clothing.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation.

Storage precautions Protect from moisture

8. Exposure controls/personal protection

8.1 Control parameters

Component Information

Component	ACGIH TLV	OSHA PEL
Silica, crystalline, quartz	0.025 mg/m ³	see Table Z-3
Silica, crystalline, Tridymite	0.025 mg/m ³	see Table Z-3

Silica, crystalline, quartz

OSHA - Final PELs - Table Z-3 Mineral Dusts

(30)/(%SiO₂ + 2) mg/m³ TWA, total dust; (250)/(%SiO₂ + 5) mppcf TWA, respirable fraction; (10)/(%SiO₂ + 2) mg/m³ TWA, respirable fraction

Silica, crystalline, Tridymite

OSHA - Final PELs - Table Z-3 Mineral Dusts

(1/2)(30)/(%SiO₂ + 2) mg/m³ TWA, total dust; (1/2)(250)/(%SiO₂ + 5) mppcf TWA, respirable fraction; (1/2)(10)/(%SiO₂ + 2) mg/m³ TWA, respirable fraction

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure

Ensure adequate ventilation, especially in confined areas.

Personal protective equipment

Eye protection

Tightly fitting safety goggles.

Hand protection

Neoprene, Nitrile.

Respiratory protection

All respiratory protection equipment should be used within a comprehensive respiratory protection program that meets the requirements of 29 CFR 1910.134 (U.S. OSHA Respiratory Protection Standard) or local equivalent.

If exposed to airborne mist/aerosol of this product, use at least a NIOSH-approved N95 half-mask disposable or re-usable particulate respirator. In work environments containing oil mist/aerosol, use at least a NIOSH-approved P95 half-mask disposable or reuseable particulate respirator.

If exposed to vapors from this product use a NIOSH/MSHA-approved respirator with an Organic Vapor cartridge.

Skin and body protection

Wear suitable protective clothing and gloves.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Solid
Appearance	Opaque
Odor	Odorless
Color	Tan - Gray
Odor threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	Not applicable	
pH @ dilution		
Melting/freezing point		
Boiling point/range	No information available	
Flash point	Non-flammable	
Evaporation rate (BuAc =1)	No information available	
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	No information available	
Lower flammability limit	No information available	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	2.3 - 2.65 @ 20°C	
Bulk density	No information available	
Water solubility	Negligible	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Log Pow	No information available	
Explosive properties	No information available	
Oxidizing properties	No information available	

9.2 Other information

Pour point	No information available
Molecular weight	No information available
VOC content(%)	No information available
Density	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable. Hazardous polymerization does not occur.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization

Hazardous polymerization does not occur.

Hazardous Reactions

None known.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

No materials to be especially mentioned.

10.6 Hazardous decomposition products

Silicon oxide.

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation

Inhalation of dust in high concentration may cause irritation of respiratory system. Repeated or prolonged inhalation of crystalline silica dust can cause delayed lung injury, and other diseases, including silicosis and lung cancer.

Eye contact

Dust contact with the eyes can lead to mechanical irritation.

Skin contact

Repeated exposure may cause skin dryness or cracking.

Ingestion

Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.

Acute toxicity

0% of the mixture consists of ingredient(s) of unknown toxicity.

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Silica, crystalline, quartz	= 500 mg/kg (Rat)	No data available	No data available
Silica, crystalline, Tridymite	No data available	No data available	No data available

Sensitization

This product does not contain any components suspected to be sensitizing.

Mutagenic effects

No evidence of mutagenic properties.

Carcinogenicity

Contains a known or suspected carcinogen. Crystalline silica dust is listed by IARC in Group 1 as known to cause lung cancer in humans, if inhaled.

Reproductive toxicity	No evidence of toxicity to reproduction.
Developmental toxicity	Not known to cause birth defects or have a deleterious effect on a developing fetus.
Routes of exposure	Skin contact. Inhalation. Eye contact.
Routes of entry	Inhalation.
Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Target organ effects	Respiratory system.
Aspiration hazard	Not Applicable.

12. Ecological information

12.1 Toxicity

Toxicity to algae

See component information below.

Toxicity to fish

See component information below.

Toxicity to daphnia and other aquatic invertebrates

See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Silica, crystalline, quartz 14808-60-7 (5 - 10)	No information available	No information available	No information available
Silica, crystalline, Tridymite 15468-32-3 (0.1 - 1)	No information available	No information available	No information available

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No product level data available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

This preparation contains no substance considered to be persistent, bioaccumulating nor toxic (PBT)
This preparation contains no substance considered to be very persistent nor very bioaccumulating (vPvB)

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Disposal Method Disposal should be made in accordance with federal, state and local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1 UN Number

UN/ID No. (ADR/RID/ADN/ADG)	Not regulated
UN No. (IMDG)	Not regulated
UN No. (ICAO)	Not regulated
UN No. (DOT)	Not regulated

14.2 Proper shipping name

Not regulated for transportation by DOT, TDG, IMDG and ICAO/IATA.

14.3 Hazard class(es)

ADR/RID/ADN Hazard class	Not regulated
IMDG Hazard class	Not regulated
ICAO Hazard class/division	Not regulated
DOT Hazard class	Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group	Not regulated
IMDG Packing group	Not regulated
ICAO Packing group	Not regulated
DOT Packing group	Not regulated

Marine pollutant

No

14.6 Special precautions

Not Applicable

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

International inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Does not Comply

Canada (DSL)	Complies
Philippines (PICCS)	Does not Comply
Japan (ENCS)	Does not Comply
China (IECSC)	Does not Comply
Australia (AICS)	Does not Comply
Korean (KECL)	Does not Comply
New Zealand (NZIoC)	Complies

U.S. Federal and State Regulations

SARA 311/312 Hazard Categories

Delayed (chronic) health hazard.

Component	SARA 302 / TPQs	SARA 313	CERCLA RQ
Silica, crystalline, quartz	N/A	N/A	N/A
Silica, crystalline, Tridymite	N/A	N/A	N/A

State Comments

Proposition 65: This product contains chemical(s) considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 to cause cancer and/or reproductive toxicity. See table under U.S. Federal and State Regulations for the specific chemicals.

Silica, crystalline, quartz
carcinogen

Canadian Classification

This product has been classified in accordance with the hazard criteria of the CPR and the SDS contains all the information required by the CPR.

WHMIS Hazard Class D2A (Other Toxic Effects - Very Toxic Material)

-

16. Other information

Supersedes date 20/Dec/2013

Revision date 09/Dec/2014

Version 9

The following sections have been revised All sections. Updated according to GHS/CLP.

HMIS classification

Health	1*
Flammability	0
Physical hazard	0
PPE	E

N/A - Not Applicable, N/D - Not Determined.

†A mark of M-I L.L.C.

Disclaimer

The information contained herein is considered in good faith as reliable of the date issued and is based upon on measurements, tests or data derived from supplier's own study or furnished by others. In providing this SDS information, Supplier makes no express or implied warranties as to the information or product; merchantability or fitness of purpose; any express or implied warranty; or non-infringement of intellectual property rights; and supplier assumes no responsibility for any direct, special or consequential damages, results obtained, or the activities of others. To the maximum extent permitted by law, supplier's warranty obligations and buyer's sole remedies are as stated in separate agreement between the parties.

**1. Identification**

Product name : Sika MonoTop®-611

Supplier : Sika Corporation

Address : 201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887
ehs@sika-corp.com

Recommended use of the chemical and restrictions on use : For further information, refer to the product technical data sheet.

2. Hazards identification**GHS Classification**

Skin irritation , Category 2	H315: Causes skin irritation.
Serious eye damage , Category 1	H318: Causes serious eye damage.
Carcinogenicity , Category 1A	H350: May cause cancer.
Specific target organ systemic toxicity - single exposure , Category 3, Respiratory system	H335: May cause respiratory irritation.

GHS Label element

Hazard pictograms :   

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.



P280 Wear protective gloves.

P281 Use personal protective equipment as required.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER or doctor/physician.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Quartz (SiO ₂)	14808-60-7	>= 50 - <= 100 %
Portland cement	65997-15-1	>= 25 - < 50 %

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- | | |
|-------------------------|--|
| If inhaled | : Move to fresh air.
Consult a physician after significant exposure. |
| In case of skin contact | : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician. |
| In case of eye contact | : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Continue rinsing eyes during transport to hospital. |



	Remove contact lenses. Keep eye wide open while rinsing.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Induce vomiting immediately and call a physician. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	: irritant effects carcinogenic effects Cough Respiratory disorder Excessive lachrymation Erythema Dermatitis See Section 11 for more detailed information on health effects and symptoms.
Protection of first-aiders	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
Notes to physician	: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Avoid breathing dust. Deny access to unprotected persons.
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	: Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.



7. Handling and storage

- Advice on safe handling : Do not breathe vapors/dust.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.
- Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep in a well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.
- Materials to avoid : no data available

8. Exposure controls/personal protection

Component	CAS-No.	Basis **	Value	Exposure limit(s)* / Form of exposure
Quartz (SiO ₂)	14808-60-7	ACGIH	TWA	0.025 mg/m ³ Respirable fraction
		OSHA Z-3	TWA	30 mg/m ³ /SiO ₂ +2 total dust
		OSHA Z-3	TWA	10 mg/m ³ /SiO ₂ +2 respirable
		OSHA Z-3	TWA	250 mppcf/SiO ₂ +5 respirable
		OSHA P0	TWA	0.1 mg/m ³ Respirable fraction
Portland cement	65997-15-1	ACGIH	TWA	1 mg/m ³ Respirable fraction
		OSHA P0	TWA	10 mg/m ³ Total
		OSHA P0	TWA	5 mg/m ³ Respirable fraction
		OSHA Z-1	TWA	15 mg/m ³ total dust



		OSHA Z-1	TWA	5 mg/m3 respirable fraction
		OSHA Z-3	TWA	50 Million particles per cubic foot Dust
fumed silica	69012-64-2	OSHA Z-3	TWA	20 Million particles per cubic foot Dust
		OSHA Z-3	TWA	80 mg/m3 / %SiO2 Dust

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**

ACGIH. Threshold Limit Values (TLV)

OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)

OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant

OSHA P2. Permissible Exposure Limits (PEL), Table Z-2

OSHA Z3. Table Z-3, Mineral Dust

Engineering measures

: Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection

: Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection

Remarks

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.



Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Hygiene measures	: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling. Avoid breathing dust.

9. Physical and chemical properties

Appearance	: powder
Color	: gray
Odor	: odorless
Odor Threshold	: no data available
Flash point	: Note: not applicable
Ignition temperature	: no data available
Decomposition temperature	: no data available
Lower explosion limit (Vol%)	: no data available
Upper explosion limit (Vol%)	: no data available
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available
pH	: Note: not applicable
Melting point/range / Freezing point	: no data available
Boiling point/boiling range	: no data available
Vapor pressure	: no data available
Density	: ca.2.750 g/cm ³ at 73 °F (23 °C)
Water solubility	: Note: insoluble
Partition coefficient: n- octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available



Relative vapor density	: no data available
Evaporation rate	: no data available
Burning rate	: no data available
Volatile organic compounds (VOC) content	: 0 g/l

10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: no data available
Incompatible materials	: no data available

11. Toxicological information**Acute toxicity****Product**

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available

Skin corrosion/irritation**Product**

Causes skin irritation.

Serious eye damage/eye irritation**Product**

Causes serious eye damage.

Respiratory or skin sensitization**Product**

no data available

Germ cell mutagenicity**Product**

Mutagenicity	: no data available
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**Carcinogenicity****Product**

Carcinogenicity : May cause cancer.

IARC

Group 1: Carcinogenic to humans

NTP

Quartz (SiO₂) 14808-60-7

Known to be human carcinogen

Quartz (SiO₂) 14808-60-7

Reproductive Toxicity/Fertility**Product**

Reproductive toxicity : no data available

Reproductive Toxicity/Development/Teratogenicity**Product**

Teratogenicity : no data available

STOT-single exposure**Product**

Assessment: May cause respiratory irritation.

STOT-repeated exposure

Prolonged exposure can cause silicosis.

Product

Assessment: no data available

Aspiration toxicity**Product**

no data available

12. Ecological information

Other information Do not empty into drains; dispose of this material and its container in a safe way.

13. Disposal considerations**Disposal methods**

Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.



Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information

TSCA list

: All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

: Acute Health Hazard
Chronic Health Hazard

SARA 302

: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313

: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).



This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

16. Other information**HMIS Classification**

Health	*	3
Flammability		0
Physical Hazard		0
Personal Protection		X

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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Safety Data Sheet

Sika MonoTop®-611

Revision Date 11/25/2013

Print Date 11/25/2013

Revision Date 11/25/2013

Material number: 107241

SECTION 1: Identification

1.1. Product identifier

Product name : Penetron Admix®, Penetron Admix® SB

Product code : Not available.

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Concrete protection and permeability reduction

1.3. Details of the supplier of the safety data sheet

Penetron International, Ltd.
45 Research Way, Suite 203
East Setauket, New York 11733 – USA
T +1 (631) 941-9700
info@penetron.com - penetron.com

1.4. Emergency telephone number

Emergency number : CHEMTREC: US and Canada: 1-800-424-9300; International +1 703-527-3887

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification (GHS-US)

Skin Irritation 2

Serious Eye Damage 1

2.2. Label elements

GHS-US labeling

Hazard pictograms (GHS-US) :



GHS05

Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Causes skin irritation. Causes serious eye damage.

Precautionary statements (GHS-US) : Wash hands thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor.

2.3. Other hazards

No additional information available.

2.4. Unknown acute toxicity (GHS US)

Not applicable.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable.

3.2. Mixture

Name	Product identifier	%
Cement, portland, chemicals	(CAS No) 65997-15-1	65 - 80
CTS-15-1	Trade Secret	10 - 30
CTS-15-2	Trade Secret	5 - 10
Calcium magnesium hydroxide (CaMg(OH)4)	(CAS No) 39445-23-3	1.5 - 6
Calcium magnesium hydroxide oxide (CaMg(OH)2O)	(CAS No) 58398-71-3	1.5 - 6
Calcium hydroxide	(CAS No) 1305-62-0	1.0 - 2

* The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

Penetron Admix®

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 4: First aid measures

4.1. Description of first aid measures

- First-aid measures after inhalation : If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
- First-aid measures after skin contact : In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
- First-aid measures after eye contact : In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.
- First-aid measures after ingestion : If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention if you feel unwell.

4.2. Most important symptoms and effects, both acute and delayed

- Symptoms/injuries after inhalation : May cause respiratory tract irritation. May cause burns in the presence of moisture.
- Symptoms/injuries after skin contact : Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause burns in the presence of moisture.
- Symptoms/injuries after eye contact : Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
- Symptoms/injuries after ingestion : May be harmful if swallowed. May cause stomach distress, nausea or vomiting. May cause burns in the presence of moisture.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

- Suitable extinguishing media : Treat for surrounding material.
- Unsuitable extinguishing media : None known.

5.2. Special hazards arising from the substance or mixture

- Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters

- Protection during firefighting : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

- General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

- For containment : Contain and/or absorb spill with inert material (e.g. sand, vermiculite), then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).
- Methods for cleaning up : Vacuum or sweep material and place in a disposal container. Avoid generating dust. Provide ventilation.

6.3. Reference to other sections

See section 8 for further information on protective clothing and equipment and section 13 for advice on waste disposal.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Precautions for safe handling : Avoid contact with skin and eyes. Do not breathe dust/fume/gas/mist/vapors/spray. Do not swallow. Handle and open container with care. When using do not eat, drink or smoke.
- Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

- Storage conditions : Keep out of the reach of children. Keep container tightly closed. Store in original container in a dry, cool, well-ventilated area. Keep out of direct sunlight. Keep away from food and drink. Store locked up.

7.3. Specific end use(s)

Not available.

Penetron Admix®

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Cement, portland, chemicals (65997-15-1)		
ACGIH	ACGIH TWA (mg/m³)	1 mg/m³ (no asbestos and <1% crystalline silica, respirable fraction)
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total) 5 mg/m³ (resp) 50 mppcf (<1% Crystalline silica)
CTS-15-1		
ACGIH	Not applicable.	
OSHA	Not applicable.	
CTS-15-2		
ACGIH	Not applicable.	
OSHA	Not applicable.	
Calcium magnesium hydroxide (CaMg(OH)4) (39445-23-3)		
ACGIH	Not applicable.	
OSHA	Not applicable.	
Calcium magnesium hydroxide oxide (CaMg(OH)2O) (58398-71-3)		
ACGIH	Not applicable.	
OSHA	Not applicable.	
Calcium hydroxide (1305-62-0)		
ACGIH	ACGIH TWA (mg/m³)	5 mg/m³
OSHA	OSHA PEL (TWA) (mg/m³)	15 mg/m³ (total dust) 5 mg/m³ (respirable fraction)

8.2. Exposure controls

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Hand protection	: Protective gloves made of rubber or PVC.
Eye protection	: Wear approved eye (properly fitted dust- or splash-proof chemical safety goggles) / face (face shield) protection.
Skin and body protection	: Wear suitable protective clothing.
Respiratory protection	: A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).
Environmental exposure controls	: Maintain levels below Community environmental protection thresholds.
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder
Color	: Gray
Odor	: Odorless
Odor threshold	: No data available
pH	: No data available
pH solution	: 10 - 13 (10% solution in water)
Melting point	: > 1000 °C (> 1832 °F)
Freezing point	: No data available

Penetron Admix®

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Boiling point	: No data available
Flash point	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Flammability (solid, gas)	: Not flammable
Explosion limits	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Vapor pressure	: No data available
Relative density	: No data available
Relative vapor density at 20 °C	: No data available
Solubility	: No data available
Partition coefficient: n-octanol/water	: No data available
Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Viscosity	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available

9.2. Other information

No additional information available.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use. Reacts with water to form alkaline solution

10.4. Conditions to avoid

Heat. Incompatible materials. Protect from low temperatures. Water.

10.5. Incompatible materials

Strong acids.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

Penetron Admix®	
LD50 oral rat	> 2000 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	No data available

CTS-15-1	
LD50 oral rat	2800 mg/kg
LD50 dermal rabbit	> 2000 mg/kg
LC50 inhalation rat	2.3 mg/l/4h

CTS-15-2	
LD50 oral rat	9300 mg/kg

Calcium hydroxide (1305-62-0)	
LD50 oral rat	7340 mg/kg

Skin corrosion/irritation : Causes skin irritation.

Serious eye damage/irritation : Causes serious eye damage.

Penetron Admix®

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Respiratory or skin sensitization	: Based on available data, the classification criteria are not met.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: Based on available data, the classification criteria are not met.
Reproductive toxicity	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (repeated exposure)	: Based on available data, the classification criteria are not met.
Aspiration hazard	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory tract irritation. May cause burns in the presence of moisture.
Symptoms/injuries after skin contact	: Causes skin irritation. Symptoms may include redness, edema, drying, defatting and cracking of the skin. May cause burns in the presence of moisture.
Symptoms/injuries after eye contact	: Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva. May cause burns.
Symptoms/injuries after ingestion	: May be harmful if swallowed. May cause stomach distress, nausea or vomiting. May cause burns in the presence of moisture.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general : No known significant effects or critical hazards.

12.2. Persistence and degradability

Penetron Admix®	
Persistence and degradability	Not established.

12.3. Bioaccumulative potential

Penetron Admix®	
Bioaccumulative potential	Not established.

12.4. Mobility in soil

No additional information available.

12.5. Other adverse effects

Effect on the global warming : No known ecological damage caused by this product.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations : This material must be disposed of in accordance with all local, state, provincial, and federal regulations. The generation of waste should be avoided or minimized wherever possible.

SECTION 14: Transport information

14.1. Department of Transportation (DOT)

In accordance with DOT

Not regulated for transport

14.2. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

All components of this product are listed, or excluded from listing, on the United States Environmental Protection Agency Toxic Substances Control Act (TSCA) inventory

15.2. US State regulations

Penetron Admix®	
State or local regulations	This product does not contain a chemical known to the State of California to cause cancer, birth defects or other reproductive harm.

Penetron Admix®

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 16: Other information

Date of issue : 06/01/2007

Revision date : 11/03/2015

Other information : None.

Disclaimer: We believe the statements, technical information and recommendations contained herein are reliable, but they are given without warranty or guarantee of any kind. The information contained in this document applies to this specific material as supplied. It may not be valid for this material if it is used in combination with any other materials. It is the user's responsibility to satisfy oneself as to the suitability and completeness of this information for the user's own particular use.



Safety Data Sheet POLY-PLUS[†]

1. Identification of the substance/preparation and of the Company/undertaking

1.1 Product identifier

Product name POLY-PLUS[†]
Product code 10094

1.2 Relevant identified uses of the substance or mixture and uses advised against

Recommended Use Shale control agent.

Uses advised against Consumer use

1.3 Details of the supplier of the safety data sheet

Supplier
M-I L.L.C.
P.O.Box 42842
Houston, TX 77242
www.miswaco.slb.com

Prepared by
Global Chemical Regulatory Compliance (GCRC) , Mike McDowell

1.4 Emergency Telephone Number

Emergency telephone - (24 Hour) Australia +61 2801 44558, Asia Pacific +65 3158 1074, China +86 10 5100 3039, Europe +44 (0) 1235 239 670, Middle East and Africa +44 (0) 1235 239 671, New Zealand +64 9929 1483, USA 001 281 561 1600
Telephone Number - 281-561-1512

2. Hazards identification

2.1 Classification of the substance or mixture

GHS - Classification

Health hazards

Skin corrosion/irritation	Category 2
Serious eye damage/eye irritation	Category 2

Environmental hazards

Physical Hazards

2.2 Label elements



Signal word
WARNING

Hazard statements

H315 - Causes skin irritation

H319 - Causes serious eye irritation

Precautionary statements

P301 + P310 - IF SWALLOWED: Immediately call a POISON CENTER or doctor/ physician

P331 - Do NOT induce vomiting

Supplementary precautionary statements

P264 - Wash face, hands and any exposed skin thoroughly after handling

P280 - Wear protective gloves/ protective clothing/ eye protection/ face protection

P302 + P352 - IF ON SKIN: Wash with plenty of soap and water

P305 + P351 + P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing

P321 - Specific treatment (see supplemental first aid instructions on this label)

P332 + P313 - If skin irritation occurs: Get medical advice/ attention

P337 + P313 - If eye irritation persists: Get medical advice/attention

P362 - Take off contaminated clothing and wash before reuse

P501 - Dispose of contents/ container to an approved waste disposal plant

3. Composition/information on Ingredients

3.1 Substances

Not Applicable

3.2 Mixtures

Component	CAS-No	Weight % - range
Petroleum distillates, hydrotreated light	64742-47-8	10 - 30
Alcohols, C11-14-iso, C13-rich, ethoxylated	78330-21-9	1 - 5

Comments

The product contains other ingredients which do not contribute to the overall classification.

4. First aid measures

4.1 Description of first-aid measures

Inhalation

If inhaled, remove from area to fresh air. Get medical attention if respiratory irritation develops or if breathing becomes difficult.

Ingestion	Rinse mouth. Do not induce vomiting without medical advice. Never give anything by mouth to an unconscious person. Seek medical attention if irritation occurs.
Skin contact	Wash off immediately with soap and plenty of water removing all contaminated clothes and shoes. Get medical attention immediately if symptoms occur.
Eye contact	Remove contact lenses. Promptly wash eyes with lots of water while lifting eye lids. Continue to rinse for at least 15 minutes. Get medical attention if any discomfort continues.

4.2 Most important symptoms and effects, both acute and delayed

General advice	The severity of the symptoms described will vary dependant of the concentration and the length of exposure. If adverse symptoms develop, the casualty should be transferred to hospital as soon as possible.
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Main symptoms

Inhalation	Please see Section 11. Toxicological Information for further information.
Ingestion	Please see Section 11. Toxicological Information for further information.
Skin contact	Please see Section 11. Toxicological Information for further information.
Eye contact	Please see Section 11. Toxicological Information for further information.

4.3 Indication of any immediate medical attention and special treatment needed

Notes to physician	Treat symptomatically.
---------------------------	------------------------

5. Fire-fighting measures

5.1 Extinguishing media

Suitable extinguishing media

Use extinguishing media appropriate for surrounding material.

Extinguishing media which shall not be used for safety reasons

None known.

5.2 Special hazards arising from the substance or mixture

Unusual fire and explosion hazards

None known.

Hazardous combustion products

Carbon oxides (COx), Nitrogen oxides (NOx).

5.3 Advice for firefighters

Special protective equipment for fire-fighters

As in any fire, wear self-contained breathing apparatus and full protective gear.

Special Fire-Fighting Procedures

Containers close to fire should be removed immediately or cooled with water.

6. Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Use personal protective equipment. See also section 8.

6.2 Environmental precautions

The product should not be allowed to enter drains, water courses or the soil.

Environmental exposure controls

Avoid release to the environment.

6.3 Methods and materials for containment and cleaning up

Methods for containment

Prevent further leakage or spillage if safe to do so. Dike far ahead of liquid spill for later disposal.

Methods for cleaning up

Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. After cleaning, flush away traces with water.

6.4 Reference to other sections

See section 13 for more information.

7. Handling and storage

7.1 Precautions for safe handling

Handling

Handle in accordance with good industrial hygiene and safety practice. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Avoid spills and splashing during use.

7.2 Conditions for safe storage, including any incompatibilities

Technical measures/precautions Ensure adequate ventilation. Keep airborne concentrations below exposure limits.

Storage precautions Keep containers tightly closed in a dry, cool and well-ventilated place.

Packaging material Use specially constructed containers only

8. Exposure controls/personal protection

8.1 Control parameters

Component	ACGIH TLV	OSHA PEL
Petroleum distillates, hydrotreated light	Not Determined	Not Determined
Alcohols, C11-14-iso, C13-rich, ethoxylated	Not Determined	Not Determined

8.2 Exposure controls

All chemical Personal Protective Equipment (PPE) should be selected based on an assessment of both the chemical hazard present and the risk of exposure to those hazards. The PPE recommendations below are based on an assessment of the chemical hazards associated with this product. Where this product is used in a mixture with other products or fluids, additional hazards may be created and as such further assessment of risk may be required. The risk of exposure and need of respiratory protection will vary from workplace to workplace and should be assessed by the user in each situation.

Engineering measures to reduce exposure

Ensure adequate ventilation.

Personal protective equipment

Eye protection	It is good practice to wear goggles when handling any chemical. Tightly fitting safety goggles.
Hand protection	Use protective gloves made of: , Be aware that liquid may penetrate the gloves. Frequent change is advisable.
Respiratory protection	No personal respiratory protective equipment normally required, In case of insufficient ventilation wear suitable respiratory equipment.
Skin and body protection	Wear suitable protective clothing, Provide eyewash station.
Hygiene measures	Wash hands before eating, drinking or smoking, Remove and wash contaminated clothing before re-use.

9. Physical and chemical properties

9.1 Information on basic physical and chemical properties

Physical state	Liquid
Appearance	Cloudy
Odor	Faint hydrocarbon
Color	White
Odor threshold	Not applicable

<u>Property</u>	<u>Values</u>	<u>Remarks</u>
pH	6 - 8	
pH @ dilution		
Melting/freezing point		
Boiling point/range	100 °C / 212 °F	
Flash point	> 93 °C / 200 °F	
Evaporation rate (BuAc =1)		
Flammability (solid, gas)	Not Applicable	
Flammability Limits in Air		
Upper flammability limit	Not applicable	
Lower flammability limit	Not applicable	
Vapor pressure	No information available	
Vapor density	No information available	
Specific gravity	1.07 - 1.10	
Bulk density	No information available	
Relative density	No information available	
Water solubility	slightly soluble	
Solubility in other solvents	No information available	
Autoignition temperature	No information available	
Decomposition temperature	No information available	
Kinematic viscosity	No information available	
Dynamic viscosity	No information available	
Log Pow	Not determined	
Explosive properties	Not Applicable	
Oxidizing properties	None known.	

9.2 Other information

Pour point	-29°C / -20°F
Molecular weight	No information available
VOC content(%)	None
Density	No information available

10. Stability and reactivity

10.1 Reactivity

No specific reactivity hazards associated with this product.

10.2 Chemical stability

Stable under normal temperature conditions and recommended use.

10.3 Possibility of Hazardous Reactions

Hazardous polymerization

Hazardous polymerization does not occur.

10.4 Conditions to avoid

None known.

10.5 Incompatible materials

Strong oxidizing agents.

10.6 Hazardous decomposition products

Carbon oxides (CO_x). Nitrogen oxides (NO_x).

11. Toxicological information

11.1 Information on toxicological effects

Acute toxicity

Inhalation	May cause irritation of respiratory tract.
Eye contact	Irritating to eyes.
Skin contact	Prolonged skin contact may defat the skin and produce dermatitis.
Ingestion	Ingestion may cause gastrointestinal irritation, nausea, vomiting and diarrhea.
Acute toxicity	36% of the mixture consists of ingredient(s) of unknown toxicity.

Component	LD50 Oral	LD50 Dermal	LD50 Inhalation
Petroleum distillates, hydrotreated light	> 5000 mg/kg (Rat)	> 2000 mg/kg (Rabbit)	> 5.2 mg/L (Rat) 4 h
Alcohols, C11-14-iso, C13-rich, ethoxylated	No data available	No data available	No data available

Sensitization This product does not contain any components suspected to be sensitizing.

Mutagenic effects This substance has no evidence of mutagenic properties.

Carcinogenicity This substance has no evidence of carcinogenic properties.

Reproductive toxicity None known.

Routes of exposure Skin contact. Eye contact.

Routes of entry No route of entry noted.

Specific target organ toxicity (single exposure)	Not classified
Specific target organ toxicity (repeated exposure)	Not classified.
Aspiration hazard	No hazard from product as supplied.

12. Ecological information

12.1 Toxicity

Toxicity to algae

See component information below.

Toxicity to fish

See component information below.

Toxicity to daphnia and other aquatic invertebrates

See component information below.

Component	Toxicity to fish	Toxicity to algae	Toxicity to daphnia and other aquatic invertebrates
Petroleum distillates, hydrotreated light 64742-47-8 (10 - 30)	2.2 mg/L LC50 (Lepomis macrochirus) = 96 h 45 mg/L LC50 (Pimephales promelas) = 96 h 2.4 mg/L LC50 (Oncorhynchus mykiss) = 96 h	No information available	4720 mg/L LC50 (Daphnia magna) = 96 h
Alcohols, C11-14-iso, C13-rich, ethoxylated 78330-21-9 (1 - 5)	No information available	No information available	No information available

12.2 Persistence and degradability

No product level data available.

12.3 Bioaccumulative potential

No data available.

12.4 Mobility in soil

No information available.

12.5 Results of PBT and vPvB assessment

Not classified as PBT/vPvB by current EU criteria

12.6 Other adverse effects.

None known.

13. Disposal considerations

13.1 Waste treatment methods

Waste from residues / unused products Dispose of in accordance with local regulations.

Contaminated packaging Empty containers should be taken for local recycling, recovery or waste disposal.

14. Transport information

14.1 UN Number

Not regulated

UN/ID No. (ADR/RID/ADN/ADG) Not regulated

UN No. (IMDG) Not regulated

UN No. (ICAO) Not regulated

UN No. (DOT) Not regulated

14.2 Proper shipping name

Not regulated for transportation by DOT, TDG, IMDG and ICAO/IATA.

14.3 Hazard class(es)

ADR/RID/ADN Hazard class Not regulated

IMDG Hazard class Not regulated

ICAO Hazard class/division Not regulated

DOT Hazard class Not regulated

14.4 Packing group

ADR/RID/ADN Packing Group Not regulated

IMDG Packing group Not regulated

ICAO Packing group Not regulated

DOT Packing group Not regulated

14.5 Environmental hazard

No

14.6 Special precautions

Not Applicable

15. Regulatory information

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

International inventories

USA (TSCA)	Complies
European Union (EINECS and ELINCS)	Does not Comply
Canada (DSL)	Complies
Philippines (PICCS)	Complies
Japan (ENCS)	Complies
China (IECSC)	Complies
Australia (AICS)	Complies
Korean (KECL)	Complies
New Zealand (NZIoC)	Complies

U.S. Federal and State Regulations

SARA 311/312 Hazard Categories Immediate (acute) health hazard.

Component	SARA 302 / TPQs	SARA 313	CERCLA RQ
Petroleum distillates, hydrotreated light	N/A	N/A	N/A
Alcohols, C11-14-iso, C13-rich, ethoxylated	N/A	N/A	N/A

State Comments

Proposition 65: This product is not known to contain chemicals considered by the State of California's Safe Drinking Water and Toxic Enforcement Act of 1986 as causing cancer and/or reproductive toxicity at levels that are expected to pose a significant risk under anticipated use conditions.

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS Hazard Class D2B

16. Other information

Supersedes date 17/Dec/2010

Revision date 05/Jun/2014

Version 9

The following sections have been revised All sections. Format changes.

Health 1

Flammability 1

Physical hazard 0

PPE J

†A mark of M-I L.L.C.

Disclaimer

The information provided in this Material Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

Safety Data Sheet



Portland Cement

Section 1. Identification

Product identifier:	Portland Cement
Other means of identification:	Cement, hydraulic cement CEMEX Type I CEMEX Type II CEMEX Type I/II CEMEX Type III CEMEX Type II/V CEMEX Type V CEMEX Type IA CEMEX Type I/II Low Alkali CEMEX Type II Low Alkali CEMEX Type III Low Alkali CEMEX Type V Low Alkali CEMEX Type II/V Low Alkali CEMEX Class A CEMEX Class C CEMEX Class H White Cement
Chemical name:	Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.
Relevant Uses:	Building materials, construction application, a basic ingredient in concrete.
Manufacturers Name:	CEMEX
Address:	929 Gessner Road, Suite 1900 Houston TX, 77024 T Customer Care 1-800-99-CEMEX
Emergency telephone number:	CHEMTREC: 1-800-424-9300

Section 2. Hazards Identification

OSHA/HCS status:	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
Category Classification(s):	SKIN CORROSION/IRRITATION - Category 1 EYE DAMAGE - Category 1 SKIN SENSITIZATION - Category 1 CARCINOGENICITY/INHALATION - Category 1

GHS label elements:

Hazard pictograms:



GHS05



GHS07



GHS08

Signal word: Danger

Hazard statements:
 Causes severe skin burns and eye damage
 May cause an allergic skin reaction
 Causes serious eye damage
 May cause cancer (Inhalation, Dermal).

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Precautionary Statements:

Obtain special instructions before use
 Do not handle until all safety precautions have been read and understood
 Do not breathe dust
 Wash clothing, face, hands thoroughly after handling
 Contaminated work clothing must not be allowed out of the workplace
 Wear eye protection, protective clothing, protective gloves
 If swallowed: rinse mouth. Do NOT induce vomiting
 If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower
 If inhaled: Remove person to fresh air and keep comfortable for breathing
 If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 If exposed or concerned: Get medical advice/attention
 Immediately call a doctor
 Specific treatment (see Section 4 on this label)
 If skin irritation or rash occurs: Get medical advice/attention
 Take off contaminated clothing and wash it before reuse
 Wash contaminated clothing before reuse
 Dispose of contents/container to comply with local/regional/national regulations

Other Hazards:

Trace amounts of naturally occurring chemicals might be detected during chemical analysis. Trace constituents may include insoluble residue, some of which may be free Quartz (crystalline silica), calcium oxide (Also known as lime or quick lime), magnesium oxide, potassium sulfate, sodium sulfate, chromium compounds, and nickel compounds.

Section 3. Composition / Information on Ingredients

Substance/mixture:

Portland Cement - mixture

Chemical name:

Calcium compounds; calcium silicates and calcium oxides make up the majority of this product – calcium compounds can contain small amounts of iron and aluminum.

Ingredient Name	% Content	CAS number
Portland Cement Clinker	81 - 96	65997-15-1
Gypsum	4 - 9	7778-18-9
Limestone	0 - 5	1317-65-3
Granulated Blast Furnace Slag	0 - 5	65996-69-2
Kiln Bag House Dust	0 - 5	69012-63-1
Lime Kiln Dust	0 - 2	1305-78-8
Quartz (crystalline silica)	0 - 0.1	14808-60-7
Hexavalent chromium*	*	18450-29-9

Any concentration shown as a range is to protect confidentiality or is due to process variation.

*Hexavalent chromium is included due to dermal sensitivity associated with the component.

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

Section 4. First-Aid Measures

Description of necessary first aid measures:

General:

Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves.

Eye contact:

Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove

Safety Data Sheet

any contact lenses. Continue to rinse for at least 15 minutes. Chemical burns must be treated promptly by a physician.

Inhalation:	Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of Portland Cement requires immediate medical attention. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.
Skin contact:	Get medical attention immediately. Heavy exposure to Portland Cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess Portland Cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated as caustic burns.
Ingestion:	Get medical attention immediately. Call a poison center or physician. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

Potential symptoms and effects from acute exposures (delayed or immediate):

Eye contact:	Causes serious eye damage.
Inhalation:	May cause respiratory irritation.
Skin contact:	Causes severe burns. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure. Chemical burns must be treated promptly by a physician. May cause an allergic skin reaction.
Ingestion:	Not expected to be a significant route of entry. May cause burns to mouth, throat and stomach.

Potential symptoms and effects from over-exposures:

Eye contact:	Adverse symptoms may include the following: pain, watering and redness
Inhalation:	Adverse symptoms may include the following: respiratory tract irritation and coughing
Skin contact:	Adverse symptoms may include the following: pain or irritation, redness and blistering may occur, skin burns, ulceration and necrosis may occur
Ingestion:	Adverse symptoms may include the following: stomach pains

Recommendations for immediate medical attention / treatment:

If large quantities have been Ingested or inhaled:	Seek medical treatment and contact poison treatment specialist immediately.
Notes to physician:	Treat symptomatically.
Protection of first-aiders:	No action shall be taken involving any personal risk or without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

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Section 5. Fire-fighting Measures

Extinguishing media

Suitable extinguishing media:	Non-flammable. Use an extinguishing agent suitable for the surrounding fire.
Specific hazards arising from the chemical:	No specific fire or explosion hazard.
Hazardous thermal decomposition products:	Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides and metal oxide/oxides products:
Special protective actions for firefighters:	Evacuate area. Fight fire with normal precautions from a reasonable distance. Move containers from fire area if this can be done without risk.
Special protective equipment for fire-fighters:	Positive pressure self-contained breathing apparatus (SCBA) and structural firefighters' protective clothing will provide adequate protection.

Section 6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

No action shall be taken involving any personal risk or without suitable training. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment. For personal protective clothing requirements, please see Section 8.

For non-emergency personnel:	Evacuate area, if necessary. Contact emergency personnel, if needed. Do not breathe dust. Stay upwind.
For emergency responders:	Evacuate surrounding areas if necessary. Keep unnecessary and unprotected personnel from entering. Do not breathe dust. Provide adequate ventilation.
Environmental precautions:	Avoid release to the environment. Contain the spill to avoid the discharge of spilled material into drains, surface waters and/or groundwater. If the spilled material enters any drainage systems, surface waters and/or groundwater, follow all applicable local, state and federal laws and regulations for additional clean-up and/or reporting requirements.

Methods and materials for containment and cleaning up

Small and large spills:	Wear appropriate personal protective equipment as described in Section 8 for cleaning, containing and removing the spill. Minimize generation of dust. For small spills, clean with a vacuum with a filtration system sufficient to remove and prevent recirculation of cement dust (a vacuum equipped with a high-efficiency particulate air (HEPA) filter is recommended). For large spills, use control dust measures and carefully scoop or shovel into clean dry container for later reuse or disposal. DO NOT USE COMPRESSED AIR TO CLEAN SPILLS. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.
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Section 7. Handling and Storage

Precautions for safe handling

Protective measures:	Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate.
Advice on general	Eating, drinking and smoking should be prohibited in areas where this material is handled,

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occupational hygiene:

stored and processed. Workers should wash hands and face before eating, drinking and smoking.

Conditions for safe storage:

Store and handle in accordance with all current regulations and standards. Keep separated from incompatible substances.

Section 8. Exposure Controls / Personal Protection

Occupational Exposure Limits

Ingredient name	Exposure limits
Portland Cement Clinker	ACGIH TLV (United States, 3/2012). TWA: 1 mg/m ³ 8 hours. Form: Respirable NIOSH REL (United States, 6/2009). TWA: 5 mg/m ³ 10 hours. Form: Respirable TWA: 10 mg/m ³ 10 hours. Form: Total OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours. Form: Respirable TWA: 15 mg/m ³ 8 hours. Form: Total
Quartz (crystalline silica)	ACGIH TLV (United States, 3/2012). TWA: 0.025 mg/m ³ 8 hours. Form: Respirable NIOSH REL (United States, 6/2009). TWA: 0.05 mg/m ³ 8 hours. Form: Respirable OSHA PEL Z-3 (United States, 9/2005). TWA: 10mg/m ³ divided by %SiO ₂ + 2: Respirable TWA: 30mg/m ³ divided by %SiO ₂ + 2: Total
Limestone	ACGIH TLV (United States, 3/2012). TWA: 10 mg/m ³ 8 hours. Form: Total NIOSH REL (United States, 6/2009). TWA: 5 mg/m ³ 10 hours. Form: Respirable TWA: 10 mg/m ³ 10 hours. Form: Total Dust OSHA PEL (United States, 6/2010). TWA: 5 mg/m ³ 8 hours. Form: Respirable TWA: 15 mg/m ³ 8 hours. Form: Total dust
Gypsum	ACGIH TLV (United States, 3/2012) TWA: 10 mg/m ³ 8 hours. Form: Respirable NIOSH REL (United States, 6/2009) TWA 5 mg/m ³ 8 hours. Form: Respirable TWA 10 mg/m ³ 8 hours. Form: Total OSHA PEL Z-1 (United States, 2/2006) TWA 5 mg/m ³ 8 hours. Form: Respirable TWA 15 mg/m ³ 8 hours. Form: Total
Particulates Not Otherwise Regulated (Total Dust)	ACGIH TLV (United States, 3/2012) TWA: 3 mg/m ³ 8 hours. Form: Respirable TWA: 10 mg/m ³ 8 hours. Form: Total dust OSHA PEL (United States, 6/2010). TWA: 5mg/m ³ 8 hours. Form: Respirable TWA: 15 mg/m ³ 8 hours. Form: Total dust

Controls

Appropriate engineering controls:

Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

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Environmental exposure controls: Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

Hygiene

Wash Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by Portland Cement with a pH neutral soap and clean, uncontaminated water. If clothing becomes saturated with Portland Cement, garments should be removed and replaced with clean, dry clothing.

Remove protective equipment and saturated clothing before entering eating areas.

PPE

Eye/face protection: To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Wearing contact lenses when working with cement is not recommended.

Hand protection: Use impervious, waterproof, and alkali-resistant gloves. Do not rely on barrier creams in place of impervious gloves. Do not get Portland Cement inside gloves. Recommended material: Nitrile®

Body protection: Use impervious, waterproof, abrasion and alkali-resistant boots and protective long-sleeved and long-legged clothing to protect the skin from contact with wet Portland Cement. To reduce foot and ankle exposure, wear impervious boots that are high enough to prevent Portland Cement from getting inside them. Do not get Portland Cement inside boots, shoes, or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas of the body.

Other skin protection: Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. Footwear and other gear to protect the skin should be approved by a specialist before handling this product.

Respiratory protection: Use a properly fitted, particulate filter respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

Section 9. Physical and Chemical Properties

Physical State:	Solid. [Powder.]	Lower and upper explosive (flammable) limits:	Not applicable.
Color:	Gray or white.	Vapor pressure:	Not applicable.
Odor:	Odorless.	Vapor density:	Not applicable.
Odor threshold:	Not available.	Relative density:	2.7 to 3.15
pH (in water):	12 - 13	Solubility:	Slightly soluble in water.
Melting point:	Not available.	Solubility in water:	0.1 to 1%
Boiling point:	>1000°C (>1832°F)	Partition coefficient: n-octanol/water:	Not applicable.
Flash point:	Not flammable. Not combustible.	Auto-ignition temperature:	Not applicable.
Burning time:	Not available.	Decomposition temperature:	Not available.
Burning rate:	Not available.	SADT:	Not available.
Evaporation rate:	Not applicable.	Viscosity:	Not applicable.

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Flammability (solid, gas): Not applicable.

Section 10. Stability and Reactivity

Reactivity:	Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.
Chemical stability:	The product is stable.
Possibility of hazardous reactions:	Under normal conditions of storage and use, hazardous reactions will not occur.
Conditions to avoid:	No specific data.
Incompatible materials:	Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Portland Cement is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved. Reacts with acids, aluminum metals and ammonium salts. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas — silicon tetrafluoride.
Hazardous decomposition products:	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11. Toxicological Information

Toxicological Effects

Acute toxicity:	Portland Cement LD50/LC50 = Not available
Irritation/Corrosion:	Skin: May cause serious burns in the presence of moisture. Eyes: Causes serious eye damage. May cause burns in the presence of moisture. Respiratory: May cause respiratory tract irritation.
Sensitization:	May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.
Mutagenicity:	Not classified.
Reproductive toxicity:	Not classified.
Teratogenicity:	Not classified.
Aspiration hazard:	Not classified.
Carcinogenicity Classification:	

Ingredient	OSHA	IARC	ACGIH	NTP
Portland Cement Clinker	—	—	A4	—
Quartz (crystalline silica)	—	1	A2	Known to be a human carcinogen.

Specific target organ toxicity (single exposure): Product Not Classified

Ingredient	Category	Route of Exposure	Target Organs
Quartz (crystalline silica)	Category 3	Inhalation	Respiratory tract irritation

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Specific target organ toxicity (repeated exposure): Product Not Classified

Ingredient	Category	Route of Exposure	Target Organs
Quartz (crystalline silica)	Category 2	Inhalation	Respiratory tract and kidneys

Routes of exposure - Dermal contact, Eye contact, Inhalation, and Ingestion.

Potential acute health effects:	Eye contact: Causes serious eye damage. Inhalation: May cause respiratory irritation. Skin contact: Causes severe burns. May cause an allergic skin reaction. Ingestion: May cause burns to mouth, throat and stomach.
Symptoms related to the physical, chemical and toxicological characteristics:	Eye contact: Adverse symptoms may include the following: pain, watering, redness Inhalation: Adverse symptoms may include the following: respiratory tract irritation, coughing Skin contact: Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, skin burns, ulcerations and necrosis may occur Ingestion: Adverse symptoms may include the following: stomach pains
Delayed and immediate effects and also chronic effects from short and long term exposure:	Short term exposure Potential immediate effects: No known significant effects or critical hazards. Potential delayed effects: No known significant effects or critical hazards. Long term exposure Potential immediate effects: No known significant effects or critical hazards. Potential delayed effects: No known significant effects or critical hazards.
Potential chronic health effects:	General: Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. If sensitized to hexavalent chromium, a severe allergic dermal reaction may occur when subsequently exposed to very low levels. Carcinogenicity: Quartz (crystalline silica) is considered a hazard by inhalation. IARC has classified Quartz (crystalline silica) as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity. Excessive exposure to Quartz (crystalline silica) can cause silicosis, a non-cancerous lung disease. Mutagenicity: No known significant effects or critical hazards. Teratogenicity: No known significant effects or critical hazards. Developmental effects: No known significant effects or critical hazards. Fertility effects: No known significant effects or critical hazards.
Numerical measures of toxicity:	There are no data available - acute toxicity estimates.

Section 12. Ecological

Toxicity

Persistence and degradability:	There are no data available.
Bioaccumulation potential:	There are no data available.
Mobility in soil:	Soil/water partition coefficient (Koc): Not available.
Other adverse effects:	No known significant effects or critical hazards.
Ecotoxicity:	No recognized unusual toxicity to plants or animals

Section 13. Disposal Considerations

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Disposal methods: Salvage spilled cement material where possible. Uncontaminated cement material may be reused. Dispose of waste material in accordance with local, state and federal laws and regulations.

Section 14. Transport Information

Special precautions for user: Ensure that persons transporting the product know what to do in the event of an accident or spillage.

Transport in bulk according to Annex II of MARPOL 73/ 78 and the IBC Code: Not Regulated.

Transport Parameters	DOT Classification	IMDG	IATA
UN Number	Not Regulated	Not Regulated	Not Regulated
UN Proper Shipping Name	-	-	-
Transport Hazard Class	-	-	-
Packing Group	-	-	-
Environmental Hazard	None	None	None
Additional Information	-	-	-

Section 15. Regulatory Information

Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200

This product is considered a "hazardous chemical" under this regulation, and should be part of any hazard communication program.

Status under CERCLA/SUPERFUND 40 CFR 117 and 302

Not listed.

Hazard Category under SARA(Title III), Sections 311 and 312

This product qualifies as a "hazardous substance" with delayed health effects.

Status under SARA (Title III), Section 313

This cement product does not contain Emergency Planning and Community Right to Know (EPCRA) Section 313 chemicals in excess of the applicable de minimis concentration specified in EPCRA Section 313 Section 372.38(a). Trace amounts of naturally occurring chemicals might be detected during chemical analysis.

Status under TSCA (as of May 1997)

The ingredients of this product are listed on the TSCA inventory or are exempt.

Status under the Federal Hazardous Substances Act

This product is a "hazardous substance" subject to statutes promulgated under the subject act.

Status under California Proposition 65

This product contains up to 0.05 percent of chemicals (trace elements) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove that the defined risks do not exist.

State Right to Know:

Portland Cement Clinker (65997-15-1)

U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Washington - Permissible Exposure Limits - TWAs

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Quartz (crystalline silica) (14808-60-7)

U.S. - Idaho - Non-Carcinogenic Toxic Air Pollutants - Acceptable Ambient Concentrations

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Washington - Permissible Exposure Limits - TWAs

Gypsum (7778-18-9)

U.S. - New Jersey - Right to Know Hazardous Substance List

Limestone (1317-65-3)

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Washington - Permissible Exposure Limits - TWAs

Section 16. Other Information

Approval or Revision History

Date of issue (mm/dd/yyyy):

July 1998

Revision:

April 2011 (Michael Tilton)

Revision:

May 2015 - Revised Section(s) per HCS-GHS

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of Portland Cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with Portland Cement to produce Portland Cement products. Users should review other relevant material safety data sheets before working with this Portland Cement or working on Portland Cement products, for example, Portland Cement concrete.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY CEMEX, Inc. except that the product shall conform to contracted specifications. The information provided herein was believed by CEMEX to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with Portland Cement to produce Portland Cement products. Users should review other relevant safety data sheets before working with Portland Cement or working on Portland Cement products, for example, Portland Cement concrete.

Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists

CAS — Chemical Abstract Service

CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act

CFR — Code of Federal Regulations DOT — Department of Transportation

GHS — Globally Harmonized System Globally Harmonized System

HEPA - High Efficiency Particulate Air

IATA — International Air Transport Association

IARC — International Agency for Research on Cancer

IMDG — International Maritime Dangerous Goods

NIOSH — National Institute of Occupational Safety and Health

NOEC — No Observed Effect Concentration

NTP — National Toxicology Program

OSHA — Occupational Safety and Health Administration

PEL — Permissible Exposure Limit

REL — Recommended Exposure Limit RQ — Reportable Quantity

SARA — Superfund Amendments and Reauthorization Act

SDS — Safety Data Sheet

TLV — Threshold Limit Value

TPQ — Threshold Planning Quantity

Safety Data Sheet

TSCA — Toxic Substances Control Act

TWA — Time-Weighted Average

UN — United Nations

SECTION 1: IDENTIFICATION

Product Identifier

Product Name: Lafarge Portland Cement (cement)

Synonyms: Cement, Portland Cement, Hydraulic Cement, Oil Well Cement, Trinity® White Cement, Antique White Cement, Portland Limestone Cement, Portland Cement Type I, IA, IE, II, I/II, IIA, II L.A., III, IIIA, IV, IVA, V, VA, 10, 20, 30, 40, 50, GU, GUL, MS, MH, HE, LH, HS, OWH, OWG Cement, OW Class G HSR, InfiniCem™

Note: This SDS covers many types of Portland cement. Individual composition of hazardous constituents will vary between types of Portland cement.

Intended Use of the Product

Cement is used as a binder in concrete and mortars that are widely used in construction. Cement is distributed in bags, totes and bulk shipment.

Name, Address, and Telephone of the Responsible Party

Company

Lafarge North America Inc.

8700 West Bryn Mawr Avenue, Suite 300

Chicago, IL 60631

Information: 773-372-1000 (9am to 5pm CST)

email: SDSinfo@Lafarge.com

Website: www.lafarge-na.com

Emergency Telephone Number

Emergency number : 1-800-451-8346 (3E Hotline)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Skin Corr. 1C H314

Eye Dam. 1 H318

Skin Sens. 1 H317

Carc. 1A H350

STOT SE 3 H335

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)



Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H314 - Causes severe skin burns and eye damage
H317 - May cause an allergic skin reaction
H318 - Causes serious eye damage
H335 - May cause respiratory irritation
H350 - May cause cancer (Inhalation)

Precautionary Statements (GHS-US)

: P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing should not be allowed out of the workplace.
P280 - Wear protective gloves, protective clothing, face protection, eye protection.
P301+P330+P331 - IF SWALLOWED: rinse mouth. Do NOT induce vomiting.
P303+P361+P353+P352 - IF ON SKIN (or hair): Remove/Take off immediately all

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contaminated clothing. Rinse skin with water/shower. Wash with plenty of soap and water.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P310 - Immediately call a POISON CENTER or doctor/physician.
P321 - Specific treatment (see Section 4).
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container according to local, regional, state, national, territorial, provincial, and international regulations.

Other Hazards

Other Hazards Not Contributing to the Classification: Inhalation can cause serious, potentially irreversible lung/respiratory tract tissue damage due to chemical (caustic) burns, including third degree burns. Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) or sensitivity to hexavalent chromium can be aggravated by exposure.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product identifier	% (w/w)	Classification (GHS-US)
Cement, portland, chemicals	(CAS No) 65997-15-1	100	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Limestone	(CAS No) 1317-65-3	0 - 15	Not classified
Gypsum (Ca(SO ₄).2H ₂ O)	(CAS No) 13397-24-5	2 - 10	Not classified
Calcium oxide	(CAS No) 1305-78-8	0 - 5	Skin Corr. 1C, H314 Eye Dam. 1, H318 STOT SE 3, H335
Magnesium oxide (MgO)	(CAS No) 1309-48-4	0 - 4	Not classified
Quartz	(CAS No) 14808-60-7	0 - 0.2	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: When symptoms occur: go into open air and ventilate suspected area. Keep at rest and in a position comfortable for breathing. If you feel unwell, seek medical advice.

Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water for at least 60 minutes. Immediately call a POISON CENTER or doctor/physician.

Eye Contact: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing for at least 60 minutes. Immediately call a POISON CENTER or doctor/physician.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Corrosive to eyes, respiratory system and skin. Exposure may produce an allergic reaction.

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Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Corrosive to the respiratory tract.

Skin Contact: Cement may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the body, can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort. Cement is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Irritant dermatitis is caused by the physical properties of cement including alkalinity and abrasion. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in cement. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with cement. Others may develop allergic dermatitis after years of repeated contact with cement.

Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Advice for Firefighters

Precautionary Measures Fire: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Do not get water inside containers. Do not apply water stream directly at source of leak.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: None.

Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Do not breathe dust. Do not get in eyes, on skin, or on clothing.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

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For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Ventilate area.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Place spilled material into a container. Avoid actions that cause the cement to become airborne. Avoid inhalation of cement and contact with skin. Wear appropriate protective equipment as described in Section 8. Scrape wet cement and place in container. Allow material to dry or solidify before disposal. Do not wash cement down sewage and drainage systems or into bodies of water (e.g. streams).

Methods for Cleaning Up: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Keep bulk and bagged cement dry until used. Stack bagged material in a secure manner to prevent falling. Bagged cement is heavy and poses risks such as sprains and strains to the back, arms, shoulders and legs during lifting and mixing. Handle with care and use appropriate control measures. Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains cement. Cement can buildup or adhere to the walls of a confined space. The cement can release, collapse or fall unexpectedly. Properly ground all pneumatic conveyance systems. The potential exists for static build-up and static discharge when moving cement powders through a plastic, non-conductive, or non-grounded pneumatic conveyance system. The static discharge may result in damage to equipment and injury to workers. Cutting, crushing or grinding hardened cement, concrete or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash contaminated clothing before reuse.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a dry, cool and well-ventilated place. Keep container closed when not in use.

Incompatible Materials: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Storage Temperature: Unlimited

Specific End Use(s) Cement is used as a binder in concrete and mortars that are widely used in construction. Cement is distributed in bags, totes and bulk shipment.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Limestone (1317-65-3)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³
British Columbia	OEL TWA (mg/m ³)	3 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Québec	VEMP (mg/m ³)	10 mg/m ³ (Limestone, containing no Asbestos and <1% Crystalline silica)

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Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	10 mg/m ³
Cement, portland, chemicals (65997-15-1)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
USA IDLH	US IDLH (mg/m ³)	5000 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL TWA (mg/m ³)	3 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Manitoba	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nova Scotia	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Ontario	OEL TWA (mg/m ³)	1 mg/m ³ (containing no Asbestos and <1% Crystalline silica)
Prince Edward Island	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Québec	VEMP (mg/m ³)	5 mg/m ³ (containing no Asbestos and <1% Crystalline silica)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	10 mg/m ³
Gypsum (Ca(SO4).2H2O) (13397-24-5)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³
British Columbia	OEL TWA (mg/m ³)	3 mg/m ³
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (total mass)
Ontario	OEL TWA (mg/m ³)	10 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³
Québec	VEMP (mg/m ³)	5 mg/m ³ (containing no Asbestos and <1% Crystalline silica)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	10 mg/m ³

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Calcium oxide (1305-78-8)		
Mexico	OEL TWA (mg/m ³)	2 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	2 mg/m ³
USA IDLH	US IDLH (mg/m ³)	25 mg/m ³
Alberta	OEL TWA (mg/m ³)	2 mg/m ³
British Columbia	OEL TWA (mg/m ³)	2 mg/m ³
Manitoba	OEL TWA (mg/m ³)	2 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	2 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	2 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	2 mg/m ³
Nunavut	OEL STEL (mg/m ³)	4 mg/m ³
Nunavut	OEL TWA (mg/m ³)	2 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	4 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	2 mg/m ³
Ontario	OEL TWA (mg/m ³)	2 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	2 mg/m ³
Québec	VEMP (mg/m ³)	2 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	4 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	2 mg/m ³
Yukon	OEL STEL (mg/m ³)	4 mg/m ³
Yukon	OEL TWA (mg/m ³)	2 mg/m ³
Magnesium oxide (MgO) (1309-48-4)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³
USA IDLH	US IDLH (mg/m ³)	750 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	10 mg/m ³
British Columbia	OEL TWA (mg/m ³)	3 mg/m ³
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³
Nunavut	OEL STEL (mg/m ³)	20 mg/m ³
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	20 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³
Ontario	OEL TWA (mg/m ³)	10 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³
Québec	VEMP (mg/m ³)	10 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	10 mg/m ³
Yukon	OEL TWA (mg/m ³)	10 mg/m ³
Quartz (14808-60-7)		
Mexico	OEL TWA (mg/m ³)	0.1 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³
USA OSHA	OSHA PEL (STEL) (mg/m ³)	250 mppcf/%SiO ₂ +5, 10mg/m ³ /%SiO ₂ +2
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³

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USA IDLH	US IDLH (mg/m ³)	50 mg/m ³
Alberta	OEL TWA (mg/m ³)	0.025 mg/m ³
British Columbia	OEL TWA (mg/m ³)	0.025 mg/m ³
Manitoba	OEL TWA (mg/m ³)	0.025 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	0.1 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	0.025 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	0.025 mg/m ³
Nunavut	OEL TWA (mg/m ³)	0.3 mg/m ³ (total mass)
Northwest Territories	OEL TWA (mg/m ³)	0.3 mg/m ³ (total mass)
Ontario	OEL TWA (mg/m ³)	0.10 mg/m ³ (designated substances regulation)
Prince Edward Island	OEL TWA (mg/m ³)	0.025 mg/m ³
Québec	VEMP (mg/m ³)	0.1 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	0.05 mg/m ³
Yukon	OEL TWA (mg/m ³)	300 particle/mL

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

Personal Protective Equipment: Gloves. In case of dust production: protective goggles. Dust formation: dust mask.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Wear gloves impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.

Eye Protection: Wear ANSI approved glasses or safety goggles when handling dust to prevent contact with eyes. Wearing contact lenses when using Limestone and Dolomite, under dusty conditions, is not recommended.

Skin and Body Protection: Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves.

Respiratory Protection: Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

Other Information: When using, do not eat, drink or smoke

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Gray, off white or white powder
Odor	: Odorless
Odor Threshold	: Not available
pH	: 12 - 13 (in water)
Relative Evaporation Rate (butylacetate=1)	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: > 1000 °C (> 1832 °F)
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available

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Relative Vapor Density at 20 °C	: Not available
Relative Density/Specific Gravity	: 3.15
Solubility	: Water: 0.1 - 1 % (slightly soluble)
Partition coefficient: n-octanol/water	: Not available
Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Chemical Stability: Stable under recommended handling and storage conditions (see section 7).

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Acids. Ammonium salts. Aluminum. Hydrofluoric acid. Water. Oxidizers.

Hazardous Decomposition Products: None known.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage. (pH: 12 - 13 (in water))

Serious Eye Damage/Irritation: Causes serious eye damage. (pH: 12 - 13 (in water))

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: May cause cancer (Inhalation).

Specific Target Organ Toxicity (Repeated Exposure): Not classified

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Corrosive to the respiratory tract.

Symptoms/Injuries After Skin Contact: Cement may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the body, can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort. Cement is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Irritant dermatitis is caused by the physical properties of cement including alkalinity and abrasion. Allergic contact dermatitis is caused by sensitization to hexavalent chromium

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(chromate) present in cement. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with cement. Others may develop allergic dermatitis after years of repeated contact with cement.

Symptoms/Injuries After Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Calcium oxide (1305-78-8)	
ATE CLP (oral)	500.000 mg/kg
Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
Quartz (14808-60-7)	
IARC Group	1
National Toxicity Program (NTP) Status	Known Human Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not classified

Calcium oxide (1305-78-8)	
LC50 Fish 1	1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])

Persistence and Degradability Not available

Bioaccumulative Potential

Calcium oxide (1305-78-8)	
BCF fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects Not available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

Additional Information: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14: TRANSPORT INFORMATION

14.1 In Accordance with DOT Not regulated for transport

14.2 In Accordance with IMDG Not regulated for transport

14.3 In Accordance with IATA Not regulated for transport

14.4 In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION



US Federal Regulations

Lafarge Portland Cement (cement)	
SARA Section 311/312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
Limestone (1317-65-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Cement, portland, chemicals (65997-15-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Calcium oxide (1305-78-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

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Magnesium oxide (MgO) (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Quartz (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
US State Regulations	
Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.
Limestone (1317-65-3)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Cement, portland, chemicals (65997-15-1)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Gypsum (Ca(SO₄).2H₂O) (13397-24-5)	
RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Calcium oxide (1305-78-8)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Magnesium oxide (MgO) (1309-48-4)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Quartz (14808-60-7)	
RTK - U.S. - Massachusetts - Right To Know List RTK - U.S. - New Jersey - Right to Know Hazardous Substance List RTK - U.S. - Pennsylvania - RTK (Right to Know) List	
Canadian Regulations	
Lafarge Portland Cement (cement)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class E - Corrosive Material
 	
Limestone (1317-65-3)	
Listed on Non-Domestic Substances List (NDSL)	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects
Cement, portland, chemicals (65997-15-1)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Class E - Corrosive Material
Calcium oxide (1305-78-8)	
Listed on the Canadian DSL (Domestic Substances List) inventory. Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Class E - Corrosive Material

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Magnesium oxide (MgO) (1309-48-4)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Uncontrolled product according to WHMIS classification criteria
Quartz (14808-60-7)	
Listed on the Canadian DSL (Domestic Substances List) inventory.	
Listed on the Canadian Ingredient Disclosure List	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision date : 04/23/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1C	Skin corrosion/irritation Category 1C
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure

Party Responsible for the Preparation of This Document

Lafarge North America Inc.
+1 773-372-1000 (9am to 5pm CST)

An electronic version of this SDS is available at: www.lafarge-na.com under the Sustainability and Products sections. Please direct any inquiries regarding the content of this SDS to SDSinfo@Lafarge.com.

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NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE, OR OTHERWISE.

North America GHS US 2012 & WHMIS

MATERIAL SAFETY DATA SHEET

Pozzolan – Type N

Manufacturer: Advanced Pozzolan Products Co., LLC
Address: 250 West Caselton Hwy, Box 308
Panaca, Nevada 89042
775-962-1670 fax: 775-728-4341

EMERGENCY TELEPHONE NUMBER (775) 728-4580

This Material Safety Data Sheet contains environmental, health, toxicology and handling information for persons transporting and using this product. This MSDS will be available to anyone upon request.

1. Product Identification: Pozzolan Type N (Temporary addition)

Danger! --Contains Silica; extended exposure may lead to silicosis.
--Considered Nuisance Dust

2. First Aid:

Eye contact: Flush eyes immediately with fresh water for at least 5 minutes.

No additional first aid should be necessary

Skin Contact: Wash skin thoroughly with soap and water. Wash contaminated clothing. Seek medical attention for skin irritation.

3. Protective Equipment:

Eye Protection: Wear eye protection at all times.

Skin Protection: Wear long-sleeved shirts and protective gloves.

Respiratory Protection: Always wear a respirator utilizing *hepa* filters.

Ventilation: Use in a properly ventilated area only.

4. Fire Protection:

Product does not support combustion.

5. Storage Handling and Reactivity:

Stability: Absolutely stable.

6. Hazardous Polymerization: Not applicable [does not polymerize]

7. Physical Properties:

Solubility in Water: slightly soluble.

Appearance: White granular particles.

Boiling Point: n/a

Evaporation: n/a

Melting Point: n/a

Evaporation: n/a

Specific Gravity: 2.29

Odor: n/a

8. Environmental Concerns: Spill Response and Disposal—

Hazardous Ingredients: n/a

Decomposition: n/a

USDOT Restrictions: n/a

Storage Precautions: n/a

Hazardous by-products: n/a

Special Spill Procedures: n/a

Waste Disposal (Uncontaminated): n/a

Waste Disposal (Contaminated): per landfill regs.
[May be used as soil enhancer or landfill additive]

9. Chemical Composition:

Pozzolan Type N: SiO₂, AlO₃, Fe₂O₃

Chemical Additives: n/a

[Note: No responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, failure to follow recommend practices, or from any hazards inherent in the nature of the product.]

PROCESSED NATURAL POZZOLAN (TYPE N)

Advanced Pozzolan Products
450 E. Main, Box 308
Panaca, Nevada 89042
[775-962-1670]

2500 pounds



**PROCESSED
NATURAL
POZZOLAN
(TYPE N)
2,500 pounds**

Advanced Pozzolan Products
450 E. Main, Box 308
Panaca, Nevada 89042
[775-962-1670]





MATERIAL SAFETY DATA SHEET

Chemical Name or Synonym
Precast Polymer Concrete Products

Product Name
Quazite®, Polycast®, Poly-Blok®,
Polyvent®, and STAFORM®

SECTION 1

Manufacturer's

Name: **Hubbell Lenoir City**

Address: **2911 Industrial Park Drive**

Emergency

Telephone No. **(865) 986-5533**

City, State, and Zip: **Lenoir City, TN 37771**

Other Information

Signature of Person

Responsible for Preparation (optional)

Date Prepared

7/24/06

SECTION 2

Hazardous Component(s) (chemical & common name(s))

CAS

OSHA

ACGH

%

This product meets the definition of "article" under "29CFR1910-1200 (c) October, 1989 – A manufacturer item: I. Which is formed to a specific shape or design during manufacture; II. Which has end function (s) dependent in whole or part upon its shape or design during end use and III. Which does not release or otherwise result in exposure to a hazardous chemical under normal conditions of use. It is therefore not considered a hazardous material.

SECTION 3 – PHYSICAL & CHEMICAL CHARACTERISTICS

Boiling Point	N/A	Specific Gravity(H ₂ O=1)	1.3 – 2.3	Vapor Pressure (mm Hg)	N/A
Vapor Density (air=1)	N/A	Solubility in Water	N/A	Reactivity in Water	N/A
Appearance and Odor	N/A	Melting Point	N/A		

SECTION 4 – FIRE & EXPLOSION DATA

Flash Point	N/A	Method Used	N/A	Flammable Limits in Air % by Volume	N/A	LEL Lower	N/A	UEL Upper	N/A
Auto-Ignition Temperature	N/A			Extinguisher Media	N/A				
Special Fire Fighting Procedures	N/A								

Unusual Fire and Explosion Hazards

None Known (Polymer Concrete products are not flammable under normal conditions of use).

SECTION 5 – PHYSICAL HAZARDS (REACTIVITY DATA)

Stability	Unstable <input type="checkbox"/>	Conditions	NONE
	Stable <input checked="" type="checkbox"/>		

Incompatibility (Materials to Avoid)	N/A
---	-----

Hazardous Decomposition Products	N/A
-------------------------------------	-----

Hazardous Polymerization	May Occur <input type="checkbox"/>	Conditions to Avoid	NONE
	Will Not Occur <input checked="" type="checkbox"/>		

SECTION 6 –HEALTH HAZARDS

1. Acute:	NONE	2. Chronic:	This product is not hazardous but may produce nuisance dust and respiratory free silica when it is ground or cut with a dry abrasive.
-----------	------	-------------	---

Signs and symptoms of Exposure	Repeated and prolonged exposure to dust containing respirable silica may cause injury to the lungs (silicosis).
--------------------------------	---

Medical Conditions Generally Aggravated by Exposure	Asthma and other respiratory illnesses.
--	---

Emergency and First Aid Procedures	Move exposed personnel to a dust free area. Flush eyes with plenty of water.
------------------------------------	--

ROUTES OF ENTRY

1. Inhalation	NIOSH approved dust mask should be used when cutting or grinding.
2. Eyes	Full eye protection should be used when cutting or grinding.
3. Skin	N/A
4. Ingestion	N/A

SECTION 7 – SPECIAL PRECAUTIONS AND SPILL/LEAK PROCEDURES

Precautions to be taken	Wear goggles and appropriate respiratory protection when dry sawing or grinding.
-------------------------	--

Other precautions	NIOSH approved dust mask when dry sawing or grinding.
-------------------	---

Steps to be taken in case material is released or spilled	Polymer concrete is a non-toxic solid and requires no special procedures.
--	---

Waste Disposal Methods (consult federal, state, and local regulations)	Polymer concrete may be disposed of by land filling according to local laws and ordinances
--	--

SECTION 8 – SPECIAL PROTECTION INFORMATION/CONTROL MEASURES

Respiratory Protection (Specify Type)	Use NIOSH approved dust mask for prolonged grinding or cutting if dusty conditions exist.
--	---

Ventilation	YES	Local Exhaust	YES	Mechanical (General)	N/A	Special	N/A	Other	N/A
-------------	-----	---------------	-----	-------------------------	-----	---------	-----	-------	-----

Protective Gloves	Not Required	Eye Protection	Wear safety glasses to protect eyes from dust particles.
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Other Protective Clothing or Equipment	NONE
--	------

Work/Hygienic Practices	N/A
-------------------------	-----

IMPORTANT

Do not leave any blank spaces. If required information is unavailable, unknown or does not apply, so indicate.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

1. PRODUCT AND COMPANY IDENTIFICATION

Product Name: Granular Absorbent - IL - MS

SDS Number: 1003000

Manufacturer:	Oil-Dri Corporation of America 410 North Michigan Avenue Chicago, IL 60611 +1-312-321-1515
TRANSPORTATION EMERGENCY INFORMATION:	Chemtrec +1-800-424-9300 (US and Canada) +1-703-527-3887 (International - Call Collect)

Product Use: Absorbent

Restrictions On Use: Not to be used with turpentine, hydrofluoric acid, vegetable oil, and other unsaturated organic compounds (such as fish oil), as this may generate heat and/or fire.

2. HAZARDS IDENTIFICATION

GHS Classification:

Health: Carcinogen Category 1A

Specific Target Organ Toxicity - Repeat Exposure Category 1

Environmental: Not Hazardous

Physical: Not Hazardous

GHS Labeling:

Pictogram:



Health Hazard

DANGER!

H350 May cause cancer by inhalation.

H372 Causes damage to lungs through prolonged or repeated exposure by inhalation.

Prevention: P202 Do not handle until all safety precautions have been read and understood.

P260 Do not breathe dust.

P264 - Wash thoroughly after handling

P280 Wear protective gloves and clothing.

P270 Do not eat, drink or smoke when using this product.

Response: P308 + P313 IF exposed or concerned: Get medical advice/attention.

Storage: Store in a dry area.

Disposal: P501 Dispose of contents/container in accordance with all local and national regulations.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No./ EINECS-No	%
Bentonite	1302-78-9	90-100%
Quartz (crystalline silica) (Respirable <1%)	14808-60-7	0-10%

4. FIRST AID MEASURES

Inhalation: Move to fresh air. If irritation or other symptoms occurs, get medical attention.

Skin contact: No first aid should be needed.

Eye contact: Immediately flush eyes with cool running water, lifting upper and lower lids. If irritation persists or for foreign body in the eye, get medical attention.

Ingestion: If used material is ingested, get medical attention due to possibility of chemical contamination. If large amount of unused material is swallowed, get immediate medical attention.

Most Important symptoms and effects, both acute and delayed: Eye contact may cause mechanical irritation and possible eye injury. May cause mechanical skin and respiratory irritation. This product contains <1% respirable crystalline silica. May cause cancer if respirable dust is inhaled over prolonged periods. This product contains crystalline silica. Inhalation of respirable crystalline silica may cause lung disease, silicosis with symptoms of shortness of breath and cough.

Indication of any immediate medical attention and special treatment needed: No immediate medical attention is required.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

5. FIREFIGHTING MEASURES

Suitable Extinguishing Media: Use media that is appropriate for surrounding fire; unused product is not combustible.

Specific Hazards Arising from the Chemical: None for unused product.

Special Protective Equipment and Precautions for Fire-fighters: Firefighters should always wear self-contained breathing apparatus and full protective clothing for fires involving chemicals or in confined spaces.

6. ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment, and Emergency Procedures: No special equipment is generally required for spill clean-up. For dusty conditions, an approved respirator may be needed. Refer to Section 8 for additional information.

Environmental Hazards: Report releases as required by local and federal regulations.

Methods and Materials for Containment and Cleaning Up: Sweep up and collect unused material for re-use or disposal. For dusty conditions, an approved respirator may be needed. Refer to Section 8 for additional information.

7. HANDLING AND STORAGE

Precautions for Safe Handling: Avoid breathing dust. Avoid contact with eyes, skin, and clothing. Wash thoroughly with soap and water after use. If clothing becomes dusty, launder before re-use. Use only with adequate ventilation. Minimize the generation and accumulation of dust. Follow good housekeeping practices to keep surfaces, including areas overhead such as piping, drop ceilings, ductwork, etc. free from settled dust. Dry powders can build static electricity charges when subjected to friction of transfer and in mixing operations.

Conditions for Safe Storage, including any Incompatibilities: Store in a dry area. Keep away from turpentine, hydrofluoric acid, vegetable oil, and other unsaturated organic compounds (such as fish oil), as this may generate heat and/or fire.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure limit(s)

Chemical Name	Exposure limit(s)
Bentonite	15 mg/m ³ PEL-TWA (total dust), 5 mg/m ³ PEL-TWA (respirable dust)
Quartz (crystalline silica) (Respirable <1%)	30 mg/m ³ / %SiO ₂ +2 (total dust) TWA OSHA PEL 10 mg/m ³ / %SiO ₂ +2 (respirable dust) TWA OHA PEL 0.025 mg/m ³ (respirable dust) TWA ACGIH TLV

Appropriate Engineering Controls: General ventilation is adequate for normal use. If handling produces airborne dust, local exhaust ventilation may be needed.

Individual Protection Measures, such as Personal Protective Equipment:

Eye Protection: Safety glasses or goggles if needed to prevent eye contact.

Skin Protection: None required for normal use.

Respiratory Protection: None required for normal use. For operations where the dust concentration may be excessive, a dust respirator may be used. Follow OSHA regulations in the selection and use of respiratory protection.

9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value
Appearance:	Gray to Tan to Red Granular Solid
Odor Threshold:	Not applicable.
Boiling point/range	Not applicable.
Melting point/range	Not available
Relative density	2.2
Vapor pressure	Not applicable.
Vapor density (air=1)	Not applicable.
Solubility	Insoluble
pH	Not applicable.
Partition coefficient (n-octanol/water):	Not available
Evaporation Rate (Butyl acetate=1)	Not applicable.
Viscosity:	Not applicable.
Volatile Organic Carbon Compounds (VOC) (g/L)	Not available
Flashpoint:	Not applicable.
Flammable Limits in Air % by Volume:	LEL (Lower):Not applicable. UEL (Upper): Not applicable.
Autoignition temperature:	Not available
Decomposition temperature:	Not available
Flammability (solid, gas):	Not flammable

10. STABILITY AND REACTIVITY

Reactivity: Not normally reactive.

Chemical Stability: Stable

Possibility of Hazardous Reactions: Spontaneous combustion can occur when this product is used to absorb high concentrations of chemicals having a high heat of absorption such as olefins, hydrochloric acid, etc.

Conditions to Avoid: None.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

Incompatible Materials: Turpentine, hydrofluoric acid, vegetable oil, fish oil, unsaturated organic compounds.

Hazardous Decomposition Products: None.

11. TOXICOLOGICAL INFORMATION

Potential Health Effects:

Acute Hazards:

Inhalation: Inhalation of dust may cause irritation to the eyes, nose, throat and respiratory tract.

Skin contact: No known hazard.

Eye contact: Contact may cause mechanical, abrasive irritation with possible injury.

Ingestion: No known hazard.

Chronic Effects: Inhalation of excessive concentrations of any dust, including this material, may lead to lung injury. This product contains crystalline silica, in the form of quartz. Excessive inhalation of respirable crystalline silica may cause silicosis, a progressive, disabling and sometimes fatal disease of the lung. Symptoms may include cough, shortness of breath, wheezing and reduced pulmonary function.

Carcinogenicity Listing: The International Agency for Research on Cancer (IARC), in Monograph 100C has concluded that crystalline silica inhaled in the form of quartz is carcinogenic to humans (Group 1). Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs. The National Toxicology Program (NTP) classifies crystalline silica as a known carcinogen. Applications and exposure data indicate that exposure to respirable quartz in this product with normal use is well below the OSHA Permissible Exposure Limit (PEL) and ACGIH Threshold Limit Value (TLV). The manufacturer is not aware of any scientific or medical data available indicating that exposure to respirable crystalline silica from this product under conditions of normal use will cause silicosis or cancer. Adverse effects would not be expected from normal use of this product.

Acute Toxicity Values: Silica: LD50 oral rat 22,500 mg/kg, LC50 carp >10,000mg/L/72 hr.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No data available for the product. No adverse effects on the environment are expected.

Persistence and Degradability: Bentonite and silica are non-degradable.

Bioaccumulative Potential: Not bioaccumulative.

Mobility in Soil: No data available

Other Adverse Effects: None currently known.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

13. DISPOSAL CONSIDERATIONS

Dispose in accordance with local, state and federal environmental Regulations. Unused material is suitable for disposal in sanitary landfill. Used material may be subject to regulation, depending on the nature of the material absorbed. Check with appropriate regulatory authority for used material containing hazardous waste.

14. TRANSPORT INFORMATION

US DOT Shipping Description: Not regulated

IATA Shipping Description (Air): Not regulated

Proper Shipping Name: Not regulated

UN Number: Not applicable.

Packing Group: Not applicable.

Labels Required: None.



SAFETY DATA SHEET

Granular Absorbent - IL - MS

15. REGULATORY INFORMATION

US Regulations

SARA 311/312 Hazard Categories: Chronic Health

SARA 313 This Product Contains the Following Chemicals Subject to Annual Release Reporting Requirements Under the SARA Section 313 (40 CFR 372): None.

SARA 302 Listed Chemicals: None.

CERCLA: This product is not subject to CERCLA release reporting. Many states have more stringent reporting requirements. Report releases as required by local and state regulations.

California Proposition 65: This product contains respirable crystalline silica which is known to the State of California to cause cancer.

EPA Toxic Substances Control Act (TSCA): All of the components of this product are listed on the TSCA Inventory or exempted from TSCA.

International Regulations:

EU REACH: Contact Oil Dri for information on REACH status.

Japan MITI: No data available

AICS: No data available



SAFETY DATA SHEET

Granular Absorbent - IL - MS

16. OTHER INFORMATION

Date Prepared: 7/7/2015

Revision Summary: May 29, 2015 - Conversion to Hazcom 2012 classification and labeling and format.

July 7, 2015 - Section 16 Products List

HMIS Rating: Health 0* Fire 0 Reactivity 0

0 = Minimal Hazard, 1 = Slight Hazard, 2 = Moderate Hazard, 3 = Serious Hazard, 4 = Severe Hazard

List of Associated Products:

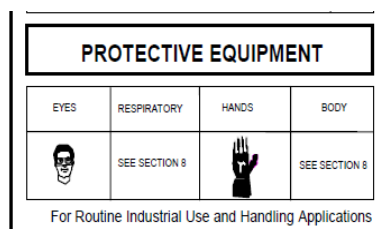
Absorbs It	Oil-Dri Quick Sorb	Oil-Dri Premium Absorbent
Leak & Spill	Private Label Absorbents	

The information contained herein is true and correct to the best of Oil-Dri Corporation of America's knowledge. However, no warranty, expressed or implied, is made. Nothing herein should be interpreted as a recommendation to infringe existing patents or violate any laws or regulations. Final determination of the suitability of the material is the sole responsibility of the user.

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION**PRODUCT NAME:** Marking Chalk Red**USE OF PRODUCT:** Chalk Box Marking Chalk**MANUFACTURER:** Keson Industries**ADDRESS:** 810 Commerce St., Aurora, IL 60504**EMERGENCY PHONE:** 1-800-345-3766 (8am to 5pm Central Time, Monday – Friday)**SECTION 1 NOTES:****SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS**

Substance name	Value (%)	CAS No.	EC No.
Calcium carbonate (1)	85-90	471-34-1	207-439-9
Red Iron Oxide	10 - 15	1317-61-9	215-168-2
Silica (crystalline quartz) (1)	0.1 - 1	14808-60-7	238-878-4

1 Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

SECTION 2 NOTES:**SECTION 3: HAZARDS IDENTIFICATION****OSHA GHS Hazard Statements (Warning Label)****DANGER –May cause cancer (lung)****Hazard Ratings:****Hazardous Material Identification System (HMIS):** Health 1*, Flammability 0, Reactivity 0*chronic effects**National Fire Protection Association (NFPA):** Health 1, Flammability 0, Reactivity 0Hazard Scale: 0 = Minimal 1 = Slight 2 = Moderate
3 = Serious 4 = Severe * = Chronic hazard**EMERGENCY OVERVIEW:****Product Description:** These products are colored, finely powdered, odorless chalks. Health Hazards: Inhalation of dusts from this product may irritate the respiratory system. Skin and eye contact may cause mechanical abrasion. These chalks contain Crystalline Silica, a known human carcinogen by inhalation.**Flammability Hazards:** These chalks are not flammable. Finely divided dusts from these products can form explosive mixtures in air. If involved in a fire, these products may decompose to form iron oxides, aluminum oxides, silicon dioxide, sulfur dioxide, magnesium oxides, carbon oxides and calcium oxides.**POTENTIAL HEALTH EFFECTS****EYES:** May cause irritation. Chalk dust is discomforting and abrasive to the eyes.**SKIN:** Prolonged contact may cause irritation. When the product is used as intended, it is unlikely to cause problems.**INGESTION:** Ingestion of large amount may cause internal irritation. Ingestion is considered an unlikely route of entry in commercial or industrial environments.**INHALATION:** May irritate the respiratory system. When the product is used as intended, it is unlikely to cause problems.**Chronic:** Repeated or prolonged inhalation exposure to crystalline silica dust beyond exposure limits may cause chronic lung injury (silicosis). Prolonged inhalation of iron oxide dust is known to produce a benign lung condition known as siderosis. When the product is used as intended, dust levels should not exceed exposure limits. See Sections 8 and 11.

**WARNING****DANGER**

Obtain special instructions before use. May cause cancer by inhalation. Avoid breathing dust or fume. Causes serious eye irritation. Causes mild skin irritation. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection.

SECTION 3 NOTES:**SECTION 4: FIRST AID MEASURES**

EYES: If product enters the eye do not rub, rubbing may cause abrasions. Flush eyes with copious amounts of water for 15 minutes, occasionally lifting upper and lower eyelids. If adverse effects persist after flushing with water, get medical aid.

SKIN: Wet clothing first to minimize dust generation, then; remove contaminated clothing and shoes. Wash contaminated clothing before wearing again. Wash infected areas with water and soap. Get medical attention in the event of irritation.

INGESTION: If this material is swallowed, CALL PHYSICIAN OR POISON CONTROL CENTER FOR MOST CURRENT INFORMATION. If professional advice is not available, seek immediate medical attention. If alert, victim should drink up to three glasses of water. Do not induce vomiting. Never induce vomiting or give diluents (milk or water) to someone who is unconscious, having convulsions, or unable to swallow. If victim is convulsing, maintain an open airway and obtain emergency medical attention.

INHALATION: If dust or particulates are inhaled, Remove from exposure and move to fresh air immediately. Encourage to blow nose to ensure clear breathing passages. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

NOTES TO PHYSICIANS OR FIRST AID PROVIDERS: Show this data safety sheet to medical professionals.

SECTION 5: FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Substance is noncombustible, however; the containers may burn, releasing carbon monoxide and carbon dioxide. Use appropriate extinguishing media for the combustible material involved in a fire.

SPECIAL FIRE FIGHTING PROCEDURES: As in any fire, wear self-contained breathing apparatus in pressure demand and full protective gear.

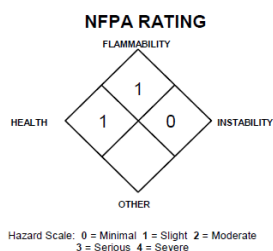
FIRE EXTINGUISHING MEDIA: Unless incompatibilities exist for surrounding materials, carbon dioxide, water spray, „ABC“ type chemical extinguishers, foam, dry chemical and halon extinguishers can be used to fight fires involving this material.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Finely divided dusts from this material pose a hazard of an air/dust explosion in presence of an ignition source

HAZARDOUS DECOMPOSITION PRODUCTS: If oxidation of this product should occur, heat will be liberated which could cause surrounding combustibles to burn.

SAFETY DATA SHEET (MSDS)

DATE: 3.25.2015 Rev 1



SECTION 6: ACCIDENTAL RELEASE MEASURES

ACCIDENTAL RELEASE MEASURES: Wear appropriate personal protective equipment. Do not allow this material to be released into the environment. Recover the product whenever possible. Avoid generating dust when sweeping or shoveling up. If required, wet the material with water to prevent creating dust. Pick up and place in a suitable container for reclamation or disposal.

Cleanup of Small Spills: Solids should be gently covered with wet absorbent pads. Clean spill with pad and dispose of properly. Decontaminate the spill area (three times) using a bleach and detergent solution and then rinse with clean water.

Large Spills: Restrict access to the spill areas. For spills of greater than 5 g, be sure not to generate dusts by gently covering with damp absorbent sheets, spill-control pads, pillows, cloths, or towels. The dispersion of particles into surrounding air and the possibility of inhalation is a serious matter and should be treated as such. Do not apply chemical in-activators as they may produce hazardous by-products. Sweep up or vacuum spilled solid (an explosion-proof vacuum should be used), avoiding the generation of airborne dusts. Decontaminate the area thoroughly.

All Spills: Use procedures described above and then place all spill residues in an appropriate, labeled container and seal. Move to a secure area. Dispose of in accordance with Federal, State, and local hazardous waste disposal regulations (see Section 13, Disposal Considerations). For spills on water, contain, minimize dispersion and collect. Dispose of recovered material and report spill per regulatory requirements.

SECTION 7: HANDLING AND STORAGE

PRECAUTIONS FOR SAFE HANDLING: All employees who handle this material should be trained to handle it safely. Open containers slowly on a stable surface. As with all chemicals, avoid getting this product ON YOU or IN YOU. Wash thoroughly after handling this product. Do not eat, drink, smoke, or apply cosmetics while handling this product. Avoid breathing airborne dusts generated by this product. Use in a well-ventilated area. Ensure this product is used with adequate ventilation and personal protective equipment (see Section 8, Exposure Controls and Personal Protection). Avoid airborne dusts generated by this product. Clean work areas routinely to prevent accumulation of dust. Clean up spills promptly.

CONDITIONS FOR SAFE STORAGE: Empty containers may contain residual amounts of this product; therefore, empty containers should be handled with care. Store containers in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Store away from incompatible materials (see Section 10, Stability and Reactivity). Have appropriate extinguishing equipment in the storage area (e.g., sprinkler system, portable fire extinguishers). Keep container tightly closed when not in use. Refer to NFPA 654, *Prevention of Fire and Dust Explosions from the Manufacturing, Processing and Handling of Combustible Particulate Solids* for additional information on storage.

SPECIFIC END USE(S): These products are used in chalk line devices in construction. Follow all industry standards for use of this product.

PROTECTIVE PRACTICES DURING MAINTENANCE OF CONTAMINATED EQUIPMENT: Follow practices indicated in Section 6 (Accidental Release Measures). Make certain that application equipment is locked and tagged-out safely. Always use this product in areas where adequate ventilation is provided. Decontaminate equipment thoroughly, before maintenance begins. Collect all residue and dispose of according to applicable or applicable federal, state, provincial and local standards.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Limit 8-Hour TWA ¹ (mg/m ³)					
Component	CAS No.	% by weight	OSHA PEL	ACGIH TLV	NIOSH REL
Calcium Carbonate (Limestone) (4)	471-34-1; (1317-65-3)	85-90	15(2), 5 (3)	10(2)	10(2), 5(3)
Red Iron Oxide	1317-61-9	10-15	10	5(3)	5
Silica-Crystalline Quartz (4)	14808-60-7	0.1-1.0	10(2,5),3.3(3,5)	0.05(3)	0.05(3)

¹TWA = Time-weighted average

²Total dust.

³Respirable dust.

⁴Calcium carbonate may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

⁵Using the OSHA quartz formula, this PEL was calculated assuming crystalline silica content of 1.0% in this ingredient.

SPECIAL NOTE: The following information is provided to assist employers in complying with OSHA regulations found in 29 CFR Subpart I (beginning at 1910.132, including U.S. Federal OSHA Respiratory Protection (29 CFR 1910.134), OSHA Eye Protection 29 CFR 1910.133, OSHA Hand Protection 29 CFR 1910.138, OSHA Foot Protection 29 CFR 1910.136 and OSHA Body Protection 29 CFR 1910.132), equivalent standards of Canada (including CSA Respiratory Standard Z94.4-02, Z94.3-M1982, Industrial Eye and Face Protectors and CSA Standard Z195-02, Protective Footwear), or standards of EU member states (including EN 529:2005 for respiratory PPE, CEN/TR 15419:2006 for hand protection, and CR 13464:1999 for face/eye protection). Please reference applicable regulations and standards for relevant details.

ENGINEERING CONTROLS: Facilities storing or utilizing this material should have potable water available for washing of eyes and skin. Use sufficient general area ventilation. To ensure exposure levels are maintained below the limits provided in this section if applicable.

VENTILATION: Local ventilation should be used.

RESPIRATORY PROTECTION: Maintain airborne contaminant concentrations below exposure limits listed above. For materials without listed exposure limits, minimize respiratory exposure. If necessary, use only respiratory protection authorized under appropriate regulations. Oxygen levels below 20% are considered IDLH by U.S. OSHA. In such atmospheres, use of a full-face piece pressure/demand SCBA or a full face piece, supplied air respirator with auxiliary self-contained air supply is required under U.S. OSHA's Respiratory Protection Standard (1910.134-1998).

EYE PROTECTION: Wear safety goggles/glasses as appropriate for the task if dust or other particulates are present. Face shields maybe recommended if solutions are made. If necessary, refer to appropriate regulations.

SKIN PROTECTION: Use appropriate protective clothing for the task. Full-body protective clothing and gloves are recommended for emergency response procedures. If necessary, refer to the U.S. OSHA Technical Manual (Section VII: Personal Protective Equipment) or other appropriate regulations.

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: No information found.

WORK HYGIENIC PRACTICES: Wash contaminated clothing before reuse.

EXPOSURE GUIDELINES: No information found.

SECTION 8 NOTES:

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: Powder – Red Color

ODOR: Odorless

pH AS SUPPLIED: 8.5-9.5 (at 10% solids)

BOILING POINT: No Data Available

MELTING POINT: Decomposes

F: 1517 Deg

C: 825Deg

FREEZING POINT: No Data Available.

VAPOR PRESSURE (mmHg): No Data Available.

VAPOR DENSITY (AIR = 1): No Data Available.

SPECIFIC GRAVITY (H₂O = 1): No Data Available.

EVAPORATION RATE: No Data Available.

SECTION 9 NOTES:

SECTION 10: STABILITY AND REACTIVITY

STABILITY: Stable under normal temperatures and pressures.

CONDITIONS TO AVOID (STABILITY): Incompatible materials

INCOMPATIBILITY (MATERIAL TO AVOID): Strong oxidizing agents, acids, aluminum, fluorine, magnesium, peroxides, hydrazine, calcium hypochlorite, performic acid, and bromine pentafluoride.

HAZARDOUS DECOMPOSITION OR BY-PRODUCTS: Carbon monoxide, carbon dioxide, calcium oxide.

HAZARDOUS POLYMERIZATION: Does not occur.

SECTION 10 NOTES:

SECTION 11: TOXICOLOGICAL INFORMATION

TOXICOLOGICAL INFORMATION: SYMPTOMS OF EXPOSURE BY ROUTE OF EXPOSURE: The most significant routes of industrial exposure to this product are by skin or eye contact and inhalation.

INHALATION: If dusts or particulates from these products are inhaled, irritation of the nose, throat, and lungs can occur. Symptoms may include sneezing, coughing, nasal congestion, and difficulty breathing. Symptoms are generally alleviated upon exposure to fresh air. If heated, chronic exposure to concentrations of silicon dioxide fume may cause chronic obstructive lung disease. Inhalation of iron oxide fume or dust is cause of pulmonary roentgen graphic appearance called siderosis, or an accumulation of iron that leads to reduced lung capacity. These products contain Crystalline Silica, which is a known human carcinogen. Chronic inhalation exposure to this material may cause silicosis, pulmonary fibrosis, bronchitis or present a hazard of cancer, due to the presence of Crystalline Silica.

CONTACT WITH SKIN or EYES: Skin contact may cause abrasion, redness, and discomfort. Prolonged and repeated skin exposure may cause dermatitis (dry, red skin). Direct eye contact with these products may cause stinging, abrasions, and redness. Dust can cause mechanical irritation to the eye. Repeated contact of dust with the eyes can cause conjunctivitis a disease that may cause eyes to become pink and sore), or can cause discoloration of the eyes.

SKIN ABSORPTION: This product does not pose a hazard of skin absorption.

INGESTION: Ingestion is an unlikely route of occupational exposure to this product. In the unlikely event that dusts from the product are ingested nausea, vomiting, and diarrhea may result.

Repeated ingestion of iron compounds can cause vomiting, diarrhea, pink urine, black stool, and liver or kidney damage. Repeated ingestion of iron compounds can also cause siderosis, which is an accumulation of iron in tissues.

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Chronic: Repeated inhalation exposure of crystalline silica above safe levels may cause adverse effects to the respiratory system. Chronic inhalation may result in pulmonary fibrosis. This product contains crystalline silica, which is a known human carcinogen.

SECTION 11 NOTES: The International Agency for Research on Cancer (IARC) classified (quartz) crystalline silica (cs) as a probable carcinogen and in 1997 reclassified it as a Group 1 carcinogen, i.e., that there was sufficient evidence for carcinogenicity in experimental animals and sufficient evidence for carcinogenicity in humans. In its Ninth Annual Report on Carcinogens, the National Toxicology Program (NTP) listed crystalline silica as a known human carcinogen, based on sufficient evidence of carcinogenicity from studies in humans indicating a causal relationship between exposure to respirable crystalline silica and increased lung cancer rates in workers exposed to crystalline silica dust. The International Agency for Research on Cancer (IARC) has evaluated crystalline silica and determined that "crystalline silica inhaled in the form of quartz or cristobalite from occupational sources is carcinogenic to humans (Group 1)."

SECTION 12: ECOLOGICAL INFORMATION

ECOLOGICAL INFORMATION: Safe practices must be in place to prevent environmental contamination.

SECTION 12 NOTES: These products have not been tested for aquatic or animal toxicity. All release to terrestrial, atmospheric and aquatic environments should be avoided.

SECTION 13: DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Waste from residue of this product is NOT hazardous waste according to the EPA regulations. Disposal by landfill may be acceptable. Waste disposal must follow all US Federal, State and Local (EPA) regulations, Canadian and European Governmental Guidelines.

SECTION 13 NOTES:

SECTION 14: TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION: (DOT) These products are not classified as dangerous goods under the DOT regulations 49CFR: 172.101

WATER TRANSPORTATION: (IMO) Not classified as dangerous

AIR TRANSPORTATION: (ATA) Not classified as dangerous

SECTION 14 NOTES:

SECTION 15: REGULATORY INFORMATION

U.S. FEDERAL REGULATIONS

OSHA: Components are listed as air contaminants. Regulation standards -29CFR. Standard number 1910.100 Table 2-1

TSCA (TOXIC SUBSTANCE CONTROL ACT): All components are listed on the TSCA inventory

CERCLA (COMPREHENSIVE RESPONSE COMPENSATION, AND LIABILITY ACT): Not Listed

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SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT): The components of this product has been reviewed on the EAP Hazards Categories in section 311-312 and is considered a chronic health risk.

STATE REGULATIONS: California: (Proposition 65) This product contains compounds known to the State of California to cause cancer reproductive harm.

CANADA WHIMS: (Workplace Hazardous Materials Information System) This SDS sheet contains all of the information needed by the CPR. (Controlled Products Regulation)

WHIMS CLASSIFICATION D2A: Very toxic (carcinogenicity)

EU CLASSIFICATION, LABELING: This product does meet the definition of hazard class described by the EUROPEAN UNION COUNCIL DIRECTIVE EC# 1272/2008. Classification information for components Crystalline Silica. EU Classification (xn) Harmful EU risk r68/20 harmful: Risk of irreversible damage through inhalation.

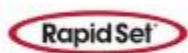
SECTION 15 NOTES:

SECTION 16: OTHER INFORMATION

The contents and format of this SDS are in accordance with the U.S. Hazard Communication Standard 29 CFR 1910.1200; the Canadian CPR, and Workplace Hazardous Materials Information System (WHMIS); and EEC Commission Directive 1999/45/EC, and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are correct. However, the information is provided without any warranty, regarding its correctness. The conditions or methods of handling, storage, use or disposal of the product are beyond our control. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

End of document



SAFETY DATA SHEET

1. Identification

Product identifier	Rapid Set Cement All
Other means of identification	
Product code	120010055, 120012000, 120013000, 120020010, 120020025, 120040055
Recommended use	Industrial use.
Recommended restrictions	Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Company name	CTS Cement Manufacturing Corporation
Address	11065 Knott Ave Suite A Cypress, CA 90630 United States
Telephone	1-800-929-3030
E-mail	info@ctscement.com
Contact person	Safety Officer
Emergency telephone number	1-800-929-3030 (8 AM - 5 PM)

2. Hazard(s) identification

Physical hazards	Not classified.	
Health Hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1A
	Specific Target Organ Toxicity, Single Exposure	Category 3 respiratory tract irritation
	Specific Target Organ Toxicity, Repeated Exposure	Category 2 (Lungs)
	Not classified.	

OSHA defined hazards

Label elements



Signal word	Danger
Hazard statement	Causes skin irritation. Causes serious eye damage. May cause cancer. May cause respiratory irritation. May cause damage to organs (Lungs) through prolonged or repeated exposure.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Use in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If exposed or concerned: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
Storage	Keep container tightly closed. Store in dry location.

Disposal
Hazard(s) not otherwise
classified (HNOC)

Dispose of contents/container in accordance with local/regional/national/international regulations.
None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Calcium Sulfoaluminate Cement	960375-09-1	40-60
Silica Sand, quartz	14808-60-7	40-60
Sodium Sulfate	7757-82-6	0-4
Methanal	50-00-0	0.0-0.1

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation

If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion

Immediately rinse mouth and drink plenty of water. Call an ambulance and take these instructions. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Upper respiratory tract irritation. Coughing. Discomfort in the chest. Shortness of breath. Wheezing. Skin irritation.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Move containers from fire area if you can do so without risk.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Stop the flow of material, if this is without risk. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains or water courses.

7. Handling and storage

Precautions for safe handling

Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Do not breathe dust. Do not get this material in contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store in dry location. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Silica, quartz (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Silica, quartz (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Silica, quartz (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses or safety goggles unless full face respirator is in use.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.

9. Physical and chemical properties**Appearance**

Physical state	Solid.
Form	Powder.
Color	Tan.
Odor	Low.
Odor threshold	Not available.
pH	11 – 12 when wet
Melting point/freezing point	Not applicable.
Initial boiling point and boiling range	Not applicable.

Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Non combustible.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.

Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	2.7-3.1 @ 20°C
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not applicable.

Auto-ignition temperature	Not applicable.
Decomposition temperature	2460 °F (1350 °C)
Viscosity	Not applicable.

Other information

Bulk density	60 lb/ft³
Partition coefficient (oil/water)	Not applicable.
VOC (Weight %)	0 g/l when mixed with water

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Incompatible materials	Powerful oxidizers.
Hazardous decomposition products	Carbon oxides. Sulfur oxides. Silicium oxide.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. Inhalation of dusts may cause respiratory irritation. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. Prolonged contact with wet cement/mixture may cause burns.
Eye contact	Causes serious eye damage. Prolonged contact with wet cement/mixture may cause burns.
Ingestion	Swallowing may cause gastrointestinal irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Upper respiratory tract irritation. Coughing. Discomfort in the chest. Shortness of breath. Wheezing. Skin irritation.

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	No data available.
Skin sensitization	No data available.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	<p>May cause cancer.</p> <p>In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.</p>

IARC Monographs. Overall Evaluation of Carcinogenicity

Silica, quartz (CAS 14808-60-7)

1 Carcinogenic to humans.

NTP Report on Carcinogens

Silica, quartz (CAS 14808-60-7)

Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	May damage fertility or the unborn child.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	May cause damage to organs (Lungs) through prolonged or repeated exposure.
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Chronic effects	Prolonged or repeated exposure may cause lung injury, including silicosis. May cause skin disorders if contact is repeated or prolonged.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable.

15. Regulatory information

US federal regulations	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.
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TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986

(SARA) Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Chemical name	CAS number	Reportable quantity	Threshold planning quantity	Threshold planning quantity, lower value	Threshold planning quantity, upper value
Methanal	50-00-0	100	500 lbs		

SARA 311/312 Hazardous chemical Yes**SARA 313 (TRI reporting)**

Chemical name	CAS number	% by wt.
Methanal	50-00-0	<=0.02

Other federal regulations**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations

WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Silica, quartz (CAS 14808-60-7)

US. New Jersey Worker and Community Right-to-Know Act

Silica, quartz (CAS 14808-60-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Silica, quartz (CAS 14808-60-7)

Methanal (CAS 50-00-0)

US. Rhode Island RTK

Not regulated

US. California Proposition 65**US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance**

Silica, quartz (CAS 14808-60-7)

Methanal (CAS 50-00-0)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

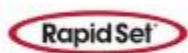
Issue date 07-October-2014

Revision date -

Version # 01

HMIS® ratings Health: 3*
Flammability: 0
Physical hazard: 0

Disclaimer CTS Cement Manufacturing Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.



SAFETY DATA SHEET

1. Identification

Product identifier	Rapid Set Mortar Mix
Other means of identification	
Product code	140010055, 140012000, 140013000, 140020025, 140040050, 140040055, 141010055
Recommended use	Industrial use.
Recommended restrictions	Workers (and your customers or users in the case of resale) should be informed of the potential presence of respirable dust and respirable crystalline silica as well as their potential hazards. Appropriate training in the proper use and handling of this material should be provided as required under applicable regulations.

Manufacturer/Importer/Supplier/Distributor information

Company name	CTS Cement Manufacturing Corporation
Address	11065 Knott Ave Suite A Cypress, CA 90630 United States
Telephone	1-800-929-3030
E-mail	info@ctscement.com
Contact person	Safety Officer
Emergency telephone number	1-800-929-3030 (8 AM - 5 PM)

2. Hazard(s) identification

Physical hazards	Not classified.	
Health Hazards	Skin corrosion/irritation	Category 2
	Serious eye damage/eye irritation	Category 1
	Carcinogenicity	Category 1A
	Specific Target Organ Toxicity, Single Exposure	Category 3 respiratory tract irritation
	Specific Target Organ Toxicity, Repeated Exposure	Category 2 (Lungs)
OSHA defined hazards	Not classified.	

Label elements



Signal word	Danger
Hazard statement	Causes skin irritation. Causes serious eye damage. May cause cancer. May cause respiratory irritation. May cause damage to organs (Lungs) through prolonged or repeated exposure.
Precautionary statement	
Prevention	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Do not breathe dust. Wash thoroughly after handling. Use in a well-ventilated area. Wear protective gloves/protective clothing/eye protection/face protection.
Response	If exposed or concerned: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If on skin: Wash with plenty of water. If skin irritation occurs: Get medical advice/attention. Take off contaminated clothing and wash before reuse. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.
Storage	Store in dry location. Store away from incompatible materials.

Disposal
Hazard(s) not otherwise classified (HNOC)

Dispose of contents/container in accordance with local/regional/national/international regulations.
None known.

3. Composition/information on ingredients

Mixtures

Chemical name	CAS number	%
Calcium Sulfoaluminate Cement	960375-09-1	20-40
Silica Sand, quartz	14808-60-7	60-80

Composition comments

All concentrations are in percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Inhalation

If dust from the material is inhaled, remove the affected person immediately to fresh air. Call a physician if symptoms develop or persist.

Skin contact

Remove contaminated clothing. Wash with plenty of soap and water. If skin irritation occurs: Get medical advice/attention. Wash contaminated clothing before reuse.

Eye contact

Do not rub eyes. Immediately flush eyes with plenty of water for at least 15 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Get medical attention immediately.

Ingestion

Immediately rinse mouth and drink plenty of water. Call an ambulance and take these instructions. Get medical attention if symptoms occur.

Most important symptoms/effects, acute and delayed

Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Upper respiratory tract irritation. Coughing. Discomfort in the chest. Shortness of breath. Wheezing. Skin irritation.

Indication of immediate medical attention and special treatment needed

Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.

General information

If you feel unwell, seek medical advice (show the label where possible). Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves. Show this safety data sheet to the doctor in attendance.

5. Fire-fighting measures

Suitable extinguishing media

Water fog. Foam. Dry chemical powder. Carbon dioxide (CO₂).

Unsuitable extinguishing media

Do not use water jet as an extinguisher, as this will spread the fire.

Specific hazards arising from the chemical

During fire, gases hazardous to health may be formed.

Special protective equipment and precautions for firefighters

Self-contained breathing apparatus and full protective clothing must be worn in case of fire.

Fire fighting equipment/instructions

Move containers from fire area if you can do so without risk.

Specific methods

Use standard firefighting procedures and consider the hazards of other involved materials.

General fire hazards

No unusual fire or explosion hazards noted.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Keep unnecessary personnel away. Keep people away from and upwind of spill/leak. Wear appropriate protective equipment and clothing during clean-up. Do not breathe dust. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Ensure adequate ventilation. Local authorities should be advised if significant spillages cannot be contained. For personal protection, see section 8 of the SDS.

Methods and materials for containment and cleaning up

Stop the flow of material, if this is without risk. If sweeping of a contaminated area is necessary use a dust suppressant agent which does not react with the product. Collect dust using a vacuum cleaner. Minimize dust generation and accumulation. Prevent entry into waterways, sewer, basements or confined areas. Following product recovery, flush area with water. For waste disposal, see section 13 of the SDS.

Environmental precautions

Avoid discharge into drains or water courses.

7. Handling and storage

Precautions for safe handling

Provide appropriate exhaust ventilation at places where dust is formed. Minimize dust generation and accumulation. Do not breathe dust. Do not get this material in contact with eyes. Avoid prolonged exposure. Wear appropriate personal protective equipment. Observe good industrial hygiene practices.

Conditions for safe storage, including any incompatibilities

Store in original tightly closed container. Store in dry location. Store away from incompatible materials (see Section 10 of the SDS).

8. Exposure controls/personal protection

Occupational exposure limits

US. OSHA Table Z-3 (29 CFR 1910.1000)

Components	Type	Value	Form
Silica, quartz (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Silica, quartz (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

US. NIOSH: Pocket Guide to Chemical Hazards

Components	Type	Value	Form
Silica, quartz (CAS 14808-60-7)	TWA	0.05 mg/m3	Respirable dust.

Biological limit values

No biological exposure limits noted for the ingredient(s).

Exposure guidelines

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.

Appropriate engineering controls

Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level. Ventilation should be sufficient to effectively remove and prevent buildup of any dusts or fumes that may be generated during handling or thermal processing. If engineering measures are not sufficient to maintain concentrations of dust particulates below the Occupational Exposure Limit (OEL), suitable respiratory protection must be worn. Eye wash facilities and emergency shower must be available when handling this product.

Individual protection measures, such as personal protective equipment

Eye/face protection	Wear safety glasses or safety goggles unless full face respirator is in use.
Skin protection	
Hand protection	Wear appropriate chemical resistant gloves.
Other	Wear appropriate chemical resistant clothing. Use of an impervious apron is recommended.
Respiratory protection	Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust/fume at levels exceeding the exposure limits.
Thermal hazards	Wear appropriate thermal protective clothing, when necessary.
General hygiene considerations	When using, do not eat, drink or smoke. Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Observe any medical surveillance requirements.

9. Physical and chemical properties**Appearance**

Physical state	Solid.
Form	Powder.
Color	Tan.
Odor	Low.
Odor threshold	Not available.
pH	11 – 12 when wet
Melting point/freezing point	Not applicable.
Initial boiling point and boiling range	Not applicable.
Flash point	Not applicable.
Evaporation rate	Not applicable.
Flammability (solid, gas)	Non combustible.

Upper/lower flammability or explosive limits

Flammability limit - lower (%)	Not applicable.
Flammability limit - upper (%)	Not applicable.
Vapor pressure	Not applicable.
Vapor density	Not applicable.
Relative density	2.7-3.1 @ 20°C
Solubility(ies)	
Solubility (water)	Not available.
Partition coefficient (n-octanol/water)	Not applicable.
Auto-ignition temperature	Not applicable.
Decomposition temperature	2460 °F (1350 °C)
Viscosity	Not applicable.
Other information	
Bulk density	60 lb/ft ³
Partition coefficient (oil/water)	Not applicable.

VOC (Weight %) 0 g/L when mixed with water

10. Stability and reactivity

Reactivity	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical stability	Material is stable under normal conditions.
Possibility of hazardous reactions	No dangerous reaction known under conditions of normal use.
Conditions to avoid	Avoid temperatures exceeding the decomposition temperature. Contact with incompatible materials. Avoid dispersal of dust in the air (i.e., clearing dust surfaces with compressed air).
Incompatible materials	Powerful oxidizers.
Hazardous decomposition products	Carbon oxides. Sulfur oxides. Silicium oxide.

11. Toxicological information

Information on likely routes of exposure

Inhalation	May cause damage to organs through prolonged or repeated exposure by inhalation. Inhalation of dusts may cause respiratory irritation. Prolonged inhalation may be harmful.
Skin contact	Causes skin irritation. Prolonged contact with wet cement/mixture may cause burns.
Eye contact	Causes serious eye damage. Prolonged contact with wet cement/mixture may cause burns.
Ingestion	Swallowing may cause gastrointestinal irritation.
Symptoms related to the physical, chemical and toxicological characteristics	Severe eye irritation. Symptoms may include stinging, tearing, redness, swelling, and blurred vision. Permanent eye damage including blindness could result. Upper respiratory tract irritation. Coughing. Discomfort in the chest. Shortness of breath. Wheezing. Skin irritation.

Information on toxicological effects

Acute toxicity	May cause respiratory irritation.
Skin corrosion/irritation	Causes skin irritation.
Serious eye damage/eye irritation	Causes serious eye damage.
Respiratory or skin sensitization	
Respiratory sensitization	No data available.
Skin sensitization	No data available.
Germ cell mutagenicity	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Carcinogenicity	May cause cancer. In 1997, IARC (the International Agency for Research on Cancer) concluded that crystalline silica inhaled from occupational sources can cause lung cancer in humans. However in making the overall evaluation, IARC noted that "carcinogenicity was not detected in all industrial circumstances studied. Carcinogenicity may be dependent on inherent characteristics of the crystalline silica or on external factors affecting its biological activity or distribution of its polymorphs." (IARC Monographs on the evaluation of the carcinogenic risks of chemicals to humans, Silica, silicates dust and organic fibres, 1997, Vol. 68, IARC, Lyon, France.) In June 2003, SCOEL (the EU Scientific Committee on Occupational Exposure Limits) concluded that the main effect in humans of the inhalation of respirable crystalline silica dust is silicosis. "There is sufficient information to conclude that the relative risk of lung cancer is increased in persons with silicosis (and, apparently, not in employees without silicosis exposed to silica dust in quarries and in the ceramic industry). Therefore, preventing the onset of silicosis will also reduce the cancer risk..." (SCOEL SUM Doc 94-final, June 2003) According to the current state of the art, worker protection against silicosis can be consistently assured by respecting the existing regulatory occupational exposure limits. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled.

IARC Monographs. Overall Evaluation of Carcinogenicity

Silica, quartz (CAS 14808-60-7)

1 Carcinogenic to humans.

NTP Report on Carcinogens

Silica, quartz (CAS 14808-60-7)

Known To Be Human Carcinogen.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

Reproductive toxicity	May damage fertility or the unborn child.
Specific target organ toxicity - single exposure	May cause respiratory irritation.
Specific target organ toxicity - repeated exposure	May cause damage to organs (Lungs) through prolonged or repeated exposure.
Aspiration hazard	Due to the physical form of the product it is not an aspiration hazard.
Chronic effects	Prolonged or repeated exposure may cause lung injury, including silicosis. May cause skin disorders if contact is repeated or prolonged.

12. Ecological information

Ecotoxicity	The product is not classified as environmentally hazardous. However, this does not exclude the possibility that large or frequent spills can have a harmful or damaging effect on the environment.
Persistence and degradability	No data is available on the degradability of this product.
Bioaccumulative potential	No data available.
Mobility in soil	No data available.
Other adverse effects	No other adverse environmental effects (e.g. ozone depletion, photochemical ozone creation potential, endocrine disruption, global warming potential) are expected from this component.

13. Disposal considerations

Disposal instructions	Collect and reclaim or dispose in sealed containers at licensed waste disposal site. Dispose of contents/container in accordance with local/regional/national/international regulations.
Local disposal regulations	Dispose in accordance with all applicable regulations.
Hazardous waste code	The waste code should be assigned in discussion between the user, the producer and the waste disposal company.
Waste from residues / unused products	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner (see: Disposal instructions).
Contaminated packaging	Empty containers should be taken to an approved waste handling site for recycling or disposal. Since emptied containers may retain product residue, follow label warnings even after container is emptied.

14. Transport information

DOT

Not regulated as dangerous goods.

IATA

Not regulated as dangerous goods.

IMDG

Not regulated as dangerous goods.

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code Not applicable.

15. Regulatory information

US federal regulations This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

Not regulated.

OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

Not listed.

CERCLA Hazardous Substance List (40 CFR 302.4)

Not listed.

Superfund Amendments and Reauthorization Act of 1986

(SARA) Hazard categories Immediate Hazard - Yes
Delayed Hazard - Yes
Fire Hazard - No
Pressure Hazard - No
Reactivity Hazard - No

SARA 302 Extremely hazardous substance

Not listed.

SARA 311/312 Hazardous chemical Yes

SARA 313 (TRI reporting)

Not regulated.

Other federal regulations

Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List

Not regulated.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130)

Not regulated.

Safe Drinking Water Act (SDWA) Not regulated.

US state regulations WARNING: This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

US. Massachusetts RTK - Substance List

Silica, quartz (CAS 14808-60-7)

US. New Jersey Worker and Community Right-to-Know Act

Silica, quartz (CAS 14808-60-7)

US. Pennsylvania Worker and Community Right-to-Know Law

Silica, quartz (CAS 14808-60-7)

US. Rhode Island RTK

Not regulated.

US. California Proposition 65

US - California Proposition 65 - Carcinogens & Reproductive Toxicity (CRT): Listed substance

Silica, quartz (CAS 14808-60-7)

International Inventories

Country(s) or region	Inventory name	On inventory (yes/no)*
United States & Puerto Rico	Toxic Substances Control Act (TSCA) Inventory	Yes

*A "Yes" indicates this product complies with the inventory requirements administered by the governing country(s).

A "No" indicates that one or more components of the product are not listed or exempt from listing on the inventory administered by the governing country(s).

16. Other information, including date of preparation or last revision

Issue date 24-March-2015

Revision date -

Version # 03

HMIS® ratings Health: 3*
Flammability: 0
Physical hazard: 0

Disclaimer CTS Cement Manufacturing Corporation cannot anticipate all conditions under which this information and its product, or the products of other manufacturers in combination with its product, may be used. It is the user's responsibility to ensure safe conditions for handling, storage and disposal of the product, and to assume liability for loss, injury, damage or expense due to improper use. The information in the sheet was written based on the best knowledge and experience currently available.

Ready Mix Concrete

1. Identification

Product name:

Ready Mix Concrete

Other means of identification/Synonyms/Common Names:

Freshly Mixed Unhardened Concrete

Recommended use:

Ready Mix Concrete is used as a construction material.

Recommended restrictions:

None Known

Manufacturer/Contact info:

Vulcan Materials Company and its subsidiaries and affiliates
1200 Urban Center Drive
Birmingham, AL 35242

General Phone Number:

1.866.401.5424

Emergency Phone Number:

1.866.401.5424 (3E Company, 24hours/day, 7 Days/week)

Website:

www.vulcanmaterials.com

2. Hazard(s) Identification

Physical hazards:

Not Classified

Signal word:

Danger

Health hazards:

Skin corrosion/irritation-Category 1B

Serious eye damage/eye irritation-Category 1

Carcinogenicity-Category 1A

Specific target organ toxicity, single exposure- Category 3

Specific target organ toxicity, repeated exposure- Category 2



Hazard Statement:

Causes severe skin burns and eye damage

Causes serious eye damage

May cause cancer (Inhalation)

May cause respiratory irritation

May cause damage to organs (lung/respiratory system) through prolonged or repeated exposure (inhalation)

Precautionary statement:

Prevention

- Obtain special instructions before use. Do not handle until all safety precautions have been read and understood.
- Do not breathe dust, fume, or vapors. Use only outdoors or in a well ventilated area.
- Wash hands thoroughly after handling
- Use personal protective equipment as required. Wear protective gloves, protective clothing, eye protection, and face protection.

Response

- If exposed or concerned: Immediately call a Poison Center or doctor/physician. Get medical advice/attention
- Specific treatment (see the following information on this label)
- IF SWALLOWED: Rinse mouth Do NOT induce vomiting.
- IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse cautiously with water for several minutes. Rinse skin with water/shower. If skin irritation occurs: Get medical advice/attention.
- IF INHALED: Remove victim to fresh air and keep at rest position comfortable for breathing.
- IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
- Wash contaminated clothing before reuse.

Disposal

- Dispose of contents/container in accordance with all local, regional, national, and international regulations.

Supplemental information:

Ready mix concrete contains a naturally occurring mineral complex with varying quantities of quartz (crystalline silica). Respirable Crystalline Silica (RCS) may cause cancer. Hardened ready mix concrete may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC, NTP; ACGIH states that it is a suspected cause of cancer.

3. Composition/information on ingredients

Chemical name	CAS number	%
Aggregate (crushed stone, sand, gravel, expanded shale) Quartz (crystalline silica)	Mixture 14808-60-7	60-95 >1
Hydraulic Cement(s) Portland and/or Slag Cement	Mixture 65997-15-1	3-20
Pozzolan Artificial Fly Ash Natural Metakaolin and/or Silica Fume	Mixture 38131-74-8 1332-58-7 69012-64-2	0-11
Water	7732-18-5	6-13

4. First-aid measures

Inhalation:

Dusts from hardened product may irritate the mouth, nose, throat and lungs. Remove person to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops.

Eyes:

Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from eye(s). Contact a physician if irritation persists or later develops.

Skin:

Wash affected areas thoroughly with mild soap and fresh water. Contact a physician if irritation persists.

Ingestion:

If person is conscious do not induce vomiting. Give large quantity of water and get medical attention. Never attempt to make an unconscious person drink.

Most important symptoms/effects, acute and delayed:

Contact with wet product may result in chemical (caustic) burns and eye injury which may be progressive and could cause blindness. Wet product may result in chemical burns to the skin.

Dust may irritate the skin and respiratory tract. Breathing silica-containing dust for prolonged periods in the workplace can cause lung damage and a lung disease called silicosis. Symptoms of silicosis may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure.

Indication of immediate medical attention and special treatment needed:

Not all individuals with silicosis will exhibit symptoms of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposures have ceased. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

For emergencies contact 3E Company at 1.866.401.5424 (24 hours/day, 7 days/week).

5. Fire-fighting measures

Suitable extinguishing media:

This product is not flammable. Use fire-extinguishing media appropriate for surrounding materials.

Unsuitable extinguishing media:

None known.

Specific hazards arising from the chemical:

Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS).

Special protective equipment and precautions for firefighters:

Use protective equipment appropriate for surrounding materials.

Fire-fighting equipment/instructions:

No unusual fire or explosion hazards noted. Not a combustible dust.

Specific methods:

The presence of this material in a fire does not hinder the use of any standard extinguishing medium. Use extinguishing medium for surrounding fire.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:

Persons involved in cleanup processes should first observe precautions (as appropriate) identified in Section 8 of this SDS. **For emergencies, contact 3E Company at 1-866-401-5424 (24 hours/day, 7 days/week).**

Environmental precautions:

Prevent from entering into sewers or drainage systems where it can harden and clog flow.

Methods and materials for containment and cleaning up:

Wet product should be removed from roads or other surfaces where it may interfere with traffic. If hardened material is spilled and dust is generated, cleanup personnel may be exposed to respirable crystalline silica. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary.

7. Handling and storage

Precautions for safe handling:

Respirable crystalline silica-containing dust may be generated during processing, handling, and storage. Use personal protection and controls identified in Section 8 of this MSDS as appropriate.

Conditions for safe storage, including any incompatibilities:

Do not store near food, beverages, or smoking materials.

8. Exposure controls/personal protection

Legend:

NE = Not Established; PEL = Permissible Exposure Limit; TLV = Threshold Limit Value; REL = Recommended Exposure Limit; OSHA = Occupational Safety and Health Administration; MSHA = Mine Safety and Health Administration; NIOSH = National Institute for Occupational Safety and Health; ACGIH = American Conference of Governmental Industrial Hygienists

Component	OSHA/MSHA PEL	ACGIH TLV	NIOSH REL
Portland Cement	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)	10 mg/m ³ (respirable fraction)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
Respirable dust containing silica	10 mg/m ³ ÷ (%silica + 2)	Use Respirable Silica TLV	Use Respirable Silica TLV
Total dust containing silica	OSHA: 30 mg/m ³ ÷ (% silica + 2) MSHA: 30 mg/m ³ ÷ (% silica + 3)	NE	NE
Respirable Crystalline Silica (quartz)	NE - Use respirable dust PEL	0.025 mg/m ³	0.05 mg/m ³
Respirable Tridymite and Cristobalite (other forms of crystalline silica)	1/2 of OSHA and MSHA respirable dust PEL	0.025 mg/m ³	0.05 mg/m ³
Amorphous Silica	20 mppcf (80 mg/m ³ /percent silica)	NE	6 mg/m ³
Iron Oxide	10 mg/m ³	5 mg/m ³ (respirable fraction)	5 mg/m ³ (respirable fraction)
Magnesium Oxide	15 mg/m ³ (total dust)	10 mg/m ³ (inhalable fraction)	NE
Aluminum Oxide	15 mg/m ³ (total dust) 5 mg/m ³ (Respirable)	10 mg/m ³ (total dust)	15 mg/m ³ (total dust) 5 mg/m ³ (Respirable)
Manganese Oxide	5 mg/m ³ (as Mn)	0.2 mg/m ³ (as Mn)	1 mg/m ³
Particulates Not Otherwise Classified	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)	10 mg/m ³ (inhalable fraction) 3 mg/m ³ (respirable fraction)	NE

Exposure Guidelines:

Respirable dust and quartz levels should be monitored regularly to determine worker exposure levels. Exposure levels in excess of allowable exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee workstations.

Engineering Controls:

Ordinarily not required when working with wet product. Activities that generate dust from hardened product require the use of general ventilation, local exhaust, and/or wet suppression methods adequate to maintain exposures below appropriate exposure limits.

Eye Protection:

Safety glasses with side shields should be worn as minimum protection. Goggles or face shield should be worn where splashing is possible. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated due to working with hardened product.

Skin Protection (Protective Gloves/Clothing):

Waterproof gloves, rubber boots, and clothing sufficient to protect skin from contact with wet product should be worn. Clothing saturated from contact with wet product should be removed promptly to prevent continued contact with skin. As a precaution, wash hands thoroughly before eating, smoking, and using toilet facilities. After working with product, workers should clean their skin with soap and water. Clean clothing should be worn after showering.

Respiratory Protection:

Ordinarily not required when working with wet product. Activities that generate dust from hardened dry product require the use of a NIOSH approved dust respirator for the exposure circumstances involved (See NIOSH Respirator

Selection Guide). The need for respiratory protection should be evaluated by a qualified safety and health professional. Activities that generate dust require the use of an appropriate dust respirator where dust levels exceed or are likely to exceed allowable exposure limits. For respirable silica levels that exceed or are likely to exceed an 8 hr Time Weighted Average (TWA) of 0.5 mg/m³, a high efficiency particulate filter respirator must be worn at a minimum; however, if respirable silica levels exceed or are likely to exceed an 8 hr TWA of 5.0 mg/m³ a positive pressure, full face respirator or equivalent is required. Respirator use must comply with applicable MSHA (42 CFR 84) or OSHA (29 CFR 1910.134) standards, which include provisions for a user training program, respirator inspection, repair and cleaning, respirator fit testing, medical surveillance and other requirements.

9. Physical and chemical properties

Appearance:

Gray, plastic, flowable, granular mixture.

Odor: Faint, characteristic cement odor.	PH: Approximately 12	Decomposition temperature: Not applicable
Melting point/freezing point: Not applicable	Initial boiling point and boiling range: Not applicable	Flash point: Non-combustible
Evaporation rate: Not applicable	Flammability: Not applicable	Upper/lower flammability or explosive limits: Not applicable
Vapor pressure: Not applicable	Relative density: Not applicable	Solubility: 0.1 - 1%
Partition coefficient: n-octanol/water. Not applicable	Autoignition temperature: Not applicable	Specific Gravity (H2O = 1): 1.7 - 3.0

10. Stability and reactivity

Reactivity:

Not reactive under normal use.

Chemical stability:

Stable under normal temperatures and pressures.

Possibility of hazardous reactions:

None under normal use.

Conditions to avoid (e.g., static discharge, shock or vibration):

Contact with incompatible materials should be avoided (see below). See Sections 5 and 7 for additional information.

Incompatible materials:

Fresh concrete is caustic (pH approximately 12) and could react with strong acids. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride..

Hazardous decomposition products:

Silica-containing respirable dust particles may be generated. When heated, quartz is slowly transformed into tridymite (above 860°C/1580°F) and cristobalite (above 1470°C/2678°F). Both tridymite and cristobalite are other forms of crystalline silica.

11. Toxicological information

Primary Routes of Exposure:

Inhalation and contact with the eyes and skin.

Symptoms related to the physical, chemical, toxicological characteristics

Inhalation:

Not expected to be a significant exposure route. Dusts from hardened product may irritate the mouth, nose, throat and lungs. Coughing, sneezing and shortness of breath may occur.

Symptoms of silicosis caused by chronic exposure to dust may include (but are not limited to) shortness of breath, difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Persons with silicosis have an increased risk of pulmonary

tuberculosis infection.
Eye Contact: Contact may result in chemical (caustic) burns and eye injury which may be progressive and could cause blindness. Symptoms may include tearing, redness, pain, swelling with blurred vision. Dusts from hardened product may be irritating.
Skin Contact: May cause severe skin irritation with redness, pain, an itching or burning feeling, and swelling of the skin. More severe effects, including chemical (alkali) burns and skin ulcers may occur. Dusts from hardened product may be irritating and cause dermatitis after prolonged or repeated exposure.
Ingestion: Direct contact with exposed tissues may result in severe irritation with pain, nausea, vomiting, and/or diarrhea and possibly chemical (alkali) burns.
Medical Conditions Aggravated by Exposure: Irritated or broken skin increases chance of contact dermatitis. Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). Smoking tobacco will impair the ability of the lungs to clear themselves of dust.
Delayed and immediate effects and also chronic effects from short- and long-term exposure: Hydraulic (Portland) cement may contain trace amounts of hexavalent chromium. Hexavalent chromium has been associated in some individuals with causing allergic reactions which may be manifested as contact dermatitis and skin ulcerations. Individuals who develop allergies to skin sensitizers such as hexavalent chromium, may experience a reaction upon repeated contact with those compounds. Irritated or broken skin is more likely to develop further complications such as ulcers and infection. Dermatitis and allergic reactions have been observed in workers with chronic exposure to fly ash. This was attributed to trace amounts of chromium, cobalt, nickel and other metals in the fly ash.
<p><u>The following information pertains to creating dust from hardened dry material:</u></p> Prolonged overexposure to respirable dusts in excess of allowable exposure limits can cause inflammation of the lungs leading to possible fibrotic changes, a medical condition known as pneumoconiosis. Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of allowable exposure limits may cause a chronic form of silicosis, an incurable lung disease that may result in permanent lung damage or death. Chronic silicosis generally occurs after 10 years or more of overexposure; a more accelerated type of silicosis may occur between 5 and 10 years of higher levels of exposure. In early stages of silicosis, not all individuals will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased. Repeated overexposures to very high levels of respirable crystalline silica for periods as short as six months may cause acute silicosis. Acute silicosis is a rapidly progressive, incurable lung disease that is typically fatal. Symptoms include (but are not limited to): shortness of breath, cough, fever, weight loss, and chest pain. Respirable dust containing newly broken silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken particles of silica. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.
Carcinogenicity: Epidemiology studies on the association between crystalline silica exposure and lung cancer have had both positive and negative results. There is some speculation that the source and type of crystalline silica may play a role. Studies of persons with silicosis indicate an increased risk of developing lung cancer, a risk that increases with the level and duration of exposure. It is not clear whether lung cancer develops in non-silicotic patients. Several studies of silicotics do not account for lung cancer confounders, especially smoking, which have been shown to increase the risk of developing lung disorders, including emphysema and lung cancer.

In October 1996, an IARC Working Group designated respirable crystalline silica as carcinogenic (Group 1). In 2012, an IARC Working Group re-affirmed that inhalation of crystalline silica was a known human carcinogen. The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In the year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

Additional information on toxicological-effects:

Acute toxicity: Not classified

Skin corrosion/irritation: Causes severe skin burns and eye damage

Serious eye damage/eye irritation: Causes serious eye damage.

Respiratory sensitization: Not classified.

Skin sensitization: Not classified.

Germ cell Mutagenicity: Not classified

Carcinogenicity: May cause cancer (Inhalation).

Reproductive toxicity: Not classified

Specific target organ toxicity - single exposure: May cause respiratory irritation

Specific target organ- toxicity – repeated exposure: May causes damage to organs (lungs, respiratory system) through prolonged or repeated exposure (inhalation)

Aspiration toxicity: Not classified (not applicable- solid material)

12. Ecological information

Ecotoxicity (aquatic and terrestrial, where available):

Not determined

Persistence and degradability:

Not determined

Bioaccumulative potential.

Not determined

Mobility in soil.

Not determined

Other adverse effects.

Not determined

13. Disposal considerations

Safe handling and disposal of waste:

Material can be retained until it hardens, and then disposed of as solid waste. Place contaminated materials in appropriate containers and dispose of in a manner consistent with applicable federal, state, and local regulations. Prevent from entering drainage, sewer systems, and unintended bodies of water. It is the responsibility of the user to determine, at the time of disposal, whether product meets criteria for hazardous waste. Product uses, transformations, mixture and processes, may render the resulting material hazardous.

14. Transport information
UN Number: Not regulated.
UN Proper shipping name: Not regulated.
Transport Hazard class: Not applicable.
Packing group, if applicable: Not applicable.
Marine pollutant (Yes/No): Not applicable.

15. Regulatory information
Toxic Substances Control Act (TSCA): The components in this product are listed on the TSCA Inventory or are exempt.
Comprehensive Environmental Response, Compensation and Liability Act (CERCLA): Releases of this material to air, land, or water are not reportable to the National Response Center under the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) or to state and local emergency planning committees under the Superfund Amendments and Reauthorization Act.
Superfund Amendments and Reauthorization Act of 1986 (SARA), Title III: Section 302 extremely hazardous substances: None Section 311/312 hazard categories: Delayed Health Section 313 reportable ingredients at or above de minimus concentrations: None
California Proposition 65: This product contains a chemical (crystalline silica, chromium, cobalt, nickel) known to the State of California to cause cancer.
State Regulatory Lists: Each state may promulgate standards more stringent than the federal government. This section cannot encompass an inclusive list or all state regulations. Therefore, the user should review the components listed in Section 2 and consult state or local authorities for specific regulations that apply.

16. Other information
<u>Disclaimer</u>
NO WARRANTY IS MADE, EXPRESS OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE.
Vulcan Materials Company and its subsidiaries and affiliates ("Vulcan") believe the information contained herein is accurate; however, Vulcan makes no guarantees with respect to such accuracy and assumes no liability whatsoever in connection with the use of any information contained herein by any party. The provision of the information contained herein is not intended to be, and should not be construed as, legal advice or as ensuring compliance with any federal, state, or local laws, rules or regulations. Any party using any information contained herein should review all applicable laws, rules and regulations prior to use.
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Birmingham, AL 35242



Dear Customer/Contractor:

Please find attached a safety data sheet (SDS) for the product that you purchased from Vulcan Materials Company or one of its subsidiaries or affiliates ("Vulcan"). This is a revised SDS and replaces any previous versions of the material safety data sheet (MSDS) for this product. This SDS is provided to you as required by the Occupational Safety and Health Administration's (OSHA) Hazard Communication Standard (29 CFR 1910.1200), the Mine Safety and Health Administration's (MSHA) Hazard Communication Standard (30 CFR Part 47), and/or any applicable state Right-to-Know laws.

It is the responsibility of your company to communicate this information to your employees, customers, and contractors who may use or come in contact with this product. Further, if you distribute this product, Vulcan requests, and applicable laws may require, that you forward this SDS to your customers.

Please direct this information to the person responsible for safety and health compliance at your company. If you have questions about the SDS, please contact Vulcan at 1200 Urban Center Drive, Birmingham, AL 35242 or 1-866-401-5424.

If you need additional copies of this or any other Vulcan SDS or a Spanish language version, you can obtain them at www.vulcanmaterials.com or by calling 1-866-401-5424.

La MSDS puede obtenerse en www.vulcanmaterials.com o llamando al 1-866-401-5424.

Sincerely,


Cynthia Kirby
Director, Safety & Health



CEMENT & CONCRETE PRODUCTS™

G1: Ice Melting Products

SAFETY DATA SHEET

(Complies with OSHA 29 CFR 1910.1200)

SECTION I: PRODUCT IDENTIFICATION

The QUIKRETE® Companies
One Securities Centre
3490 Piedmont Road, Suite 1300
Atlanta, GA 30305

Emergency Telephone Number
(770) 216-9580
Information Telephone Number
(770) 216-9580

SDS G1
Revision: May-15

QUIKRETE® Product Name

Rock Salt
Halite Salt

Code

9002
9002-20, -21, -22

Product Use: Melting ice on roadways

SECTION II - HAZARD IDENTIFICATION

Hazard-determining components of labeling: Sodium Chloride

2.1 Classification of the substance or mixture

Skin Irritation – Category 2
Eye Irritation – Category 2B

2.2a Signal word Warning

2.2b Hazard Statements

Causes skin irritation
Causes eye irritation

2.2c Pictograms





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2.2d Precautionary statements

Do not handle until all safety precautions have been read and understood.

Wear impervious gloves, such as nitrile. Wear eye protection, and protective clothing.

Wash thoroughly after handling. Do not eat, drink or smoke when using this product.

If on skin (or hair): Immediately take off all contaminated clothing and wash before reuse. Rinse skin or hair with water.

If in eyes: Rinse cautiously with water for several minutes; remove contact lenses if easy to do; continue rinsing.

If inhaled: Remove person to fresh air and keep comfortable for breathing.

If swallowed: Rinse mouth; do NOT induce vomiting.

Immediately seek medical advice or attention if symptoms are significant or persist.

Dispose of contents and container in accordance with all regulations.

2.3 Additional Information

2.3a HNOC – Hazards not otherwise classified: Not applicable

2.3b Unknown Acute Toxicity: None

2.3C WHMIS Classification

Does not meet classification criteria.

2.3d Label Elements According To WHMIS**Hazard Symbols**

None

Signal Word

None

SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<u>Hazardous Components</u>	<u>CAS No.</u>	<u>% by Weight</u>
Sodium Chloride	7647-15-5	100

SECTION IV – FIRST AID MEASURES**4.1 Description of the first-aid measures****General information:**

After inhalation: Remove person to fresh air and keep comfortable for breathing.

After skin contact: If on skin (or hair): Immediately take off all contaminated clothing and wash before reuse. Rinse skin or hair with water.



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After eye contact: If in eyes: Rinse cautiously with water for several minutes; remove contact lenses if easy to do; continue rinsing.

After swallowing: If swallowed: Rinse mouth; do NOT induce vomiting. Never give anything by mouth to an unconscious person.

4.2 Most important symptoms/effects, acute and delayed

Inhalation: May cause respiratory tract irritation.

Eye Contact: May cause eye irritation

Ingestion: Harmful if large amounts are ingested. Ingestion of may cause discomfort and/or distress, nausea or vomiting.

4.3 Indication of immediate medical attention and special treatment needed:

Immediately seek medical advice or attention if symptoms are significant or persist.

SECTION V - FIRE FIGHTING MEASURES

5.1 Flammability of the Product: Non-flammable and non-combustible

5.2 Suitable extinguishing agents: Treat for surrounding material

5.3 Special hazards arising from the substance or mixture: None

5.3a Products of Combustion: None

5.3b Explosion Hazards in Presence of Various Substances: Non-explosive in presence of shocks

SECTION VI – ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures: Wear personal protective equipment (See section VIII). Keep unprotected persons away.

6.2 Methods and material for containment and cleaning up:

Do not allow to enter sewers/ surface or ground water. Dispose of unwanted materials and containers properly in accordance with all regulations.

SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE

7.1 Handling

Precautions for safe handling: Wear appropriate PPE (See section 8). Do not mix with other chemical products, except as indicated by the manufacturer. Do not get in eyes, on skin or clothing. Good housekeeping is important to prevent accumulation of dust.

7.2 Storage



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Requirements to be met by storerooms and receptacles: No special requirements.

Information about storage in one common storage facility: Not required.

Further information about storage conditions: Keep out of the reach of children. Keep container tightly closed and prevent exposure to humidity. Do not allow water to contact the product until time of use to preserve product utility.

SECTION VIII – EXPOSURE CONTROL MEASURES / PERSONAL PROTECTION

8.1 Components with limit values that require monitoring at the workplace:

Hazardous Components	CAS No.	PEL (OSHA) mg/M ³	TLV (ACGIH) mg/M ³
None			

8.2 Exposure Controls

Use ventilation adequate to keep exposures below recommended exposure limits.

8.3 General protective and hygienic measures

Keep away from foodstuffs, beverages and feed. Immediately remove all soiled and contaminated clothing. Wash hands before breaks and at the end of work. Avoid contact with the eyes and skin.

8.3a Personal protective equipment

Protection of hands:

Wear gloves of adequate length to offer appropriate skin protection from incidental contact. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact.

Eye protection:

Wear approved eye protection properly fitted dust- or splash-proof chemical safety glasses.

Respiratory protection:

No respiratory protection required under normal conditions of use.

SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

General Information

Appearance

Form: Granular Solid
Color: White to Yellow
Odor: None

pH-value at 20°C (68 °F):

7 (10%)

Boiling point/Boiling range:

Not applicable



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Flash point: Not applicable
 Auto igniting: Product is not self-igniting
 Vapor pressure at 21°C (70°F): Not available
 Density at 25°C (77 °F): 1.98 – 2.00

Solubility in / Miscibility with

Water: Soluble
 VOC content: 0 g/L VOC

SECTION X – STABILITY AND REACTIVITY

10.1 Reactivity

No dangerous reaction known under conditions of normal use.

10.2 Chemical stability

Stable under normal storage conditions. Keep in dry storage.

10.3 Possibility of hazardous reaction

No dangerous reaction known under conditions of normal use.

10.4 Thermal decomposition / conditions to be avoided

No decomposition if used according to specifications.

10.5 Incompatible materials

Bromine trifluoride, lithium

10.6 Hazardous Decomposition or By-products

SECTION XI – TOXICOLOGICAL INFORMATION

11.1 Exposure Routes: Ingestion.

11.2 Symptoms related to physical/chemical/toxicological characteristics:

Ingestion: Harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

11.3 Delayed, immediate and chronic effects of short-term and long-term exposure**Short Term**

LD50 3000 mg/kg (oral, rats)
 Skin Corrosion/Irritation: Not applicable
 Serious Eye Damage/Irritation: Not applicable
 Respiratory Sensitization: Not applicable
 Skin Sensitization: Not applicable
 Specific Target Organ Toxicity-Single Exposure: Not applicable
 Aspiration Hazard: Not Applicable
 Ingestion: Diarrhea, abdominal cramps, vomiting, impaired kidney function

Long Term



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Carcinogenicity: Not applicable
 Germ Cell Mutagenicity: Not applicable
 Reproductive Toxicity: Not applicable
 Specific Target Organ Toxicity- Repeated Exposure: Not applicable
 Synergistic/Antagonistic Effects: Not applicable

SECTION XII – ECOLOGICAL INFORMATION

12.1 Ecotoxicity

This material is not expected to be harmful to the ecology.

12.2 Persistence and degradability

Dissolved into water

12.3 Bioaccumulative potential:

Not expected to occur

12.4 Mobility in soil

This material is expected to have very high mobility in soil. It does not absorb to most soil types.

12.5 Other Adverse Effects

No further relevant information available.

SECTION XIII – DISPOSAL CONSIDERATIONS

13.1 Waste Disposal Method

The packaging and material may be land filled; however, material should be covered to minimize generation of airborne dust. This product is not classified as a hazardous waste under the authority of the RCRA (40CFR 261) or CERCLA (40CFR 117&302). Disposal must be made in accordance with local, state and federal regulations.

13.2 Other disposal considerations**Uncleaned packaging**

Recommendation: Disposal must be made in accordance with local, state and federal regulations.

Recommended cleansing agent: Water, if necessary with cleansing agents.

SECTION XIV – TRANSPORT INFORMATION

	DOT (U.S.)	TDG (Canada)
UN-Number	Not Regulated	Not Regulated
UN proper shipping name	Not Regulated	Not Regulated
Transport Hazard Class(es)	Not Regulated	Not Regulated
Packing Group (if applicable)	Not Regulated	Not Regulated



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14.1 Environmental hazards:

Not Available

14.2 Transport in bulk according to Annex II of Marpol 73/78 and the IBC Code

Not available

14.3 Special precautions for user

Do not handle until all safety precautions have been read and understood.

SECTION XV – OTHER REGULATORY INFORMATION

15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical**Canada**

WHMIS Classification: Considered to be a non-hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations and subject to the requirements of Health Canada's Workplace Hazardous Material Information (WHMIS). This document complies with the WHMIS requirements of the Hazardous Products Act (HPA) and the CPR.

15.2 US Federal Information**SARA 302/311/312/313 Components**

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302, 311, 312 or 313.

15.3 State Right to Know Laws**California Prop. 65 Components**

WARNING: This product does not contain chemicals known to the State of California to cause cancer and birth defects or other reproductive harm.

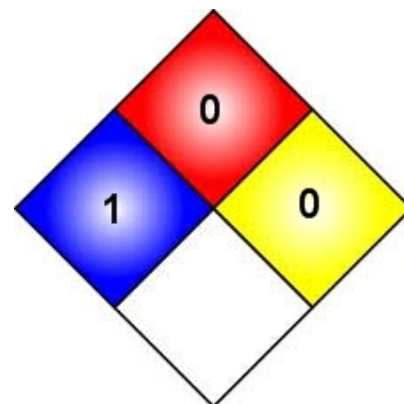
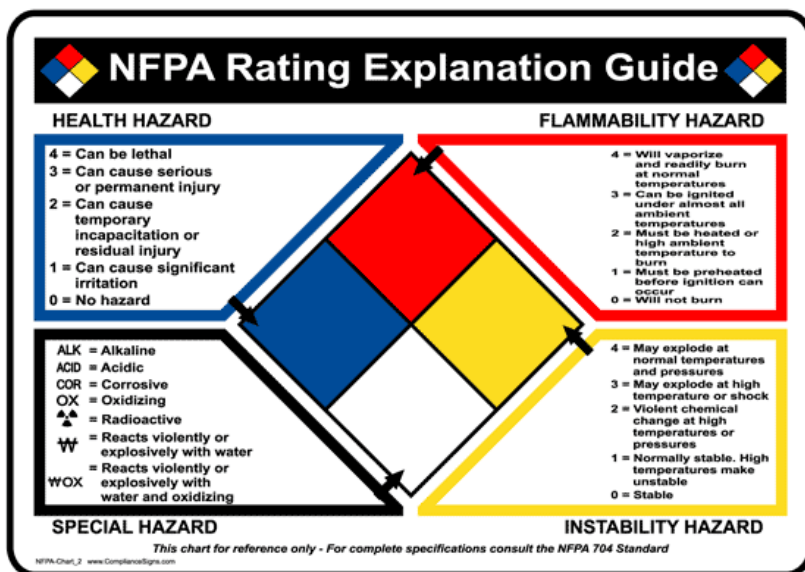
15.4 Global Inventories

DSL All components of this product are on the Canadian DSL list.

TSCA No.: All constituents are listed in the TSCA inventory.

15.5 NFPA Ratings

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SECTION XVI – OTHER INFORMATION

Last Updated: May 27, 2015

NOTE: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by

The QUIKRETE® Companies

Phone (800) 282-5828

www.QUIKRETE.com

End of SDS



MATERIAL SAFETY DATA SHEET THERMAFIBER® BONDED PRODUCTS

Thermafiber Inc.
3711 Mill Street
Wabash, Indiana 46992

Page 1 of 2
Phone (260) 563-2111
Version Date: April 1, 2013
MSDS NO. 00001, Version 4

SECTION I PRODUCT IDENTIFICATION

PRODUCT(S): THERMAFIBER® Bonded Products

®Trademark of Thermafiber Inc.

SYNONYM: Insulation

CHEMICAL FAMILY: Slag wool.

SECTION II INGREDIENTS

MATERIAL	WT%	ACGIH TLV (mg/m ³)	OSHA PEL (mg/m ³)	CAS NUMBER
Slag wool fiber ¹	>95	10(T)/3(R)	15(T)/5(R)	65997-17-3
Phenolic resin	<5	(NE)	(NE)	9003-35-4

If laminated, contains the following adhesive:

Vinyl alcohol polymer <1 (NE) (NE) 9002-89-5
(T) - Total (R) - Respirable (NE) - Not Established

¹OSHA and ACGIH recommended exposure level is 1 fiber/cc and NIOSH recommended exposure level is 3 fibers/cc. This material is slag wool. Other generic terms that are used or have been used to classify this material include mineral wool, stone wool, man-made mineral fiber (MMMF), and man-made vitreous fiber (MMVF). A more recent generic term that has appeared in the literature to describe these glass-like materials is synthetic vitreous fiber (SVF).

SECTION III HAZARD IDENTIFICATION

POTENTIAL HEALTH EFFECTS:

ACUTE: The products are composed of mineral wool in a bound matrix. When these are cut or trimmed, especially with power tools, the resulting dust may cause transitory mechanical irritation to skin, eyes or respiratory tract.

EYES: Direct contact with eye can cause mechanical irritation.

SKIN: This material (in wet state or as dust) is not chemically harmful if it gets on the skin and is not immediately washed off. However direct contact of dust and mineral wool fibers with skin can cause skin irritation (mechanical) and itchiness.

INHALATION: Inhalation of dust can cause nose, throat, lungs and upper respiratory tract irritation. Persons exposed to dust may be forced to leave area because of nuisance conditions such as coughing, sneezing and nasal irritation.

INGESTION: No known effects.

CHRONIC: Persons with chronic or systemic skin or eye disease should use precautions and wear all personal protective equipment when working with this product.

SECTION IV FIRST AID MEASURES

EYES: In case of contact, immediately flush thoroughly with copious amounts of water occasionally lifting the lower and upper lids (to remove particulates). Get medical attention immediately. Contact lenses should not be worn when working with this product.

SKIN: Skin contact is not a chemical hazard. Mechanical action of fibers on skin can cause itchiness. Irritation of skin may occur with prolonged and repeated contact. Rinse with cool water, followed by washing with soap and warm water. A commercially available skin cream or lotion may be helpful to treat dry skin areas. Wash hands before eating or using restroom.

INHALATION: If exposed to excessive levels of dust, leave area of dust exposure and remain away until coughing and other symptoms

subside. Other measures are usually not necessary, however if conditions warrant, get medical attention.

INGESTION: No harmful or chronic effects expected. No specific recommendation. If gastric disturbance occurs, call physician.

TARGET ORGANS: Eyes, skin, lungs and respiratory system.

MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED: Pre-existing upper respiratory and lung disease such as, but not limited to, bronchitis, emphysema and asthma.

PRIMARY ROUTES OF ENTRY: Inhalation, eyes and skin contact. Note to physician: This product is a mechanical irritant, and is not expected to produce any chronic health effects from acute exposures. Treatment should be directed toward removing the source of irritation with symptomatic treatment as necessary.

SECTION V FIRE FIGHTING MEASURES

The products are non-combustible and do not pose a fire hazard. However, packaging material may burn.

Extinguishing Media: Carbon dioxide (CO₂), water, water fog, foam, dry chemical

Special Fire Fighting Procedures: No special procedures are expected to be necessary for this product. Normal fire fighting procedures should be followed to avoid inhalation of smoke and gases.

Unusual Fire and Explosion Hazards: None.

Special Fire Fighting Protective Equipment: Observe normal fire fighting procedures.

Flash Point (Method Used): Not applicable.

Upper and lower flammable limits in air: Not applicable.

Autoignition temperature: Not applicable.

Hazardous Combustion Products: Carbon dioxide, carbon monoxide and trace gases.

SECTION VI ACCIDENTAL RELEASE MEASURES

CONTAINMENT: Not necessary. Treat as inert material.

CLEAN UP: Pick up large pieces. Use gloves to avoid skin irritation. Vacuum dust, preferably with an industrial vacuum cleaner with high efficiency air filter. If sweeping is necessary, use dust suppressant such as water. Do not dry sweep dust accumulation or use compressed air for clean up. These procedures will help minimize potential exposures.

DISPOSAL: Dispose in sanitary landfill in accordance with local, state and federal requirements.

SECTION VII HANDLING AND STORAGE

HANDLING: Use protective equipment to avoid irritation as described in Section 8.

STORAGE: Warehouse storage should be in accordance with manufacturer's recommendations. Material should be kept dry and protected from the elements.

SECTION VIII EXPOSURE CONTROL/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general ventilation and local exhaust ventilation to meet TLV requirements of individual ingredients (see Section 2) and to control dusting conditions. If cutting or trimming with power equipment, dust collectors and local ventilation should be used.

Avoid unnecessary exposure to dust and handle with care. Keep work area clean of dust and fibers by using an industrial vacuum cleaner with high efficiency filter or wetting down area with water. Never use compressed air and avoid dry sweeping.

EYE PROTECTION: Wear safety glasses with sideshields or goggles to avoid eye irritation.

RESPIRATORY PROTECTION: Wear a NIOSH/MSHA-approved dust respirator in poorly ventilated areas, where local exhaust is not feasible, if TLV is exceeded, and/or when dusty conditions exist. Avoid prolonged and repeated breathing of dust.

OTHER CLOTHING: Wear tight fitting goggles and gloves when dusty conditions exist. Wear long-sleeved, loose fitting clothing at the

neck and wrists and minimize skin contact. Wash work clothing separately from other clothing. Rinse washer thoroughly after use.

SECTION IX PHYSICAL AND CHEMICAL PROPERTIES

- **Appearance and Odor:** Tan or off yellow in color with low odor
- **Physical State:** Solid
- **Boiling Point:** Not applicable
- **Freezing Point:** Not applicable
- **Melting Point:** 2100° F (1150° C)
- **Specific Gravity (H₂O=1):** Not applicable
- **Solubility in Water:** Insoluble
- **pH Range:** Not applicable
- **Vapor Pressure:** Not applicable
- **Evaporation Rate (in-Butyl Acetate=1):** Not applicable
- **Percent Volatile:** Not applicable
- **Volatile Organic Compounds:** Not applicable

SECTION X CHEMICAL STABILITY

STABILITY: Stable

REACTIVITY: Not reactive

INCOMPATIBILITY: Acids (gives off H₂S under certain acidic conditions)

HAZARDOUS POLYMERIZATION: Will not occur

HAZARDOUS DECOMPOSITION: Oxides of carbon and smoke would be produced at high temperatures with thermal decomposition.

SECTION XI TOXICOLOGICAL INFORMATION

ACUTE DATA:

SLAG WOOL FIBER (65997-17-3)

Oral LD₅₀RAT: Not determined

Dermal LD₅₀RAT: Not determined

Skin Irritation: Mechanical Irritant

Eye Irritation: Mechanical Irritant

Contact with mineral wool fibers may cause temporary eye and skin irritation (mechanical). When products are handled continually, the skin irritation generally diminishes.

Chronic Data: Inhalation: In October 2001, the International Agency for Research on Cancer (IARC) classified mineral wool fibers (rock or slag) as Group 3 (not classifiable as to carcinogenicity to humans).

SECTION XII ECOLOGICAL INFORMATION

This product is not expected to have an adverse effect on the ecology.

SECTION XIII DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHOD: Dispose of material in accordance with federal, state, and local regulations. Wastes are not hazardous as defined by the Resource Conservation and Recovery Act (RCRA; 40 CFR 261).

WASTE NUMBERS: No EPA Waste Numbers are applicable for this product's components.

SECTION XIV TRANSPORT INFORMATION

U.S. DOT INFORMATION: Not a hazardous material per DOT shipping requirements. Not classified or regulated.

SECTION XV REGULATORY INFORMATION

CANADIAN REGULATIONS:

WHMIS: D2B

All components of this product are included in the Canadian Domestic Substances List (DSL) or the Canadian Non-Domestic Substances List (NDSL).

USA REGULATIONS:

All ingredients of this product are included in the U.S. Environmental Protection Agency's Toxic Substances Control Act Chemical Substance Inventory.

CARCINOGENICITY CLASSIFICATION OF INGREDIENTS:

Material	IARC	NTP
Man Made Vitreous	Group 3	None

In October 2001, the International Agency for Research on Cancer (IARC) classified mineral wool fibers (rock or slag) as **Group 3 (not classifiable as to carcinogenicity to humans)**. IARC noted specifically: "no evidence of increased risks of lung cancer or mesothelioma (cancer of the lining of the body cavities) from occupational exposures during manufacture of these materials, and inadequate evidence overall of any cancer risk." This was a reversal of the IARC finding in 1987 of a Group 2B designation (possibly carcinogenic to humans) based on earlier studies in which animals were injected with large quantities of slag wool fibers.

SECTION XVI OTHER INFORMATION

INFORMATION FOR HANDLING AND IDENTIFICATION OF CHEMICAL HAZARDS

NFPA Ratings: Health: 0 Fire: 0 Reactivity: 0 Other: N/A

HMIS Ratings: Health: 0 Fire: 0 Reactivity: 0

Personal Protection: Use eye and skin protection. Use NIOSH/MSHA - approved respiratory protection when necessary.

0 = Minimal Hazard 1 = Slight Hazard 2 = Moderate Hazard

3 = Serious Hazard 4 = Severe Hazard

Δ CAUTION:

Dust exposure can cause temporary eye, skin and respiratory tract irritation. Avoid creating dust and install in well ventilated area. Cut and trim with razor knife or hand saw to minimize dust levels. Using power tools for cutting will generate high dust levels. Power tools should be equipped with dust collection system. Use NIOSH/MSHA-approved dust respirator. Avoid dust contact with eyes and skin. Wear eye protection and long-sleeve, loose fitting clothing closed at the neck and wrists. Wash work clothing separately from other clothing. Rinse washer thoroughly.

KEEP OUT OF REACH OF CHILDREN THIS PRODUCT CONTAINS NO ASBESTOS

FIRST AID: For skin irritation, rinse skin with cool water, followed by washing with soap and warm water. For eye irritation, flush eyes thoroughly with water for 15 minutes. If irritation continues, or product is swallowed, consult a physician. Additional product safety information is available on the Thermafiber web site, www.thermafiber.com or by calling (260) 563-2111.

Key/Legend

ACGIH	American Conference of Government Industrial Hygienists
CAS	Chemical Abstracts Service (Registry Number)
DOT	United States Department of Transportation
EPA	United States Environmental Protection Agency
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety & Health
NTP	National Toxicology Program
OSHA	Occupational Health and Safety Administration
PEL	Permissible Exposure Limit
TLV	Threshold Limit Value

Safety Data Sheet Sand and Gravel

Section 1. Identification

GHS product identifier:	Sand and Gravel
Other means of identification:	Aggregate, Manufactured Sand, Natural Stone, Crushed Stone
Relevant identified uses of the substance or mixture and uses advised against:	Sand and Gravel aggregate may be used in the manufacture of bricks, mortar, cement, concrete, plasters, paving materials, and other construction materials. Sand and Gravel aggregate may be distributed in bags, totes, and bulk shipments. No known recommended restrictions.
Supplier's details:	300 E. John Carpenter Freeway, Suite 1645 Irving, TX 75062 (972) 653-5500
Emergency telephone number (24 hours):	CHEMTREC: (800) 424-9300

Section 2. Hazards Identification

GHS Classification:	CARCINOGENICITY – Category 1A SPECIFIC TARGET ORGAN TOXICITY – Category 2 REPEATED EXPOSURE SKIN CORROSION/IRRITATION – Category 2 EYE DAMAGE/IRRITATION – Category 2A
----------------------------	--

GHS label elements

Hazard pictograms:



Signal word:	Danger
Hazard statements:	May cause cancer May cause damage to organs (lung) through prolonged or repeated exposure Causes skin irritation Causes serious eye irritation

Precautionary statements:

Prevention:	Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wash any exposed body parts. Wear protective gloves/protective clothing/eye protection/face protection.
Response:	If exposed or concerned: Get medical advice/attention. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.
Storage:	Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains aggregates without an effective procedure for assuring safety.
Disposal:	Dispose of contents/container in accordance with local/regional/national/international regulations.
Hazards not otherwise classified (HNOC):	None known

Supplemental Information:

Respirable Crystalline Silica (RCS) may cause cancer. Sand and Gravel is a naturally occurring mineral complex that contains varying quantities of quartz (crystalline silica). In its natural bulk state, sand and gravel is not a known health hazard. Sand and Gravel may be subjected to various natural or mechanical forces that produce small particles (dust) which may contain respirable crystalline silica (particles less than 10 micrometers in aerodynamic diameter). Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes.

Section 3. Composition/information on ingredients

CAS number/other identifiers

Substance/mixture: Sand and Gravel

Ingredient name	%	CAS number
Sand and Gravel	> 99	None
Crystalline Silica (Quartz)	> 1	14808-60-7

Any concentration shown as a range is to protect confidentiality or is due to process variation. There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section. These materials are mined from the earth. Trace amounts of naturally occurring elements might be detected during chemical analysis of these materials.

Occupational exposure limits, if available, are listed in Section 8.

Section 4. First aid measures

Description of necessary first aid measures

Eye Contact:	Dust: Immediately flush with plenty of water for at least 15 minutes. Hold eyelids apart. Remove contacts if present and easy to do. Occasionally lift the eyelid(s) to ensure thorough rinsing. Beyond flushing, do not attempt to remove material from the eye(s). Get medical attention if irritation develops or persists.
Inhalation:	Dust: Move to fresh air. Call a physician if symptoms develop or persist.
Skin Contact:	Dust: Wash off with soap and water. Get medical attention if irritation develops and persists.
Ingestion:	Dust: Rinse mouth and drink plenty of water. Never give anything by mouth to an unconscious person. Get medical attention.

Most important symptoms/effects, acute and delayed

Inhaling dust may cause discomfort in the chest, shortness of breath, and coughing. Prolonged inhalation may cause chronic health effects. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica liberated from this product can cause silicosis, and may cause cancer.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to physician:	Provide general supportive measures and treat symptomatically. Keep victim under observation. Symptoms may be delayed.
Specific treatments:	Not Applicable
Protection of first-aiders:	Ensure that medical personnel are aware of the material(s) involved, and take precautions to protect themselves.
General information:	Pre-existing medical conditions that may be aggravated by exposure include disorders of the eye, skin and lung (including asthma and other breathing disorders). If addicted to tobacco, smoking will impair the ability of the lungs to clear themselves of dust.

See toxicological information (Section 11)

Section 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media:	Not flammable. Use fire-extinguishing media appropriate for surrounding materials.
Unsuitable extinguishing media:	None known.
Specific hazards arising from the chemical:	No unusual fire or explosion hazards noted. Not a combustible dust.
Hazardous thermal decomposition Products:	None known
Special protective equipment for fire-	

fighters:
General fire hazards:

Use protective equipment appropriate for surrounding materials. No specific precautions.
Contact with powerful oxidizing agents may cause fire and/or explosions (see section 10 of SDS). No unusual fire or explosion hazards.

Section 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Wear appropriate protective equipment and clothing during clean-up of materials that contain or may liberate dust.

Methods and materials for containment, cleaning up and Environmental precautions

Spilled material, where dust is generated, may overexpose cleanup personnel to respirable crystalline silica-containing dust. Do not dry sweep or use compressed air for clean-up. Wetting of spilled material and/or use of respiratory protective equipment may be necessary. Avoid discharge of fine particulate matter into drains or water courses.

Section 7. Handling and storage

Precautions for safe handling

Protective measures:

Do not handle until all safety precautions have been read and understood. Keep formation of airborne dusts to a minimum. Provide appropriate exhaust ventilation at places where dust is formed. Do not breathe dust. Avoid prolonged exposure. Provide adequate ventilation. Wear appropriate personal protective equipment.

Advice on general occupational hygiene:

Observe good industrial hygiene practices. Promptly remove dusty clothing and launder before reuse.

Conditions for safe storage, including any incompatibilities:

Avoid dust formation or accumulation.

Section 8. Exposure controls/personal protection

Control parameters

Occupational exposure limits:

- 1 – Value equivalent to OSHA formulas (29 CFR 1910.1000; 29 CFR 1917; 29 CFR 1918)
- 2 – Value also applies to MSHA metal/Non-Metal (1973 TLVs at 30 CFR 56/57.5001)
- 3 – OSHA enforces 0.250 mg/m³ in construction and shipyards (CPL-03-00-007)
- 4 – Value also applies to OSHA construction (29 CFR 1926.55 Appendix A) and shipyards (29 CFR 1915.1000 Table Z)
- 5 – MSHA limit = 10 mg/m³

Ingredient name	Exposure limits
Particulates not otherwise classified (CAS SEQ250)	ACGIH TLV (United States, 3/2012) TWA: 3 mg/m ³ . Form: Respirable particles (2) TWA: 10 mg/m ³ . Form: Inhalable particles (2) OSHA PEL (United States, 6/2010) PEL: 5 mg/m ³ . Form: Respirable fraction PEL: 15 mg/m ³ . Form: Total dust (4) TWA: 5 mg/m ³ . Form: Respirable fraction (1) TWA: 15 mg/m ³ . Form: Total dust (1, 4, 5)
Crystalline Silica (Quartz) (CAS 14808-60-7)	OSHA PEL (United States, 6/2010) TWA: 0.3 mg/m ³ . Form: Total dust (1,2) TWA: 0.1 mg/m ³ . Form: Respirable (1,2,3)
Crystalline Silica (all forms; CAS mixture)	ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m ³ . Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 0.05 mg/m ³ . Form: Respirable dust

Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

OSHA PEL (United States, 6/2010)

TWA: 0.15 mg/m³. Form: Total dust (1)

TWA: 0.05 mg/m³. Form: Respirable (1,2)

Appropriate engineering controls:

Good general ventilation (typically 10 air changes per hour indoors) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Exposure guidelines:

OSHA PELs, MSHA PELs, and ACGIH TLVs are 8-hr TWA values. NIOSH RELs are for TWA exposures up to 10-hr/day and 40-hr/wk. Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Terms including "Particulates Not Otherwise Classified," "Particulates Not Otherwise Regulated," "Particulates Not Otherwise Specified," and "Inert or Nuisance Due" are often used interchangeably; however, the user should review each agency's terminology for differences in meanings.

Biological limit values:

No biological exposure limits noted for the ingredient(s)

Individual protection measures

Hygiene measures:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

Eye/face protection:

Wear safety glasses with side shields (or goggles).

Hand protection:

Use personal protective equipment as required.

Body protection:

Use personal protective equipment as required.

Other skin protection:

Use personal protective equipment as required.

Respiratory protection:

When handling or performing work that produces dust or respirable crystalline silica in excess of applicable exposure limits, wear a NIOSH-approved respirator that is properly fitted and is in good condition. Respirators must be used in accordance with all applicable workplace regulations.

Thermal hazards:

Not anticipated. Wear appropriate thermal protective clothing if necessary.

Section 9. Physical and chemical properties

Appearance

Physical State:	Solid, particles of granular mixture	Lower and Upper explosive flammable limits	Not applicable
Color:	Various colors	Vapor pressure:	Not applicable
Odor:	Not applicable	Vapor density:	Not applicable
Odor threshold:	Not applicable	Relative density:	Not available
pH:	Not available	Solubility:	Not available
Melting point:	Not applicable	Solubility in water:	Insoluble
Boiling point:	Not applicable	Partition coefficient: n-octanol/water:	Not applicable
Flash point:	Non-combustible	Auto-ignition temperature:	Not applicable
Burning time:	Not applicable	Decomposition temperature:	Not applicable
Burning rate:	Not applicable	SADT:	Not available
Evaporation Rate:	Not applicable	Viscosity:	Not applicable
Flammability (solid, gas):	Not applicable		

Section 10. Stability and reactivity

Reactivity:	The product is stable and non-reactive under normal conditions of use, storage and transport.
Chemical Stability:	Material is stable under normal conditions
Possibility of hazardous reactions:	No dangerous reaction known under conditions of normal use.
Conditions to avoid:	Avoid contact with strong oxidizing agents.
Incompatible materials:	Crystalline silica may react violently with strong oxidizing agents, causing fire and explosions.

Hazardous decomposition products: Silica dissolves in hydrofluoric acid producing a corrosive gas-silicon tetrafluoride.

Section 11. Toxicological information

Information on toxicological effects

Acute toxicity:	Not expected to be acutely toxic.
Irritation/Corrosion:	<p>Skin: Dust: May cause irritation through mechanical abrasion. This product is not expected to be a skin hazard.</p> <p>Eyes: Direct contact with eyes may cause temporary irritation through mechanical abrasion.</p> <p>Inhalation: Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis, a fibrosis (scarring) of the lungs. Silicosis is irreversible and may be fatal. Silicosis increases the risk of contracting pulmonary tuberculosis. Some studies suggest that repeated inhalation of respirable crystalline silica may cause other adverse health effects including lung and kidney cancer.</p> <p>Ingestion: Not likely due to product form. However accidental ingestion may cause discomfort.</p> <p>Respiratory sensitization: No respiratory sensitizing effects known.</p> <p>Skin sensitization: Not known to be a dermal irritant or sensitizer.</p>
Sensitization:	No data available to indicate product or any components present at greater than 0.1% are mutagenic or genotoxic.
Mutagenicity:	Not expected to be an aspiration hazard.
Aspiration Hazard:	Not expected to be a reproductive hazard.
Reproductive toxicity:	
Symptoms related to physical, chemical and toxicological characteristics:	Dust: discomfort in the chest. Shortness of breath. Coughing.
Carcinogenicity:	Respirable crystalline silica has been classified by IARC and NTP as a known human carcinogen, and classified by ACGIH as a suspected human carcinogen.

Product/ingredient name	OSHA	IARC	ACGIH	NTP
Crystalline Silica (Quartz) CAS 14808-60-7)	Not listed	1 Carcinogenic to humans	A2	Known to be human Carcinogen
Respirable Tridymite and Cristobalite (Other forms of Crystalline) (CAS Mixture)	Not listed	1 Carcinogenic to humans	-	-

Specific target organ toxicity (acute exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)	-	Inhalation	Not reported to have effects
Respirable Tridymite and Cristobalite (Other forms of Crystalline) (CAS Mixture)	-	Inhalation	Not reported to have effects

Specific target organ toxicity (chronic exposure)

Name	Category	Route of Exposure	Target Organs
Crystalline Silica (Quartz) CAS 14808-60-7)		Inhalation	May cause damage to organs (lung through prolonged or repeated exposure.
Respirable Tridymite and Cristobalite (Other forms of Crystalline) (CAS Mixture)		Inhalation	May cause damage to organs (lung through prolonged or repeated exposure.

Potential chronic health effects: General: Prolonged inhalation of respirable crystalline silica may be harmful. May cause damage to organs (lungs) through prolonged or repeated exposure. There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with autoimmune disorders and other adverse health effects involving the kidney. In particular, the incidence of scleroderma (thickening of the skin caused by swelling and the thickening of fibrous tissue) appears to be higher in silicotic individuals. To date, the evidence does not conclusively determine a causal relationship between silica exposure and these adverse health effects.

Section 12. Ecological Information

Ecotoxicity

Not expected to be harmful to aquatic organisms. Discharging sand and gravel dust and fines into waters may increase total suspended particulate (TSP) levels that can be harmful to certain aquatic organisms.

Persistence and degradability:	Not applicable.
Bioaccumulative potential:	Not applicable.
Mobility in soil:	Not applicable.
Other adverse effects:	No other adverse environmental effects (e.g., ozone depletion, photochemical ozone creation potential, global warming potential) are expected from this component.

Section 13. Disposal considerations

Disposal methods:	Do not allow fine particulate matter to drain into sewers/water supplies. Do not contaminate ponds, waterways or ditches with fine particulates. Dispose of contents in accordance with local/regional/national/international regulations.
Hazardous waste code:	Not regulated.
Waste from residues/unused products:	Dispose of in accordance with local regulations. Empty containers or liners may retain some product residues. This material and its container must be disposed of in a safe manner.
Contaminated packaging:	Since emptied containers may retain product residue, follow label warnings even after container is emptied. Empty packaging materials should be recycled or disposed of in accordance with applicable regulations and practices.

Section 14. Transportation information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	-	-	-
Additional information	-	-	-

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Section 15. Regulatory Information

U.S. Federal regulations:	
OSHA Hazard Communication Standard, 29 CFR 1910.1200	This product is a "Hazardous Chemical" as defined by the OSHA Hazard Communication Standard, 29 CFR 1910.1200
TSCA Section 12(b) Export Notification (40 CFR 707, Subpart. D):	Not regulated
OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):	Not listed
CERCLA Hazardous Substance List (40 CFR 302.4):	Not listed
Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs):	Not regulated
Clean Air Act Section 112 (r) Accidental Release Prevention (40 CFR 68.130):	Not regulated

Safe Drinking Water Act (SDWA): Not regulated

SARA 311/312

Classification: Delayed (chronic) health hazard

Composition/information on ingredients

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Crystalline Silica (Quartz) CAS 14808-60-7	>1	No	No	No	No	Yes

SARA 313 (TRI)

	Product name	CAS number	%
Form R-Report requirements	Crystalline Silica (Quartz)	14808-60-7	Not regulated

State regulations

Massachusetts RTK:

The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

New Jersey RTK:

The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS mixture)

Pennsylvania RTK:

The following components are listed: Crystalline Silica (Quartz) (CAS 14808-60-7), Respirable Tridymite and Cristobalite (other forms of crystalline silica) (CAS Mixture)

Rhode Island RTK:

Not regulated.

California Prop. 65

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Crystalline Silica (Quartz) CAS 14808-60-7	Yes	No	No	No

International regulations

Ingredient name	CAS #	TSCA	Canada	WHMIS	EEC
Crystalline Silica (Quartz)	14808-60-7	Yes	DSL	D2A	EINECS

WHMIS Classification:

D2A "Materials Causing Other Toxic Effects"



Section 16. Other Information

Date of issue: 06/01/2015

Version: 06/01/2015

Revised Section(s): N/Ap

Notice to reader

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of sand and gravel as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be posed by other materials mixed with sand and gravel to produce sand and gravel products. Users should review other relevant material safety data sheets before working with this sand and gravel or working on sand and gravel products.

SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY Lehigh Hanson, except that the product shall conform to contracted specifications. The information provided herein was believed by the Lehigh Hanson to be accurate at the time of preparation or prepared from sources believed to be reliable, but it is the responsibility of the user to investigate and understand other pertinent sources of information to comply with all laws and procedures applicable to the safe handling and use of product and to determine the suitability of the product for its intended use. Buyer's exclusive remedy shall be for damages and no claim of any kind, whether as to product delivered or for non-delivery of product, and whether based on contract, breach of warranty, negligence, or otherwise shall be greater in amount than the purchase price of the quantity of product in respect of which damages are claimed. In no event shall Seller be liable for incidental or consequential damages, whether Buyer's claim is based on contract, breach of warranty, negligence or otherwise.

Abbreviations

ACGIH — American Conference of Governmental Industrial Hygienists
CAS — Chemical Abstract Service
CERCLA — Comprehensive Emergency Response and Comprehensive Liability Act
CFR — Code of Federal Regulations
DOT — Department of Transportation
GHS — Globally Harmonized System
HEPA — High Efficiency Particulate Air
IATA — International Air Transport Association
IARC — International Agency for Research on Cancer
IMDG — International Maritime Dangerous Goods
NIOSH — National Institute of Occupational Safety and Health
NOEC — No Observed Effect Concentration
NTP — National Toxicology Program
OSHA — Occupational Safety and Health Administration
PEL — Permissible Exposure Limit
REL — Recommended Exposure Limit
RQ — Reportable Quantity
SARA — Superfund Amendments and Reauthorization Act
SDS — Safety Data Sheet
TLV — Threshold Limit Value
TPQ — Threshold Planning Quantity
TSCA — Toxic Substances Control Act
TWA — Time-Weighted Average
UN — United Nations



Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gray); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Date of issue: 02/14/2014

Revision date: 02/14/2014

Version: 1.0

SECTION 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product identifier

Product form : Mixture
Product name : Sakrete Roof Tile Mortar
Sakrete Glass Block Mortar
Sakrete B-1 Trowel Grade Leveler
Sakrete Sand Mix
Sakrete Stoneworks Mix
Sakrete Stoneworks Stone Veener Mortar Dry Stack Gray
Sakrete Stoneworks Stone Veener Mortar Dry Stack Buff

1.2. Relevant identified uses of the substance or mixture and uses advised against

Use of the substance/mixture : Various.

1.3. Details of the supplier of the safety data sheet

Sakrete of North America
8201 Arrowridge Blvd.
28273 Charlotte, NC – USA
T 866-725-7383

1.4. Emergency telephone number

Emergency number : CHEMTREC (800) 424-9300
CHEMTREC International +1 (703) 527-3887 24 hr

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

GHS-US classification

Acute toxicity 4 (Oral)
Skin Irritation 2
Serious Eye Damage 1
Skin Sensitization 1
Carcinogenicity 1A
Specific Target Organ Toxicity After Single Exposure 3
Specific Target Organ Toxicity After Repeated Exposure 1

2.2. Label elements

GHS-US labelling

Hazard pictograms (GHS-US) :



Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : Harmful if swallowed. Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May cause respiratory irritation. Causes damage to lungs through prolonged or repeated exposure.

Precautionary statements (GHS-US) : Wash hands thoroughly after handling. Do not eat, drink or smoke when using this product. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear protective gloves/protective clothing/eye protection/face protection. Use only outdoors or in a well-ventilated area. Do not breathe dust. If swallowed: Immediately call a poison center/doctor. Rinse mouth. If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center/doctor. If exposed or concerned: Get medical advice/attention. Store in a well-ventilated place. Keep container tightly closed. Store locked up. Dispose of contents and container in accordance with all local, regional, national and international regulations.

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gris); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

2.3. Other hazards

Other hazards not contributing to the classification : Not applicable.

2.4. Unknown acute toxicity (GHS-US)

Sakrete B-1 Trowel Grade Leveler: 66 % of the mixture consists of ingredient(s) of unknown acute toxicity.

Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gray): 17 % of the mixture consists of ingredient(s) of unknown acute toxicity.

Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff): 16 % of the mixture consists of ingredient(s) of unknown acute toxicity.

Sakrete Roof Tile Mortar: 15 % of the mixture consists of ingredient(s) of unknown acute toxicity.

Sakrete Glass Block Mortar; Sakrete Sand Mix: 11 % of the mixture consists of ingredient(s) of unknown acute toxicity.

SECTION 3: Composition/information on ingredients

3.1. Substance

Not applicable

3.2. Mixture

Name	Product identifier	%	GHS-US classification
Quartz	(CAS No) 14808-60-7	20 - 80	Acute Tox. 4 (Oral) Carc. 1A STOT RE 1
Plaster of Paris	(CAS No) 26499-65-0	30 - 60 ²	Not classified
Cement, portland, chemicals	(CAS No) 65997-15-1	10 - 30	Skin Irrit. 2 Eye Dam. 1 Skin Sens. 1 STOT SE 3
Calcium magnesium hydroxide (CaMg(OH)4)	(CAS No) 39445-23-3	3 - 7 ¹	Skin Irrit. 2 Eye Dam. 1 STOT SE 3
Calcium magnesium hydroxide oxide (CaMg(OH)2O)	(CAS No) 58398-71-3	3 - 7 ¹	Skin Irrit. 2 Eye Dam. 1 STOT SE 3
Calcium oxide	(CAS No) 1305-78-8	1 - 5	Skin Irrit. 2 Eye Dam. 1 STOT SE 3
Calcium hydroxide	(CAS No) 1305-62-0	1 - 5 ¹	Eye Dam. 1 Skin Corr. 1B
Calcium sulfate	(CAS No) 7778-18-9	1 - 5	Not classified
Limestone	(CAS No) 1317-65-3	1 - 5	Not classified
Iron oxide (Fe2O3)	(CAS No) 1309-37-1	1 - 5 ³	Not classified
Magnesium oxide (MgO)	(CAS No) 1309-48-4	1 - 5 ³	Not classified
Magnesium hydroxide	(CAS No) 1309-42-8	1 - 5 ¹	Not classified

¹ Sakrete Glass Block Mortar

² Sakrete B-1 Trowel Grade Leveler

³ Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix

The exact percentage (concentration) of composition has been withheld as a trade secret in accordance with paragraph (i) of §1910.1200.

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures after inhalation	: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
First-aid measures after skin contact	: In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
First-aid measures after eye contact	: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.
First-aid measures after ingestion	: If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Immediately call a POISON CENTER or doctor/physician.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitisation by skin contact.
Symptoms/injuries after eye contact	: Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gris); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Symptoms/injuries after ingestion : Harmful if swallowed. May cause stomach distress, nausea or vomiting.

4.3. Indication of any immediate medical attention and special treatment needed

Symptoms may not appear immediately. In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Treat for surrounding material.

Unsuitable extinguishing media : Not available.

5.2. Special hazards arising from the substance or mixture

Fire hazard : Products of combustion may include, and are not limited to: oxides of carbon.

5.3. Advice for firefighters

Firefighting instructions : Keep upwind of fire. Wear full fire fighting turn-out gear (full Bunker gear) and respiratory protection (SCBA).

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

General measures : Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2. Methods and material for containment and cleaning up

For containment : Contain spill, then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for cleaning up : Vacuum or sweep material and place in a disposal container.

6.3. Reference to other sections

No additional information available.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Precautions for safe handling : Do not swallow. Avoid contact with skin and eyes. Good housekeeping is important to prevent accumulation of dust. Avoid generating and breathing dust. The use of compressed air for cleaning clothing, equipment, etc, is not recommended. Handle and open container with care. When using do not eat, drink or smoke.

Hygiene measures : Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2. Conditions for safe storage, including any incompatibilities

Storage conditions : Keep out of the reach of children. Store in dust-tight, dry, labelled containers. Keep container tightly closed when not in use. Avoid any dust buildup by frequent cleaning and suitable construction of the storage area. Do not store in an area equipped with emergency water sprinklers.

7.3. Specific end use(s)

No additional information available.

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

Quartz (14808-60-7)		
USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	(30)/((%SiO ₂ + 2) mg/m ³ TWA, total dust (250)/((%SiO ₂ + 5) mppcf TWA, respirable fraction (10)/((%SiO ₂ + 2) mg/m ³ TWA, respirable fraction
Cement, portland, chemicals (65997-15-1)		
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Calcium oxide (1305-78-8)		
USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Calcium hydroxide (1305-62-0)		
USA ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³

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according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Calcium hydroxide (1305-62-0)		
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Calcium sulfate (7778-18-9)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Limestone (1317-65-3)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
Iron oxide (Fe ₂ O ₃) (1309-37-1)		
USA ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	10 mg/m ³
Magnesium oxide (MgO) (1309-48-4)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³
Magnesium hydroxide (1309-42-8)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³
Plaster of Paris (26499-65-0)		
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (total); 5 mg/m ³ (respirable)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total); 5 mg/m ³ (respirable)

8.2. Exposure controls

Appropriate engineering controls	: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.
Hand protection	: Wear suitable waterproof gloves.
Eye protection	: Wear approved eye protection (properly fitted dust- or splash-proof chemical safety goggles) and face protection (face shield).
Skin and body protection	: Wear suitable waterproof protective clothing.
Respiratory protection	: A NIOSH approved dust mask or filtering facepiece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).
Other information	: Do not eat, smoke or drink where material is handled, processed or stored. Wash hands carefully before eating or smoking. Handle according to established industrial hygiene and safety practices.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Solid
Appearance	: Powder.
Colour	: Various.
Odour	: Characteristic.
Odour threshold	: No data available.
pH	: 12 – 13
Relative evaporation rate (butylacetate=1)	: No data available.
Melting point	: No data available.
Freezing point	: No data available.
Boiling point	: No data available.
Flash point	: No data available.
Self ignition temperature	: No data available.
Decomposition temperature	: No data available.
Flammability (solid, gas)	: Not flammable.

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Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Vapour pressure	: No data available.
Relative vapour density at 20 °C	: No data available.
Relative density	: No data available.
Solubility	: No data available.
Log Pow	: No data available.
Log Kow	: No data available.
Viscosity, kinematic	: No data available.
Viscosity, dynamic	: No data available.
Explosive properties	: No data available.
Oxidising properties	: No data available.
Explosive limits	: No data available.

9.2. Other information

VOC content : 0%, Not applicable; 0 wt, Not applicable.

SECTION 10: Stability and reactivity

10.1. Reactivity

No dangerous reaction known under conditions of normal use.

10.2. Chemical stability

Stable under normal storage conditions. Keep dry in storage.

10.3. Possibility of hazardous reactions

No dangerous reaction known under conditions of normal use.

10.4. Conditions to avoid

Incompatible materials. Moisture.

10.5. Incompatible materials

Wet cement is alkaline and incompatible with acid, ammonium salts and aluminum metal.

10.6. Hazardous decomposition products

May include, and are not limited to: oxides of carbon.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Harmful if swallowed.

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gray); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)	
LD50 oral rat	563 - 741 mg/kg
LD50 dermal rabbit	No data available.
LC50 inhalation rat (mg/l)	No data available.
Quartz (14808-60-7)	
LD50 oral rat	500 mg/kg
Calcium oxide (1305-78-8)	
LD50 oral rat	> 2000 mg/kg
Calcium hydroxide (1305-62-0)	
LD50 oral rat	7340 mg/kg
Calcium sulfate (7778-18-9)	
LD50 oral rat	> 3000 mg/kg
Limestone (1317-65-3)	
LD50 oral rat	6450 mg/kg
Iron oxide (Fe2O3) (1309-37-1)	
LD50 oral rat	> 10000 mg/kg
Magnesium oxide (MgO) (1309-48-4)	
LD50 oral rat	> 5000 mg/kg
Magnesium hydroxide (1309-42-8)	
LD50 oral rat	8500 mg/kg

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gris); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

Skin corrosion/irritation	: Causes skin irritation.
Serious eye damage/irritation	: Causes serious eye damage.
Respiratory or skin sensitisation	: May cause an allergic skin reaction.
Germ cell mutagenicity	: Based on available data, the classification criteria are not met.
Carcinogenicity	: May cause cancer.

Quartz (14808-60-7)	
IARC group	1
National Toxicity Program (NTP) Status	2

Iron oxide (Fe ₂ O ₃) (1309-37-1)	
IARC group	3
Reproductive toxicity	: Based on available data, the classification criteria are not met.
Specific target organ toxicity (single exposure)	: May cause respiratory irritation.
Specific target organ toxicity (repeated exposure)	: Causes damage to lungs through prolonged or repeated exposure. (Respirable crystalline silica in the form of quartz or cristobalite from occupational sources is listed by the International Agency for Research on Cancer (IARC) and National Toxicology Program (NTP) as a lung carcinogen. Prolonged exposure to respirable crystalline silica has been known to cause silicosis, a lung disease, which may be disabling. While there may be a factor of individual susceptibility to a given exposure to respirable silica dust, the risk of contracting silicosis and the severity of the disease is clearly related to the amount of dust exposure and the length of time (usually years) of exposure.)
Aspiration hazard	: Based on available data, the classification criteria are not met.
Symptoms/injuries after inhalation	: May cause respiratory tract irritation.
Symptoms/injuries after skin contact	: Causes skin irritation. May cause burns in the presence of moisture. Skin contact during hydration may slowly develop sufficient heat that may cause severe burns possibly resulting in permanent injury. Do not allow product to harden around any body part or allow continuous, prolonged contact with skin. Handling can cause dry skin. May cause sensitisation by skin contact.
Symptoms/injuries after eye contact	: Causes serious eye damage. May cause burns in the presence of moisture. Symptoms may include discomfort or pain, excess blinking and tear production, with possible redness and swelling.
Symptoms/injuries after ingestion	: Harmful if swallowed. May cause stomach distress, nausea or vomiting.
Other information	: Likely routes of exposure: ingestion, inhalation, skin and eye.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: No ecological consideration when used according to directions. Normal dilution of this product to drains, sewers, septic systems and treatment plants is not considered environmentally harmful.
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12.2. Persistence and degradability

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gray); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)	
Persistence and degradability	No data available.

12.3. Bioaccumulative potential

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gray); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)	
Bioaccumulative potential	No data available.

12.4. Mobility in soil

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gray); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)	
Ecology - soil	No data available.

12.5. Other adverse effects

Other adverse effects	: No data available.
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SECTION 13: Disposal considerations

13.1. Waste treatment methods

Waste disposal recommendations	: This material must be disposed of in accordance with all local, state, provincial, and federal regulations.
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Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gris); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)

Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SECTION 14: Transport information

In accordance with DOT

14.1. UN number

Not applicable

14.2. UN proper shipping name

Not applicable

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Do not handle until all safety precautions have been read and understood.

SECTION 15: Regulatory information

15.1. US Federal regulations

Quartz (14808-60-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Cement, portland, chemicals (65997-15-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium oxide (1305-78-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium magnesium hydroxide (CaMg(OH)₄) (39445-23-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium magnesium hydroxide oxide (CaMg(OH)₂O) (58398-71-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium hydroxide (1305-62-0)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Calcium sulfate (7778-18-9)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Limestone (1317-65-3)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Iron oxide (Fe₂O₃) (1309-37-1)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Magnesium oxide (MgO) (1309-48-4)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

Magnesium hydroxide (1309-42-8)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

15.2. US State regulations

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gray); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)

State or local regulations

This product contains Crystalline Silica, Quartz and may also contain other chemicals known to the State of California to cause cancer, birth defects or other reproductive harm.

Sakrete Roof Tile Mortar; Sakrete Glass Block Mortar; Sakrete B-1 Trowel Grade Leveler; Sakrete Sand Mix; Sakrete Stoneworks Mix; Sakrete Stoneworks Stone Veener Mortar Dry Stack (Gris); Sakrete Stoneworks Stone Veener Mortar Dry Stack (Buff)

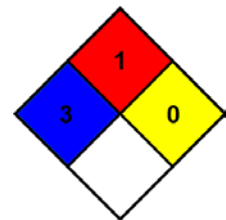
Safety Data Sheet

according to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012.

SOURCE AGENCY CARCINOGEN CLASSIFICATIONS:	
IARC (I)	International Agency for Research on Cancer.
	1 - Carcinogenic to humans; 2A - Probably carcinogenic to humans; 2B - Possibly carcinogenic to humans; 3 - Not classifiable; 4 - Probably not carcinogenic to humans.
NTP (N)	National Toxicology Program.
	1 - Evidence of Carcinogenicity; 2 - Known Human Carcinogens; 3 - Reasonably anticipated to be Human Carcinogen; 4 - Substances delisted from report on Carcinogens; 5 - Twelfth Report - Items under consideration.

SECTION 16: Other information

Indication of changes	:	None.
Other information	:	None.
NFPA health hazard	:	3 - Short exposure could cause serious temporary or residual injury even though prompt medical attention was given.
NFPA fire hazard	:	1 - Must be preheated before ignition can occur.
NFPA reactivity	:	0 - Normally stable, even under fire exposure conditions, and are not reactive with water.



This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product



SAFETY DATA SHEET

Issuing Date 13-Sept-2013

Revision Date 31-Mar-2015

Revision Number 2

1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND THE COMPANY/UNDERTAKING

GHS product identifier

Product Name SCRUBS® In-A-Bucket

Other means of identification

Product Code(s) 42201, 42230, 42256, 42272

Synonyms None

Recommended use of the chemical and restrictions on use

Recommended Use Heavy Duty Hand Cleaner

Uses advised against None reasonably foreseeable

Supplier's details

Supplier Address

ITW Pro Brands
805 E. Old 56 Highway
Olathe, KS 66061
TEL: 1-800-443-9536

Emergency telephone number

Emergency Telephone Number 800-535-5053 Infotrac

2. HAZARDS IDENTIFICATION

Classification

This chemical is not considered hazardous according to the OSHA Hazard Communication Standard 2012 (29 CFR 1910.1200).

GHS Label elements, including precautionary statements

Emergency Overview

Signal Word

None

The product contains no substances which at their given concentration are considered to be hazardous to health

Appearance Colorless-blue/white	Physical State Liquid.	Odor Citrus
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Precautionary Statements**Prevention**

- None

General Advice

- None

Storage

- None

Disposal

- None

Hazard Not Otherwise Classified (HNOC)

Not applicable

Other information

Toxic to aquatic life. Harmful to aquatic life with long lasting effects

3. COMPOSITION/INFORMATION ON INGREDIENTS

Chemical Name	CAS-No	Weight %	Trade secret
Alcohols, C12-15, ethoxylated	68131-39-5	1-5	*
Isoparaffinic Hydrocarbon	64742-47-8	1-5	*
Dimethyl adipate	627-93-0	1-5	*
Diethylhexyl sodium sulfosuccinate	577-11-7	1-5	*
D-Limonene	5989-27-5	1-5	*

**The exact percentage (concentration) of composition has been withheld as a trade secret.*

4. FIRST AID MEASURES**Description of necessary first-aid measures**

Eye Contact	Rinse thoroughly with plenty of water, also under the eyelids. If symptoms persist, call a physician.
Skin Contact	None normally required. Material is designed for skin cleansing. Get medical attention if irritation develops and/or persists.
Inhalation	Move to fresh air. If symptoms persist, call a physician.
Ingestion	Not an expected route of exposure. If large quantities of this material are swallowed, call a physician immediately.

Most important symptoms/effects, acute and delayed

Most Important Symptoms/Effects Not expected to give rise to an acute hazard under normal condition of use.

Indication of immediate medical attention and special treatment needed, if necessary

Notes to Physician Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media

Dry chemical. Carbon dioxide (CO₂). Foam. Water spray or fog.

Unsuitable Extinguishing Media None

Specific Hazards Arising from the Chemical

None in particular

Hazardous Combustion Products Carbon dioxide (CO₂). Carbon monoxide. Hydrocarbons. Hydrogen sulfide. Sulfur dioxide. Soot.

Explosion Data

Sensitivity to Mechanical Impact

None.

Sensitivity to Static Discharge

None.

Protective Equipment and Precautions for Firefighters

Use water spray to cool surrounding containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions Use personal protective equipment.

Environmental Precautions

Environmental Precautions Prevent entry into waterways, sewers, basements or confined areas. Avoid release to the environment. See Section 12 for additional Ecological Information. Dispose of contents/container to an approved waste disposal plant.

Methods and materials for containment and cleaning up

Methods for Containment Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up Small spillage: Wipe up with absorbent material (e.g. cloth, fleece). Large spillage: Use a non-combustible material like vermiculite, sand or earth to soak up the product and place into a container for later disposal.

7. HANDLING AND STORAGE

Precautions for safe handling

Handling Avoid contact with eyes. Do not smoke. Handle in accordance with good industrial hygiene and safety practice.

Conditions for safe storage, including any incompatibilities

Storage Keep container closed when not in use. Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Do not contaminate food or feed stuffs. Keep out of the reach of children.

Incompatible Products Strong oxidizing agents. Strong acids.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Control parameters

Exposure Guidelines This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.

Appropriate engineering controls

Engineering Measures Eyewash stations.

Individual protection measures, such as personal protective equipment

Eye/Face Protection No special protective equipment required.
Skin and Body Protection No special protective equipment required.
Respiratory Protection None required under normal usage. If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

Physical State	Liquid	Appearance	Colorless-blue/white
Odor	Citrus	Odor Threshold	No information available

<u>Property</u>	<u>Values</u>	<u>Remarks/ - Method</u>
pH	6	None known
Melting Point/Range	No data available	None known
Boiling Point/Boiling Range	212 °F	None known
Flash Point	No data available	None known
Evaporation rate	No data available	None known
Flammability (solid, gas)	No data available	None known
Flammability Limits in Air		
upper flammability limit	No data available	
lower flammability limit	No data available	
Vapor Pressure	No data available	None known
Vapor Density	>1	None known
Relative Density	No data available	None known
Specific Gravity	0.995	None known
Water Solubility	Miscible with water	None known
Solubility in other solvents	No data available	None known
Partition coefficient: n-octanol/water	No data available	None known
Autoignition Temperature	No data available	None known
Decomposition Temperature	No data available	None known
Viscosity	No data available	None known

Flammable Properties Not flammable

Explosive Properties No data available

Oxidizing Properties No data available

Other information

VOC Content (%) 0%

10. STABILITY AND REACTIVITY

Reactivity

Not reactive under normal conditions.

Chemical stability

Stable under recommended storage conditions.

Possibility of hazardous reactions

None under normal processing.

Conditions to avoid

Incompatible products.

Incompatible materials

Strong oxidizing agents. Strong acids.

Hazardous decomposition products

Carbon dioxide (CO₂). Carbon monoxide (CO). Hydrocarbons. Hydrogen sulfide. Sulfur dioxide. Soot.

11. TOXICOLOGICAL INFORMATION

Information on likely routes of exposure

Product Information

Inhalation	Not an expected route of exposure
Eye Contact	Contact with eyes may cause irritation.
Skin Contact	May cause mild skin irritation.
Ingestion	Not an expected route of exposure.

Symptoms related to the physical, chemical and toxicological characteristics

Symptoms No information available.

Delayed and immediate effects and also chronic effects from short and long term exposure

Sensitization	No information available.
Mutagenic Effects	No information available.
Carcinogenicity	Contains no ingredients above reportable quantities listed as a carcinogen.

Chemical Name	ACGIH	IARC	NTP	OSHA
D-Limonene		Group 3	-	-

IARC: (International Agency for Research on Cancer)

Group 3: Not Classifiable as to its Carcinogenicity to Humans

Reproductive Toxicity	This product does not contain any known or suspected reproductive hazards.
STOT - single exposure	None of the ingredients are known to cause specific target organ effects from a single exposure.
STOT - repeated exposure	None of the ingredients are known to cause specific target organ effects through prolonged or repeated exposure.
Aspiration Hazard	None of the ingredients are known to be an aspiration hazard.

Numerical measures of toxicity - Product

The following values are calculated based on chapter 3.1 of the GHS document:

LD50 Oral	42888 mg/kg; Acute toxicity estimate
LD50 Dermal	329859 mg/kg; Acute toxicity estimate

12. ECOLOGICAL INFORMATION

Ecotoxicity

Toxic to aquatic life. Harmful to aquatic life with long lasting effects.

Chemical Name	Toxicity to Algae	Toxicity to Fish	Toxicity to Microorganisms	Daphnia Magna (Water Flea)
Isoparaffinic Hydrocarbon 64742-47-8		LC50 96 h: = 45 mg/L flow-through (Pimephales promelas) LC50 96 h: = 2.2 mg/L static (Lepomis macrochirus) LC50 96 h: = 2.4 mg/L static (Oncorhynchus mykiss)		LC50 96 h: = 4720 mg/L (Daphnia magna)
Diethylhexyl sodium sulfosuccinate 577-11-7		LC50 96 h: 20 - 40 mg/L semi-static (Oncorhynchus mykiss) LC50 96 h: < 24 mg/L static (Oncorhynchus mykiss) LC50 96 h: = 37 mg/L static (Lepomis macrochirus)		EC50 48 h: = 36 mg/L (Daphnia magna)
D-Limonene 5989-27-5		LC50 96 h: 0.619 - 0.796 mg/L flow-through (Pimephales promelas) LC50 96 h: = 35 mg/L (Oncorhynchus mykiss)		
Dimethyl glutarate 1119-40-0		LC50 96 h: 19.6-26.2 mg/L static (Pimephales promelas)		EC50 48 h: 122.1 - 163.5 mg/L (Daphnia magna)
1,3-Propanediol, 2,2-dimethyl- 126-30-7	EC50 72 h: > 1000 mg/L (Pseudokirchneriella subcapitata) EC50 72 h: > 500 mg/L (Desmodesmus subspicatus)	LC50 96 h: > 1000 mg/L semi-static (Oryzias latipes)		EC50 24 h: > 1000 mg/L (Daphnia magna)
Isopropyl myristate 110-27-0	EC50 72 h: > 100 mg/L (Desmodesmus subspicatus)	LC50 96 h: = 8400 mg/L (Brachydanio rerio) LC50 96 h: = 8400 mg/L semi-static (Brachydanio rerio)	-	EC50 48 h: = 100 mg/L (Daphnia magna)
2-Phenoxyethanol 122-99-6	EC50 72 h: > 500 mg/L (Desmodesmus subspicatus)	LC50 96 h: 337 - 352 mg/L flow-through (Pimephales promelas) LC50 96 h: = 366 mg/L static (Pimephales promelas) LC50 96 h: 220 - 460 mg/L static (Leuciscus idus)	EC50 = 32.4 mg/L 5 min EC50 = 880 mg/L 17 h	EC50 48 h: > 500 mg/L (Daphnia magna)
Propylene glycol 57-55-6	EC50 96 h: = 19000 mg/L (Pseudokirchneriella subcapitata)	LC50 96 h: = 51600 mg/L static (Oncorhynchus mykiss) LC50 96 h: 41 - 47 mL/L static (Oncorhynchus mykiss) LC50 96 h: = 51400 mg/L static (Pimephales promelas) LC50 96 h: = 710 mg/L (Pimephales promelas)	EC50 = 710 mg/L 30 min	EC50 24 h: > 10000 mg/L (Daphnia magna) EC50 48 h: > 1000 mg/L Static (Daphnia magna)
Glycerin 56-81-5	-	LC50 96 h: 51 - 57 mL/L static (Oncorhynchus mykiss)	-	EC50 24 h: > 500 mg/L (Daphnia magna)
Iodopropynyl butylcarbamate 55406-53-6		LC50 96 h: 0.049-0.079 mg/L flow-through (Oncorhynchus mykiss) LC50 96 h: 0.05-0.089 mg/L (Oncorhynchus mykiss) LC50 96 h: 0.14-0.32 mg/L flow-through (Lepomis macrochirus) LC50 96 h: 0.18-0.23 mg/L flow-through (Pimephales promelas)		

Persistence and Degradability No information available.

Bioaccumulation No information available.

Other Adverse Effects

No information available.

13. DISPOSAL CONSIDERATIONS**Waste Disposal Methods**

This material, as supplied, is not a hazardous waste according to Federal regulations (40 CFR 261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered. Consult 40 CFR 261 to determine whether the altered material is a hazardous waste. Consult the appropriate state, regional, or local regulations for additional requirements.

Contaminated Packaging

Do not re-use empty containers.

This product contains one or more substances that are listed with the State of California as a hazardous waste.

Chemical Name	California Hazardous Waste
D-Limonene	Toxic

14. TRANSPORT INFORMATION**DOT**

Not regulated

15. REGULATORY INFORMATION**International Inventories****Legend**

TSCA - United States Toxic Substances Control Act Section 8(b) Inventory. All components of this product are either listed or are exempt on the TSCA inventory.

DSL/NDSL - Canadian Domestic Substances List/Non-Domestic Substances List

U.S. Federal Regulations

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

SARA 311/312 Hazard Categories

Acute Health Hazard	No
Chronic Health Hazard	No
Fire Hazard	No
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Clean Water Act

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

CERCLA

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

U.S. State Regulations

California Proposition 65

This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

This product does not contain any substances regulated by state right-to-know regulations.

U.S. EPA Label Information

EPA Pesticide Registration Number Not applicable

16. OTHER INFORMATION					
<u>NFPA</u>	Health Hazard	1	Flammability	0	Instability 0
<u>HMIS</u>	Health Hazard	1	Flammability	0	Physical Hazard 0
					Physical and Chemical Hazards -
					Personal Protection X

**Indicates a chronic health hazard.*

Prepared By	Product Stewardship 23 British American Blvd. Latham, NY 12110 1-800-572-6501
Issuing Date	13-Sep-2013
Revision Date	31-Mar-2015
Revision Note	Initial Release.

General Disclaimer

The information provided on this SDS is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered as a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other material or in any process, unless specified in the text.

End of Safety Data Sheet

**1. Identification**

Product name : Sikacrete®-211

Supplier : Sika Corporation

Address : 201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887
ehs@sika-corp.com

Recommended use of the chemical and restrictions on use : For further information, refer to the product technical data sheet.

2. Hazards identification**GHS Classification**

Skin irritation , Category 2	H315: Causes skin irritation.
Serious eye damage , Category 1	H318: Causes serious eye damage.
Carcinogenicity , Category 1A	H350: May cause cancer.
Specific target organ systemic toxicity - single exposure , Category 3, Respiratory system	H335: May cause respiratory irritation.

GHS Label element

Hazard pictograms :   

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.



P280 Wear protective gloves.

P281 Use personal protective equipment as required.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER or doctor/physician.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Quartz (SiO ₂)	14808-60-7	>= 50 - <= 100 %
Portland cement	65997-15-1	>= 20 - < 25 %
Quartz (SiO ₂) <5µm	14808-60-7	>= 0 - < 1 %

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- | | |
|-------------------------|---|
| If inhaled | : Move to fresh air.
Consult a physician after significant exposure. |
| In case of skin contact | : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician. |
| In case of eye contact | : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. |



	<p>Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing.</p>
If swallowed	<p>: Clean mouth with water and drink afterwards plenty of water. Induce vomiting immediately and call a physician. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.</p>
Most important symptoms and effects, both acute and delayed	<p>: irritant effects carcinogenic effects</p> <p>Cough Respiratory disorder Excessive lachrymation Erythema Dermatitis See Section 11 for more detailed information on health effects and symptoms.</p>
Protection of first-aiders	<p>: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.</p>
Notes to physician	<p>: Treat symptomatically.</p>

5. Fire-fighting measures

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Avoid breathing dust. Deny access to unprotected persons.
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	: Pick up and arrange disposal without creating dust. Keep in suitable, closed containers for disposal.



7. Handling and storage

- Advice on safe handling : Do not breathe vapors/dust.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.
- Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep in a well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.
- Materials to avoid : no data available

8. Exposure controls/personal protection

Component	CAS-No.	Basis **	Value	Exposure limit(s)* / Form of exposure
Quartz (SiO ₂)	14808-60-7	ACGIH	TWA	0.025 mg/m ³ Respirable fraction
		OSHA Z-3	TWA	30 mg/m ³ /%SiO ₂ +2 total dust
		OSHA Z-3	TWA	10 mg/m ³ /%SiO ₂ +2 respirable
		OSHA Z-3	TWA	250 mppcf/%SiO ₂ +5 respirable
		OSHA P0	TWA	0.1 mg/m ³ Respirable fraction
Portland cement	65997-15-1	ACGIH	TWA	1 mg/m ³ Respirable fraction
		OSHA P0	TWA	10 mg/m ³ Total
		OSHA P0	TWA	5 mg/m ³ Respirable fraction
		OSHA Z-1	TWA	15 mg/m ³ total dust



		OSHA Z-1	TWA	5 mg/m3 respirable fraction
		OSHA Z-3	TWA	50 Million particles per cubic foot Dust
Quartz (SiO ₂) <5µm	14808-60-7	ACGIH	TWA	0.025 mg/m3 Respirable fraction
		OSHA Z-3	TWA	30 mg/m3/%SiO ₂ +2 total dust
		OSHA Z-3	TWA	10 mg/m3/%SiO ₂ +2 respirable
		OSHA Z-3	TWA	250 mppcf/%SiO ₂ +5 respirable
		OSHA P0	TWA	0.1 mg/m3 Respirable fraction

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**

ACGIH. Threshold Limit Values (TLV)

OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)

OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant

OSHA P2. Permissible Exposure Limits (PEL), Table Z-2

OSHA Z3. Table Z-3, Mineral Dust

Engineering measures

: Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection

: Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.



Hand protection	
Remarks	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Hygiene measures	: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling. Avoid breathing dust.

9. Physical and chemical properties

Appearance	: powder
Color	: gray
Odor	: odorless
Odor Threshold	: no data available
Flash point	: Note: not applicable
Ignition temperature	: no data available
Decomposition temperature	: no data available
Lower explosion limit (Vol%)	: no data available
Upper explosion limit (Vol%)	: no data available
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available
pH	: Note: not applicable
Melting point/range /	: no data available
Freezing point	
Boiling point/boiling range	: no data available
Vapor pressure	: no data available
Density	: ca.2.720 g/cm3



at 73 °F (23 °C)

Water solubility	: Note: insoluble
Partition coefficient: n-octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Relative vapor density	: no data available
Evaporation rate	: no data available
Burning rate	: no data available
Volatile organic compounds (VOC) content	: 0 g/l

10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: no data available
Incompatible materials	: no data available

11. Toxicological information**Acute toxicity****Product**

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available

Skin corrosion/irritation**Product**

Causes skin irritation.

Serious eye damage/eye irritation**Product**

Causes serious eye damage.

**Respiratory or skin sensitization****Product**

no data available

Germ cell mutagenicity**Product**

Mutagenicity : no data available

Carcinogenicity**Product**

Carcinogenicity : May cause cancer.

IARC

Group 1: Carcinogenic to humans

Quartz (SiO₂) 14808-60-7Quartz (SiO₂) <5µm 14808-60-7**NTP**

Known to be human carcinogen

Quartz (SiO₂) 14808-60-7Quartz (SiO₂) <5µm 14808-60-7**Reproductive Toxicity/Fertility****Product**

Reproductive toxicity : no data available

Reproductive Toxicity/Development/Teratogenicity**Product**

Teratogenicity : no data available

STOT-single exposure**Product**

Assessment: May cause respiratory irritation.

STOT-repeated exposure

Prolonged exposure can cause silicosis.

Product

Assessment: no data available

Aspiration toxicity**Product**

no data available

12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.



13. Disposal considerations

Disposal methods

- Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information

- TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

- SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

- SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313**

: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act**Ozone-Depletion Potential**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

16. Other information**HMIS Classification**

Health	*	3
Flammability		0
Physical Hazard		0
Personal Protection		X

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product



Safety Data Sheet

Sikacrete®-211

Revision Date 11/25/2013

Print Date 11/25/2013

label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 11/25/2013

Material number: 431051



1. Identification

Product name : Sikaflex®-2c SL Part A limestone

Supplier : Sika Corporation

Address : 201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887
ehs@sika-corp.com

Recommended use of the chemical and restrictions on use : For further information, refer to the product technical data sheet.



2. Hazards identification

GHS Classification

Eye irritation, Category 2A
Carcinogenicity, Category 1A

H319: Causes serious eye irritation.
H350: May cause cancer.

GHS Label element

Hazard pictograms :  

Signal Word : Danger

Hazard Statements : H319 Causes serious eye irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P280 Wear eye protection/ face protection.
P281 Use personal protective equipment as required.
Response:
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308 + P313 IF exposed or concerned: Get medical advice/ attention.



P337 + P313 If eye irritation persists: Get medical advice/attention.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
xylene	1330-20-7	>= 2 - < 5 %
titanium dioxide	13463-67-7	>= 2 - < 5 %
aluminium sulphate	10043-01-3	>= 2 - < 5 %
ethylbenzene	100-41-4	>= 0 - < 1 %
Quartz (SiO ₂)	14808-60-7	>= 0 - < 1 %

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Immediately flush eye(s) with plenty of water.
Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Induce vomiting immediately and call a physician.
Do not give milk or alcoholic beverages.
Never give anything by mouth to an unconscious person.

Most important symptoms : irritant effects



and effects, both acute and delayed	carcinogenic effects Excessive lachrymation See Section 11 for more detailed information on health effects and symptoms.
Protection of first-aiders	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
Notes to physician	: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Deny access to unprotected persons.
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

7. Handling and storage

Advice on safe handling	: Avoid exceeding the given occupational exposure limits (see section 8). Do not get in eyes, on skin, or on clothing. For personal protection see section 8. Smoking, eating and drinking should be prohibited in the application area. Follow standard hygiene measures when handling chemical products.
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Conditions for safe storage : Prevent unauthorized access.
 Store in original container.
 Keep container tightly closed in a dry and well-ventilated place.
 Observe label precautions.
 Store in accordance with local regulations.

Materials to avoid : no data available

8. Exposure controls/personal protection

Component	CAS-No.	Basis **	Value	Exposure limit(s)* / Form of exposure
xylene	1330-20-7	OSHA Z-1	TWA	100 ppm 435 mg/m3
		ACGIH	TWA	100 ppm
		ACGIH	STEL	150 ppm
		OSHA P0	STEL	150 ppm 655 mg/m3
		OSHA P0	TWA	100 ppm 435 mg/m3
ethylbenzene	100-41-4	ACGIH	TWA	100 ppm
		ACGIH	STEL	125 ppm
		OSHA Z-1	TWA	100 ppm 435 mg/m3
		OSHA P0	TWA	100 ppm 435 mg/m3
		OSHA P0	STEL	125 ppm 545 mg/m3



*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**

ACGIH. Threshold Limit Values (TLV)

OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)

OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant

OSHA P2. Permissible Exposure Limits (PEL), Table Z-2

OSHA Z3. Table Z-3, Mineral Dust

Engineering measures : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.

9. Physical and chemical properties

Appearance : viscous

Color : gray



Odor	: aromatic
Odor Threshold	: no data available
Flash point	: 216 °F (102 °C)
Ignition temperature	: not applicable
Decomposition temperature	: no data available
Lower explosion limit (Vol%)	: no data available
Upper explosion limit (Vol%)	: no data available
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available
pH	: no data available
Melting point/range / Freezing point	: no data available
Boiling point/boiling range	: no data available
Vapor pressure	: no data available
Density	: 1.6 g/cm ³ at 68 °F (20 °C)
Water solubility	: Note: insoluble
Partition coefficient: n- octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: > 20.5 mm ² /s at 104 °F (40 °C)
Relative vapor density	: no data available
Evaporation rate	: no data available
Burning rate	: no data available
Volatile organic compounds (VOC) content	: 38 g/l A+B Combined

10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.



Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: no data available
Incompatible materials	: no data available

11. Toxicological information

Acute toxicity

Product

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available

Skin corrosion/irritation

Product

no data available

Serious eye damage/eye irritation

Product

Causes serious eye irritation.

Respiratory or skin sensitization

Product

no data available

Germ cell mutagenicity

Product

Mutagenicity	: no data available
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Carcinogenicity

Product

Carcinogenicity	: May cause cancer.
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IARC

Group 1: Carcinogenic to humans
 Quartz (SiO₂) 14808-60-7
 Group 2B: Possibly carcinogenic to humans
 titanium dioxide 13463-67-7
 ethylbenzene 100-41-4
 Known to be human carcinogen

NTP



Reproductive Toxicity/Fertility Quartz (SiO₂) 14808-60-7

Product

Reproductive toxicity : no data available

Reproductive Toxicity/Development/Teratogenicity

Product

Teratogenicity : no data available

STOT-single exposure

Product

Assessment: no data available

STOT-repeated exposure

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

Product

Assessment: no data available

Aspiration toxicity

Product

no data available

12. Ecological information

Other information	Do not empty into drains; dispose of this material and its container in a safe way. Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.
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13. Disposal considerations

Disposal methods

Waste from residues	: Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
Contaminated packaging	: Empty containers should be taken to an approved waste handling site for recycling or disposal.



14. Transport information

DOT

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information

TSCA list

: All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards

: Acute Health Hazard
Chronic Health Hazard

SARA 302

: SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313

: The following components are subject to reporting levels established by SARA Title III, Section 313:
xylene 1330-20-7 3.87 %

Clean Air Act

Ozone-Depletion Potential

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

xylene 1330-20-7 3.87 %



This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

16. Other information**HMIS Classification**

Health	*	3
Flammability		1
Physical Hazard		0
Personal Protection		X

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 07/21/2014

Material number: 187958

**1. Identification**

Product name : Sikaflex®-2c NS/SL Part B

Supplier : Sika Corporation

Address : 201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887
ehs@sika-corp.com

Recommended use of the chemical and restrictions on use : For further information, refer to the product technical data sheet.

2. Hazards identification**GHS Classification**

Flammable liquids, Category 3
Carcinogenicity, Category 2

H226: Flammable liquid and vapor.
H351: Suspected of causing cancer.

GHS Label element

Hazard pictograms



Signal Word

: Warning

Hazard Statements

: H226 Flammable liquid and vapor.
H351 Suspected of causing cancer.

Precautionary Statements

: **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P210 Keep away from heat/sparks/open flames/hot surfaces. - No smoking.
P233 Keep container tightly closed.
P240 Ground/bond container and receiving equipment.
P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.
P242 Use only non-sparking tools.
P243 Take precautionary measures against static discharge.
P280 Wear protective gloves/ eye protection/ face protection.



P281 Use personal protective equipment as required.

Response:

P303 + P361 + P353 IF ON SKIN (or hair): Remove/ Take off immediately all contaminated clothing. Rinse skin with water/ shower.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

P370 + P378 In case of fire: Use dry sand, dry chemical or alcohol-resistant foam for extinction.

Storage:

P403 + P235 Store in a well-ventilated place. Keep cool.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
xylene	1330-20-7	>= 5 - < 10 %
ethylbenzene	100-41-4	>= 1 - < 2 %

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Remove contact lenses.
Keep eye wide open while rinsing.
If eye irritation persists, consult a specialist.

If swallowed : Clean mouth with water and drink afterwards plenty of water.
Do not give milk or alcoholic beverages.



	Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	: No known significant effects or hazards. See Section 11 for more detailed information on health effects and symptoms.
Protection of first-aiders	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
Notes to physician	: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	: Alcohol-resistant foam Carbon dioxide (CO ₂) Dry chemical
Unsuitable extinguishing media	: Water
Specific extinguishing methods	: Use water spray to cool unopened containers. Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Remove all sources of ignition. Deny access to unprotected persons. Beware of vapors accumulating to form explosive concentrations. Vapors can accumulate in low areas.
Environmental precautions	: Prevent product from entering drains. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	: Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).



7. Handling and storage

- Advice on safe handling : Do not breathe vapors or spray mist.
 Avoid exceeding the given occupational exposure limits (see section 8).
 Do not get in eyes, on skin, or on clothing.
 For personal protection see section 8.
 Smoking, eating and drinking should be prohibited in the application area.
 Take precautionary measures against static discharge.
 Open drum carefully as content may be under pressure.
 Take necessary action to avoid static electricity discharge (which might cause ignition of organic vapors).
 Follow standard hygiene measures when handling chemical products.
- Conditions for safe storage : Store in original container.
 Keep in a well-ventilated place.
 Containers which are opened must be carefully resealed and kept upright to prevent leakage.
 Observe label precautions.
 Store in accordance with local regulations.
- Materials to avoid : no data available

8. Exposure controls/personal protection

Component	CAS-No.	Basis **	Value	Exposure limit(s)* / Form of exposure
xylylene	1330-20-7	OSHA Z-1	TWA	100 ppm 435 mg/m3
		ACGIH	TWA	100 ppm
		ACGIH	STEL	150 ppm
		OSHA P0	STEL	150 ppm 655 mg/m3
		OSHA P0	TWA	100 ppm 435 mg/m3
ethylbenzene	100-41-4	ACGIH	TWA	100 ppm
		ACGIH	STEL	125 ppm
		OSHA Z-1	TWA	100 ppm 435 mg/m3
		OSHA P0	TWA	100 ppm 435 mg/m3



		OSHA P0	STEL	125 ppm 545 mg/m3
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*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**

ACGIH. Threshold Limit Values (TLV)

OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)

OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant

OSHA P2. Permissible Exposure Limits (PEL), Table Z-2

OSHA Z3. Table Z-3, Mineral Dust

Engineering measures : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.
The engineering controls also need to keep gas, vapor or dust concentrations below any lower explosive limits.

Personal protective equipment

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove respiratory and skin/eye protection only after vapors have been cleared from the area.
Remove contaminated clothing and protective equipment before entering eating areas.



9. Physical and chemical properties

Appearance	: liquid
Color	: clear transparent
Odor	: aromatic
Odor Threshold	: no data available
Flash point	: 111.9 °F (44.4 °C)
Ignition temperature	: 869 °F (465 °C)
Decomposition temperature	: no data available
Lower explosion limit (Vol%)	: 1 %(V)
Upper explosion limit (Vol%)	: 7 %(V)
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available
pH	: no data available
Melting point/range / Freezing point	: no data available
Boiling point/boiling range	: no data available
Vapor pressure	: 6.000 mmHg (7.9993 hpa)
Density	: 1.02 g/cm3 at 68 °F (20 °C)
Water solubility	: no data available
Partition coefficient: n- octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Relative vapor density	: no data available
Evaporation rate	: no data available
Burning rate	: no data available
Volatile organic compounds (VOC) content	: 19 g/l Sikaflex®-2c NS (A) + (B) Combined



: < 50 g/l Sikaflex®-2c NS EZ Mix (A) + (B) Combined

: 38 g/l Sikaflex®-2c SL (A) + (B) Combined

10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions. Vapors may form explosive mixture with air.
Conditions to avoid	: Heat, flames and sparks.
Incompatible materials	: no data available

11. Toxicological information

Acute toxicity

Product

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available

Skin corrosion/irritation

Product

no data available

Serious eye damage/eye irritation

Product

no data available

Respiratory or skin sensitization

Product

no data available

Germ cell mutagenicity



Product

Mutagenicity : no data available

Carcinogenicity

Product

Carcinogenicity : Suspected of causing cancer.

IARC

Group 2B: Possibly carcinogenic to humans

ethylbenzene 100-41-4

NTP

not applicable

Reproductive Toxicity/Fertility

Product

Reproductive toxicity : no data available

Reproductive Toxicity/Development/Teratogenicity

Product

Teratogenicity : no data available

STOT-single exposure

Product

Assessment: no data available

STOT-repeated exposure

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

Product

Assessment: no data available

Aspiration toxicity

Product

no data available

12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.



13. Disposal considerations**Disposal methods**

- Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information**DOT**

- UN number 1993
Description of the goods Flammable liquids, n.o.s.
(xylene)
Class 3
Packing group III
Labels 3
Emergency Response 128
Guidebook Number

IATA

- UN number 1993
Description of the goods Flammable liquid, n.o.s.
(xylene)
Class 3
Packing group III
Labels 3
Packing instruction (cargo aircraft) 366
Packing instruction (passenger aircraft) 309
Packing instruction (passenger aircraft) Y309

IMDG

- UN number 1993
Description of the goods FLAMMABLE LIQUID, N.O.S.
(xylene)
Class 3
Packing group III
Labels 3
EmS Number 1 F-E
EmS Number 2 S-E

Marine pollutant no

DOT: As per 49CFR 173.150 (f) Combustible Liquid Exception, Material is Not Regulated.
IMDG: For Limited Quantity special provisions reference IMDG Code Chapter 3.4

**Special precautions for user**

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information

TSCA list : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Fire Hazard
Chronic Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

xylene	1330-20-7	7.20 %
ethylbenzene	100-41-4	1.69 %

Clean Air Act**Ozone-Depletion Potential**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

xylene	1330-20-7	7.20 %
ethylbenzene	100-41-4	1.69 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.



16. Other information**HMIS Classification**

Health	*	2
Flammability		2
Physical Hazard		0
Personal Protection		X

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

SIKA MAKES NO WARRANTIES EXPRESS OR IMPLIED AND ASSUMES NO LIABILITY ARISING FROM THIS INFORMATION OR ITS USE. SIKA SHALL NOT BE LIABLE UNDER ANY LEGAL THEORY FOR SPECIAL OR CONSEQUENTIAL DAMAGES AND SHALL NOT BE RESPONSIBLE FOR THE USE OF THIS PRODUCT IN A MANNER TO INFRINGE ON ANY PATENT OR ANY OTHER INTELLECTUAL PROPERTY RIGHTS HELD BY OTHERS.

All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 07/21/2014

Material number: 183677

**1. Identification**

Product name : Sikaflex® Concrete Fix

Supplier : Sika Corporation

Address : 201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887
ehs@sika-corp.com

Recommended use of the chemical and restrictions on use : For further information, refer to the product technical data sheet.

2. Hazards identification**GHS Classification**

Respiratory sensitization, Category 1 H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Skin sensitization, Category 1 H317: May cause an allergic skin reaction.

Carcinogenicity, Category 1A H350: May cause cancer.

GHS Label element

Hazard pictograms :



Signal Word : Danger

Hazard Statements : H317 May cause an allergic skin reaction.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P272 Contaminated work clothing should not be allowed out of the workplace.
P280 Wear protective gloves.
P281 Use personal protective equipment as required.



P285 In case of inadequate ventilation wear respiratory protection.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P341 IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P333 + P313 If skin irritation or rash occurs: Get medical advice/attention.

P363 Wash contaminated clothing before reuse.

Storage:

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

** See section 11 for more detailed information on health effects and symptoms.

** There are no hazards not otherwise classified that have been identified during the classification process.

** There are no ingredients with unknown acute toxicity used in a mixture at a concentration $\geq 1\%$.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
titanium dioxide	13463-67-7	$\geq 2 - < 5\%$
xylene	1330-20-7	$\geq 2 - < 5\%$
ethylbenzene	100-41-4	$\geq 0 - < 1\%$
Quartz (SiO ₂)	14808-60-7	$\geq 0 - < 1\%$
aromatic polyisocyanate	53317-61-6	$\geq 0 - < 1\%$
Carbon black	1333-86-4	$\geq 0 - < 1\%$
4,4'-methylenediphenyl diisocyanate	101-68-8	$\geq 0 - < 1\%$

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.



In case of eye contact	: Remove contact lenses. Keep eye wide open while rinsing. If eye irritation persists, consult a specialist.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Induce vomiting immediately and call a physician. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	: Asthmatic appearance Allergic reactions See Section 11 for more detailed information on health effects and symptoms. sensitizing effects carcinogenic effects
Protection of first-aiders	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
Notes to physician	: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Deny access to unprotected persons.
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	: Soak up with inert absorbent material (e.g. sand, silica gel, acid binder, universal binder, sawdust). Keep in suitable, closed containers for disposal.

**7. Handling and storage**

- Advice on safe handling : Do not breathe vapors or spray mist.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Persons with a history of skin sensitization problems or asthma, allergies, chronic or recurrent respiratory disease should not be employed in any process in which this mixture is being used.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.
- Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep container tightly closed in a dry and well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.
- Materials to avoid : no data available

8. Exposure controls/personal protection

Component	CAS-No.	Basis **	Value	Exposure limit(s)* / Form of exposure
xylene	1330-20-7	ACGIH	TWA	100 ppm
		ACGIH	STEL	150 ppm
		OSHA Z-1	TWA	100 ppm 435 mg/m3
		OSHA P0	TWA	100 ppm 435 mg/m3
		OSHA P0	STEL	150 ppm 655 mg/m3
ethylbenzene	100-41-4	ACGIH	TWA	100 ppm
		ACGIH	STEL	125 ppm
		OSHA Z-1	TWA	100 ppm 435 mg/m3
		OSHA P0	TWA	100 ppm 435 mg/m3



		OSHA P0	STEL	125 ppm 545 mg/m3
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*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**

ACGIH. Threshold Limit Values (TLV)

OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)

OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant

OSHA P2. Permissible Exposure Limits (PEL), Table Z-2

OSHA Z3. Table Z-3, Mineral Dust

Engineering measures

: Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment**Respiratory protection**

: Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection**Remarks**

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection

: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures

: Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.

**9. Physical and chemical properties**

Appearance	: paste
Color	: various
Odor	: aromatic
Odor Threshold	: no data available
Flash point	: Note: not applicable
Ignition temperature	: not applicable
Decomposition temperature	: no data available
Lower explosion limit (Vol%)	: no data available
Upper explosion limit (Vol%)	: no data available
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available
pH	: no data available
Melting point/range / Freezing point	: no data available
Boiling point/boiling range	: no data available
Vapor pressure	: no data available
Density	: ca. 1.4 g/cm ³ at 68 °F (20 °C)
Water solubility	: no data available
Partition coefficient: n- octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: ca. > 20.5 mm ² /s at 104 °F (40 °C)
Relative vapor density	: no data available
Evaporation rate	: no data available
Burning rate	: no data available
Volatile organic compounds (VOC) content	: 40 g/l



10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: no data available
Incompatible materials	: no data available

11. Toxicological information**Acute toxicity****Product**

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available

Ingredients:**aromatic polyisocyanate :**

Acute oral toxicity	: LD50 Oral rat: > 5,000 mg/kg
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Carbon black :

Acute oral toxicity	: LD50 Oral rat: > 8,000 mg/kg
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4,4'-methylenediphenyl diisocyanate :

Acute inhalation toxicity	: Acute toxicity estimate : 1.5 mg/l Test atmosphere: dust/mist Method: Expert judgment
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Skin corrosion/irritation**Product**

no data available

Serious eye damage/eye irritation**Product**

no data available

Respiratory or skin sensitization**Product**

May cause an allergic skin reaction.



May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Germ cell mutagenicity**Product**

Mutagenicity : no data available

Carcinogenicity**Product**

Carcinogenicity : May cause cancer.

IARC

Group 2B: Possibly carcinogenic to humans

titanium dioxide 13463-67-7

ethylbenzene 100-41-4

Carbon black 1333-86-4

Group 1: Carcinogenic to humans

Quartz (SiO₂) 14808-60-7

NTP

Known to be human carcinogen

Quartz (SiO₂) 14808-60-7

Reproductive Toxicity/Fertility**Product**

Reproductive toxicity : no data available

Reproductive Toxicity/Development/Teratogenicity**Product**

Teratogenicity : no data available

STOT-single exposure**Product**

Assessment: no data available

STOT-repeated exposure

Reports have associated repeated and prolonged exposure to some of the chemicals in this product with permanent brain, liver, kidney and nervous system damage. Intentional misuse by deliberate concentration and inhalation of vapors may be harmful or fatal.

Once sensitized, a severe allergic reaction may occur when subsequently exposed to very low levels.

Product

Assessment: no data available

Aspiration toxicity**Product**

no data available



12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

Component:

Carbon black

1333-86-4

Toxicity to fish:

LC50

Species: Brachydanio rerio (zebrafish)

Dose: > 1,000 mg/l

Exposure time: 96 h

13. Disposal considerations**Disposal methods**

Waste from residues

: Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Contaminated packaging

: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information**DOT**

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information**TSCA list**

: All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

**EPCRA - Emergency Planning and Community Right-to-Know****CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Chronic Health Hazard
Acute Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : The following components are subject to reporting levels established by SARA Title III, Section 313:

xylene	1330-20-7	2.60 %
ethylbenzene	100-41-4	0.75 %

The following components are subject to reporting levels established by SARA Title III, Section 313:

xylene	1330-20-7	2.60 %
ethylbenzene	100-41-4	0.75 %

Clean Air Act**Ozone-Depletion Potential**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

The following chemical(s) are listed as HAP under the U.S. Clean Air Act, Section 12 (40 CFR 61):

xylene	1330-20-7	2.60 %
ethylbenzene	100-41-4	0.75 %

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

16. Other information**HMIS Classification**

Health	*	3
Flammability		0
Physical Hazard		0
Personal Protection		X



Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 02/27/2014

Material number: 468011

**1. Identification**

Product name : SikaGrout®-212

Supplier : Sika Corporation

Address : 201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887
ehs@sika-corp.com

Recommended use of the chemical and restrictions on use : For further information, refer to the product technical data sheet.

2. Hazards identification**GHS Classification**

Skin irritation , Category 2	H315: Causes skin irritation.
Serious eye damage , Category 1	H318: Causes serious eye damage.
Carcinogenicity , Category 1A	H350: May cause cancer.
Specific target organ systemic toxicity - single exposure , Category 3, Respiratory system	H335: May cause respiratory irritation.

GHS Label element

Hazard pictograms :   

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.



P280 Wear protective gloves.

P281 Use personal protective equipment as required.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER or doctor/physician.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

Warning : Contains material that may cause target organ damage.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Quartz (SiO ₂)	14808-60-7	>= 50 - <= 100 %
Portland cement	65997-15-1	>= 25 - < 50 %
Quartz (SiO ₂) <5µm	14808-60-7	>= 0 - < 1 %

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If inhaled : Move to fresh air.
Consult a physician after significant exposure.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician.

In case of eye contact : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.



	<p>In the case of contact with eyes, rinse immediately with plenty of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing.</p>
If swallowed	<p>: Clean mouth with water and drink afterwards plenty of water. Induce vomiting immediately and call a physician. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.</p>
Most important symptoms and effects, both acute and delayed	<p>: Cough Respiratory disorder Excessive lachrymation Erythema Dermatitis See Section 11 for more detailed information on health effects and symptoms.</p> <p>irritant effects carcinogenic effects</p>
Protection of first-aiders	<p>: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.</p>
Notes to physician	<p>: Treat symptomatically.</p>

5. Fire-fighting measures

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Avoid breathing dust. Deny access to unprotected persons.
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.



Methods and materials for containment and cleaning up : Pick up and arrange disposal without creating dust.
Keep in suitable, closed containers for disposal.

7. Handling and storage

Advice on safe handling : Do not breathe vapors/dust.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.

Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep in a well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.

Materials to avoid : no data available

8. Exposure controls/personal protection

Component	CAS-No.	Basis **	Value	Exposure limit(s)* / Form of exposure
Quartz (SiO ₂)	14808-60-7	ACGIH	TWA	0.025 mg/m ³ Respirable fraction
		OSHA Z-3	TWA	30 mg/m ³ /%SiO ₂ +2 total dust
		OSHA Z-3	TWA	10 mg/m ³ /%SiO ₂ +2 respirable
		OSHA Z-3	TWA	250 mppcf/%SiO ₂ +5 respirable
		OSHA P0	TWA	0.1 mg/m ³ Respirable fraction
Portland cement	65997-15-1	ACGIH	TWA	1 mg/m ³ Respirable fraction
		OSHA P0	TWA	10 mg/m ³ Total
		OSHA P0	TWA	5 mg/m ³ Respirable fraction



		OSHA Z-1	TWA	15 mg/m3 total dust
		OSHA Z-1	TWA	5 mg/m3 respirable fraction
		OSHA Z-3	TWA	50 Million particles per cubic foot Dust
Quartz (SiO ₂) <5µm	14808-60-7	ACGIH	TWA	0.025 mg/m3 Respirable fraction
		OSHA Z-3	TWA	30 mg/m3/%SiO ₂ +2 total dust
		OSHA Z-3	TWA	10 mg/m3/%SiO ₂ +2 respirable
		OSHA Z-3	TWA	250 mppcf/%SiO ₂ +5 respirable
		OSHA P0	TWA	0.1 mg/m3 Respirable fraction

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**

ACGIH. Threshold Limit Values (TLV)

OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)

OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant

OSHA P2. Permissible Exposure Limits (PEL), Table Z-2

OSHA Z3. Table Z-3, Mineral Dust

Engineering measures

: Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection

: Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling



the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection**Remarks**

: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection

: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection

: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures

: Avoid contact with skin, eyes and clothing.
Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.
Wash thoroughly after handling.
Avoid breathing dust.

9. Physical and chemical properties

Appearance	: powder
Color	: gray
Odor	: odorless
Odor Threshold	: no data available
Flash point	: Note: not applicable
Ignition temperature	: no data available
Decomposition temperature	: no data available
Lower explosion limit (Vol%)	: no data available
Upper explosion limit (Vol%)	: no data available
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available
pH	: Note: not applicable
Melting point/range /	: no data available
Freezing point	
Boiling point/boiling range	: no data available
Vapor pressure	: no data available



Density	: ca.2.85 g/cm ³ at 73 °F (23 °C)
Water solubility	: Note: insoluble
Partition coefficient: n-octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Relative vapor density	: no data available
Evaporation rate	: no data available
Burning rate	: no data available
Volatile organic compounds (VOC) content	: 0 g/l

10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: no data available
Incompatible materials	: no data available

11. Toxicological information

Acute toxicity

Product

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available

Skin corrosion/irritation

Product

Causes skin irritation.

Serious eye damage/eye irritation

Product



Causes serious eye damage.

Respiratory or skin sensitization

Product

no data available

Germ cell mutagenicity

Product

Mutagenicity : no data available

Carcinogenicity

Product

Carcinogenicity : May cause cancer.

IARC

Group 1: Carcinogenic to humans

NTP

Quartz (SiO₂) 14808-60-7
not applicable

Reproductive Toxicity/Fertility

Product

Reproductive toxicity : no data available

Reproductive Toxicity/Development/Teratogenicity

Product

Teratogenicity : no data available

STOT-single exposure

Product

Assessment: May cause respiratory irritation.

STOT-repeated exposure

Prolonged exposure can cause silicosis.

Product

Assessment: no data available

Aspiration toxicity

Product

no data available

12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.



13. Disposal considerations

Disposal methods

- Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.
- Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information

- TSCA list** : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

- SARA 311/312 Hazards** : Acute Health Hazard
Chronic Health Hazard

- SARA 302** : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

**SARA 313**

: SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act**Ozone-Depletion Potential**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

Clean Water Act

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

16. Other information**HMIS Classification**

Health	*	3
Flammability		0
Physical Hazard		0
Personal Protection		X

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.

Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product



label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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All sales of Sika products are subject to its current terms and conditions of sale available at www.sikausa.com or 201-933-8800.

Revision Date 11/25/2013

Material number: 460323



1. Identification

Product name : SikaTop® PLUS Part A

Supplier : Sika Corporation

Address : 201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887
ehs@sika-corp.com

Recommended use of the chemical and restrictions on use : For further information, refer to the product technical data sheet.

2. Hazards identification

GHS Classification

Not a hazardous substance or mixture.

GHS Label element

Not a hazardous substance or mixture.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Hazardous ingredients

There are no ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

If inhaled : Move to fresh air.

In case of skin contact : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.

In case of eye contact : Flush eyes with water as a precaution.



	Remove contact lenses. Keep eye wide open while rinsing.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	: No known significant effects or hazards. See Section 11 for more detailed information on health effects and symptoms.
Protection of first-aiders	: No hazards which require special first aid measures.
Notes to physician	: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Environmental precautions	: Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for containment and cleaning up	: Wipe up with absorbent material (e.g. cloth, fleece). Keep in suitable, closed containers for disposal.

7. Handling and storage

Advice on safe handling	: For personal protection see section 8. No special handling advice required. Follow standard hygiene measures when handling chemical products.
Conditions for safe storage	: Keep container tightly closed in a dry and well-ventilated place. Store in accordance with local regulations.
Materials to avoid	: no data available

**8. Exposure controls/personal protection**

Contains no substances with occupational exposure limit values.

Engineering measures : Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

Personal protective equipment

Respiratory protection : Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary.

The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.

Hand protection
Remarks : Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Eye protection : Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.

Skin and body protection : Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.

Hygiene measures : Wash hands before breaks and immediately after handling the product.
Remove contaminated clothing and protective equipment before entering eating areas.

9. Physical and chemical properties

Appearance : liquid
Color : green
Odor : like acrylic
Odor Threshold : no data available
Flash point : > 220.1 °F (> 104.5 °C)
Ignition temperature : not applicable
Decomposition temperature : no data available



Lower explosion limit (Vol%)	: no data available
Upper explosion limit (Vol%)	: no data available
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available
pH	: ca. 8.5 at 73 °F (23 °C)
Melting point/range / Freezing point	: no data available
Boiling point/boiling range	: no data available
Vapor pressure	: no data available
Density	: ca. 1.1 g/cm ³ at 73 °F (23 °C)
Water solubility	: Note: soluble
Partition coefficient: n- octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: > 20.5 mm ² /s at 104 °F (40 °C)
Relative vapor density	: no data available
Evaporation rate	: no data available
Burning rate	: no data available
Volatile organic compounds (VOC) content	: < 20 g/l A+B Combined

10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: no data available
Incompatible materials	: no data available

**11. Toxicological information****Acute toxicity****Product**

Acute oral toxicity : no data available

Acute inhalation toxicity : no data available

Acute dermal toxicity : no data available

Skin corrosion/irritation**Product**

no data available

Serious eye damage/eye irritation**Product**

no data available

Respiratory or skin sensitization**Product**

no data available

Germ cell mutagenicity**Product**

Mutagenicity : no data available

Carcinogenicity**Product**

Carcinogenicity : no data available

IARC

not applicable

NTP

not applicable

Reproductive Toxicity/Fertility**Product**

Reproductive toxicity : no data available

Reproductive Toxicity/Development/Teratogenicity**Product**

Teratogenicity : no data available

STOT-single exposure**Product**



Assessment: no data available

STOT-repeated exposure

Product

Assessment: no data available

Aspiration toxicity

Product

no data available

12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.
Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers.

13. Disposal considerations

Disposal methods

Waste from residues

: Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Contaminated packaging

: Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information



TSCA list : All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know**CERCLA Reportable Quantity**

This material does not contain any components with a CERCLA RQ.

SARA304 Reportable Quantity

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : No SARA Hazards

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act**Ozone-Depletion Potential**

This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

California Prop 65

WARNING! This product contains a chemical known in the State of California to cause cancer.

16. Other information**HMIS Classification**

Health	<input type="text" value="1"/>
Flammability	<input type="text" value="1"/>
Physical Hazard	<input type="text" value="0"/>
Personal Protection	<input type="text" value="X"/>



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Notes to Reader

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Revision Date 11/13/2013

Material number: 187492

**1. Identification**

Product name : SikaTop®-121 PLUS Part B

Supplier : Sika Corporation

Address : 201 Polito Avenue
Lyndhurst, NJ 07071
USA
www.sikausa.com

Telephone : (201) 933-8800

Telefax : (201) 804-1076

Emergency telephone : CHEMTREC: 800-424-9300
INTERNATIONAL: 703-527-3887
ehs@sika-corp.com

Recommended use of the chemical and restrictions on use : For further information, refer to the product technical data sheet.

2. Hazards identification**GHS Classification**

Skin irritation , Category 2	H315: Causes skin irritation.
Serious eye damage , Category 1	H318: Causes serious eye damage.
Carcinogenicity , Category 1A	H350: May cause cancer.
Specific target organ systemic toxicity - single exposure , Category 3, Respiratory system	H335: May cause respiratory irritation.

GHS Label element

Hazard pictograms :   

Signal Word : Danger

Hazard Statements : H315 Causes skin irritation.
H318 Causes serious eye damage.
H335 May cause respiratory irritation.
H350 May cause cancer.

Precautionary Statements : **Prevention:**
P201 Obtain special instructions before use.
P202 Do not handle until all safety precautions have been read and understood.
P261 Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.
P264 Wash skin thoroughly after handling.
P271 Use only outdoors or in a well-ventilated area.
P280 Wear eye protection/ face protection.



P280 Wear protective gloves.

P281 Use personal protective equipment as required.

Response:

P302 + P352 IF ON SKIN: Wash with plenty of soap and water.

P304 + P340 IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.

P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

P308 + P313 IF exposed or concerned: Get medical advice/attention.

P310 Immediately call a POISON CENTER or doctor/physician.

P332 + P313 If skin irritation occurs: Get medical advice/attention.

P362 Take off contaminated clothing and wash before reuse.

Storage:

P403 + P233 Store in a well-ventilated place. Keep container tightly closed.

P405 Store locked up.

Disposal:

P501 Dispose of contents/ container to an approved waste disposal plant.

See Section 11 for more detailed information on health effects and symptoms.

3. Composition/information on ingredients

Hazardous ingredients

Chemical Name	CAS-No.	Concentration (%)
Quartz (SiO ₂)	14808-60-7	>= 50 - <= 100 %
Portland cement	65997-15-1	>= 25 - < 50 %
Calcium hydroxide	1305-62-0	>= 1 - < 2 %
Quartz (SiO ₂) <5µm	14808-60-7	>= 0 - < 1 %

There are no additional ingredients present which, within the current knowledge of the supplier and in the concentrations applicable, are classified as hazardous to health or the environment and hence require reporting in this section.

4. First aid measures

- | | |
|-------------------------|---|
| If inhaled | : Move to fresh air.
Consult a physician after significant exposure. |
| In case of skin contact | : Take off contaminated clothing and shoes immediately.
Wash off with soap and plenty of water.
If symptoms persist, call a physician. |
| In case of eye contact | : Small amounts splashed into eyes can cause irreversible tissue damage and blindness.
In the case of contact with eyes, rinse immediately with plenty |



	of water and seek medical advice. Continue rinsing eyes during transport to hospital. Remove contact lenses. Keep eye wide open while rinsing.
If swallowed	: Clean mouth with water and drink afterwards plenty of water. Induce vomiting immediately and call a physician. Do NOT induce vomiting. Do not give milk or alcoholic beverages. Never give anything by mouth to an unconscious person.
Most important symptoms and effects, both acute and delayed	: irritant effects carcinogenic effects Cough Respiratory disorder Excessive lachrymation Erythema Dermatitis See Section 11 for more detailed information on health effects and symptoms.
Protection of first-aiders	: Move out of dangerous area. Consult a physician. Show this material safety data sheet to the doctor in attendance.
Notes to physician	: Treat symptomatically.

5. Fire-fighting measures

Suitable extinguishing media	: Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.
Specific extinguishing methods	: Collect contaminated fire extinguishing water separately. This must not be discharged into drains. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.
Special protective equipment for fire-fighters	: In the event of fire, wear self-contained breathing apparatus.

6. Accidental release measures

Personal precautions, protective equipment and emergency procedures	: Use personal protective equipment. Avoid breathing dust. Deny access to unprotected persons.
Environmental precautions	: Do not flush into surface water or sanitary sewer system. If the product contaminates rivers and lakes or drains inform respective authorities. Local authorities should be advised if significant spillages cannot be contained.
Methods and materials for	: Pick up and arrange disposal without creating dust.



containment and cleaning up

Keep in suitable, closed containers for disposal.

7. Handling and storage

- Advice on safe handling : Do not breathe vapors/dust.
Avoid exceeding the given occupational exposure limits (see section 8).
Do not get in eyes, on skin, or on clothing.
For personal protection see section 8.
Smoking, eating and drinking should be prohibited in the application area.
Follow standard hygiene measures when handling chemical products.
- Conditions for safe storage : Prevent unauthorized access.
Store in original container.
Keep in a well-ventilated place.
Observe label precautions.
Store in accordance with local regulations.
- Materials to avoid : no data available

8. Exposure controls/personal protection

Component	CAS-No.	Basis **	Value	Exposure limit(s)* / Form of exposure
Quartz (SiO ₂)	14808-60-7	ACGIH	TWA	0.025 mg/m ³ Respirable fraction
		OSHA Z-3	TWA	30 mg/m ³ /%SiO ₂ +2 total dust
		OSHA Z-3	TWA	10 mg/m ³ /%SiO ₂ +2 respirable
		OSHA Z-3	TWA	250 mppcf/%SiO ₂ +5 respirable
		OSHA P0	TWA	0.1 mg/m ³ Respirable fraction
Portland cement	65997-15-1	ACGIH	TWA	1 mg/m ³ Respirable fraction
		OSHA P0	TWA	10 mg/m ³ Total
		OSHA P0	TWA	5 mg/m ³ Respirable fraction
		OSHA Z-1	TWA	15 mg/m ³



				total dust
		OSHA Z-1	TWA	5 mg/m3 respirable fraction
		OSHA Z-3	TWA	50 Million particles per cubic foot Dust
Calcium hydroxide	1305-62-0	ACGIH	TWA	5 mg/m3
		OSHA Z-1	TWA	15 mg/m3 total dust
		OSHA Z-1	TWA	5 mg/m3 respirable fraction
		OSHA P0	TWA	5 mg/m3
Quartz (SiO ₂) <5µm	14808-60-7	ACGIH	TWA	0.025 mg/m3 Respirable fraction
		OSHA Z-3	TWA	30 mg/m3/%SiO ₂ +2 total dust
		OSHA Z-3	TWA	10 mg/m3/%SiO ₂ +2 respirable
		OSHA Z-3	TWA	250 mppcf/%SiO ₂ +5 respirable
		OSHA P0	TWA	0.1 mg/m3 Respirable fraction

*The above mentioned values are in accordance with the legislation in effect at the date of the release of this safety data sheet.

****Basis**

ACGIH. Threshold Limit Values (TLV)

OSHA P0. Table Z-1, Limit for Air Contaminant (1989 Vacated Values)

OSHA P1. Permissible Exposure Limits (PEL), Table Z-1, Limit for Air Contaminant

OSHA P2. Permissible Exposure Limits (PEL), Table Z-2

OSHA Z3. Table Z-3, Mineral Dust

Engineering measures

: Use of adequate ventilation should be sufficient to control worker exposure to airborne contaminants. If the use of this product generates dust, fumes, gas, vapor or mist, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure below any recommended or statutory limits.

**Personal protective equipment**

Respiratory protection	: Use a properly fitted NIOSH approved air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. The filter class for the respirator must be suitable for the maximum expected contaminant concentration (gas/vapor/aerosol/particulates) that may arise when handling the product. If this concentration is exceeded, self-contained breathing apparatus must be used.
Hand protection	
Remarks	: Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.
Eye protection	: Safety eyewear complying with an approved standard should be used when a risk assessment indicates this is necessary.
Skin and body protection	: Choose body protection in relation to its type, to the concentration and amount of dangerous substances, and to the specific work-place.
Hygiene measures	: Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product. Remove contaminated clothing and protective equipment before entering eating areas. Wash thoroughly after handling. Avoid breathing dust.

9. Physical and chemical properties

Appearance	: powder
Color	: gray
Odor	: odorless
Odor Threshold	: no data available
Flash point	: Note: not applicable
Ignition temperature	: no data available
Decomposition temperature	: no data available
Lower explosion limit (Vol%)	: no data available
Upper explosion limit (Vol%)	: no data available
Flammability (solid, gas)	: no data available
Oxidizing properties	: no data available
Autoignition temperature	: no data available



pH	: Note: not applicable
Melting point/range / Freezing point	: no data available
Boiling point/boiling range	: no data available
Vapor pressure	: no data available
Density	: ca.2.75 g/cm ³ at 73 °F (23 °C)
Water solubility	: Note: insoluble
Partition coefficient: n- octanol/water	: no data available
Viscosity, dynamic	: no data available
Viscosity, kinematic	: no data available
Relative vapor density	: no data available
Evaporation rate	: no data available
Burning rate	: no data available
Volatile organic compounds (VOC) content	: < 20 g/l A+B Combined

10. Stability and reactivity

Reactivity	: No dangerous reaction known under conditions of normal use.
Chemical stability	: The product is chemically stable.
Possibility of hazardous reactions	: Stable under recommended storage conditions.
Conditions to avoid	: no data available
Incompatible materials	: no data available

11. Toxicological information**Acute toxicity****Product**

Acute oral toxicity	: no data available
Acute inhalation toxicity	: no data available
Acute dermal toxicity	: no data available

**Skin corrosion/irritation****Product**

Causes skin irritation.

Serious eye damage/eye irritation**Product**

Causes serious eye damage.

Respiratory or skin sensitization**Product**

no data available

Germ cell mutagenicity**Product**

Mutagenicity : no data available

Carcinogenicity**Product**

Carcinogenicity : May cause cancer.

IARC

Group 1: Carcinogenic to humans

Quartz (SiO₂) 14808-60-7Quartz (SiO₂) <5µm 14808-60-7**NTP**

Known to be human carcinogen

Quartz (SiO₂) 14808-60-7Quartz (SiO₂) <5µm 14808-60-7**Reproductive Toxicity/Fertility****Product**

Reproductive toxicity : no data available

Reproductive Toxicity/Development/Teratogenicity**Product**

Teratogenicity : no data available

STOT-single exposure**Product**

Assessment: May cause respiratory irritation.

STOT-repeated exposure

Prolonged exposure can cause silicosis.

Product

Assessment: no data available



Aspiration toxicity

Product

no data available

12. Ecological information

Other information

Do not empty into drains; dispose of this material and its container in a safe way.

13. Disposal considerations

Disposal methods

Waste from residues : Disposal of this product, solutions and any by-products should at all times comply with the requirements of environmental protection and waste disposal legislation and any regional local authority requirements.

Contaminated packaging : Empty containers should be taken to an approved waste handling site for recycling or disposal.

14. Transport information

DOT

Not dangerous goods

IATA

Not dangerous goods

IMDG

Not dangerous goods

Special precautions for user

no data available

Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

not applicable

15. Regulatory information

TSCA list

: All chemical substances in this product are either listed on the TSCA Inventory or are in compliance with a TSCA Inventory exemption.

EPCRA - Emergency Planning and Community Right-to-Know

CERCLA Reportable Quantity

This material does not contain any components with a CERCLA RQ.

**SARA304 Reportable Quantity**

This material does not contain any components with a section 304 EHS RQ.

SARA 311/312 Hazards : Acute Health Hazard
Chronic Health Hazard

SARA 302 : SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 : SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

Clean Air Act

Ozone-Depletion Potential This product neither contains, nor was manufactured with a Class I or Class II ODS as defined by the U.S. Clean Air Act Section 602 (40 CFR 82, Subpt. A, App.A + B).

This product does not contain any hazardous air pollutants (HAP), as defined by the U.S. Clean Air Act Section 12 (40 CFR 61).

This product does not contain any chemicals listed under the U.S. Clean Air Act Section 112(r) for Accidental Release Prevention (40 CFR 68.130, Subpart F).

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

California Prop 65 WARNING! This product contains a chemical known in the State of California to cause cancer.
WARNING: This product contains a chemical known in the State of California to cause birth defects or other reproductive harm.

16. Other information**HMIS Classification**

Health	*	3
Flammability		0
Physical Hazard		0
Personal Protection		X

Caution: HMIS® rating is based on a 0-4 rating scale, with 0 representing minimal hazards or risks, and 4 representing significant hazards or risks. Although HMIS® rating is not required on SDSs under 29 CFR 1910.1200, the preparer may choose to provide them. HMIS® rating is to be used with a fully implemented HMIS® program. HMIS® is a registered mark of the National Paint & Coatings Association (NPCA). Please note HMIS® attempts to convey full health warning information to all employees.



Notes to Reader

The information contained in this Safety Data Sheet applies only to the actual Sika Corporation ("Sika") product identified and described herein. This information is not intended to address, nor does it address the use or application of the identified Sika product in combination with any other material, product or process. All of the information set forth herein is based on technical data regarding the identified product that Sika believes to be reliable as of the date hereof. Prior to each use of any Sika product, the user must always read and follow the warnings and instructions on the product's current Product Data Sheet, product label and Safety Data Sheet for each Sika product, which are available at web site and/or telephone number listed in Section 1 of this SDS.

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Revision Date 11/25/2013

Material number: 453758

U.S. SILICA COMPANY

SAFETY DATA SHEET

1. IDENTIFICATION

Product identifier: Silica Sand or Ground Silica; crystalline silica (quartz)

Product Name/Trade Names:

Sand and Ground Silica Sand (sold under various names: ASTM TESTING SANDS • GLASS SAND • FILPRO® • FLINT SILICA • DM-SERIES • F-SERIES • FOUNDRY SANDS • FJ-SERIES H-SERIES • L-SERIES • N-SERIES • NJ SERIES • OK-SERIES • P-SERIES • T-SERIES • hydraulic fracturing sand, all sizes • frac sand, all sizes • MIN-U-SIL® Fine Ground Silica • MYSTIC WHITE® • #1 DRY • #1 SPECIAL • PENN SAND® • PRO WHITE® • SILURIAN® • Q-ROK® • SIL-CO-SIL® Ground Silica • MICROSIL® • SUPERSIL® • MASON SAND • GS SERIES • PERSPEC • proppant, all sizes • SHALE FRAC® - SERIES • KOSSE WHITE® • OTTAWA WHITE® • OPTIJUMP® • LIGHTHOUSE™

Chemical Name or Synonym:

Crystalline Silica (Quartz), Sand, Silica Sand, Flint, Ground Silica, Fine Ground Silica, Silica Flour.

Recommended use of the chemical and restrictions on use: (non-exhaustive list): brick, ceramics, foundry castings, glass, grout, hydraulic fracturing sand, frac sand, proppant, mortar, paint and coatings, silicate chemistry, silicone rubber, thermoset plastics.

DO NOT USE U.S. SILICA COMPANY SAND OR GROUND SILICA FOR SAND BLASTING

Manufacturer:

U.S. Silica Company
8490 Progress Drive, Suite 300
Frederick, MD 21701
U.S.A.

Phone: 800-243-7500

Emergency Phone: 301-682-0600

Fax: 301-682-0690

2. HAZARD(S) IDENTIFICATION

Classification:

Physical	Health
Not Hazardous	Carcinogen Category 1A Specific Target Organ Toxicity – Repeated Exposure Category 1



DANGER

May cause cancer by inhalation.
Causes damage to lungs through prolonged or repeated exposure by inhalation.

Response:

If exposed or concerned: Get medical advice.

Disposal:

Dispose of contents/containers in accordance with local regulation

Prevention

Obtain special instructions before use.
Do not handle until all safety precautions have been read and understood.
Do not breathe dust.
Do not eat, drink or smoke when using this product.
Wear protective gloves and safety glasses or goggles.
In case of inadequate ventilation wear respiratory protection.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Component	CAS No.	Percent
Crystalline Silica (quartz)	14808-60-7	95-99.9

4. FIRST-AID MEASURES

Inhalation: First aid is not generally required. If irritation develops from breathing dust, move the person from the overexposure and seek medical attention if needed.

Skin contact: First aid is not required.

Eye contact: Wash immediately with plenty of water. Do not rub eyes. If irritation persists, seek medical attention.

Ingestion: First aid is not required.

Most important symptoms/effects, acute and delayed: Particulates may cause abrasive eye injury. Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath. Prolonged inhalation of respirable crystalline silica above certain concentrations may cause lung diseases, including silicosis and lung cancer.

Indication of immediate medical attention and special treatment, if necessary: Immediate medical attention is not required.

5. FIRE-FIGHTING MEASURES

Suitable (and unsuitable) extinguishing media: Use extinguishing media appropriate for surrounding fire.

Specific hazards arising from the chemical: Product is not flammable, combustible or explosive.

Special protective equipment and precautions for fire-fighters: None required.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment, and emergency procedures: Wear appropriate protective clothing and respiratory protection (see Section 8). Avoid generating airborne dust during clean-up.

Environmental precautions: No specific precautions. Report releases to regulatory authorities if required by local, state and federal regulations.

Methods and materials for containment and cleaning up: Avoid dry sweeping. Do not use compressed air to clean spilled sand or ground silica. Use water spraying/flushing or ventilated or HEPA filtered vacuum cleaning system, or wet before sweeping. Dispose of in closed containers.

7. HANDLING AND STORAGE

Precautions for safe handling:

Avoid generating dust. Do not breathe dust. Do not rely on your sight to determine if dust is in the air. Respirable crystalline silica dust may be in the air without a visible dust cloud. Use adequate exhaust

ventilation and dust collection to reduce respirable crystalline silica dust levels to below the permissible exposure limit ("PEL"). Maintain and test ventilation and dust collection equipment. Use all available work practices to control dust exposures, such as water sprays. Practice good housekeeping. Do not permit dust to collect on walls, floors, sills, ledges, machinery, or equipment. Keep airborne dust concentrations below permissible exposure limits.

Where necessary to reduce exposures below the PEL or other applicable limit (if lower than the PEL), wear a respirator approved for silica containing dust when using, handling, storing or disposing of this product or bag. See Section 8, for further information on respirators. Do not alter the respirator. Do not wear a tight-fitting respirator with facial hair such as a beard or mustache that prevents a good face to face piece seal between the respirator and face. Maintain, clean, and fit test respirators in accordance with applicable standards. Wash or vacuum clothing that has become dusty.

Participate in training, exposure monitoring, and health surveillance programs to monitor any potential adverse health effects that may be caused by breathing respirable crystalline silica. The OSHA Hazard Communication Standard, 29 CFR Sections 1910.1200, 1915.1200, 1917.28, 1918.90, 1926.59 and 1928.21, and state and local worker or community "right-to-know" laws and regulations should be strictly followed.

DO NOT USE U.S. SILICA COMPANY SAND OR GROUND SILICA FOR SAND BLASTING

Conditions for safe storage, including any incompatibilities: Use dust collection to trap dust produced during loading and unloading. Keep containers closed and store bags to avoid accidental tearing, breaking, or bursting.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure guidelines:

Component	OSHA PEL	ACGIH TLV	NIOSH REL
Crystalline Silica (quartz)	<u>10 mg/m³</u> %SiO ₂ + 2 TWA (respirable dust) <u>30 mg/m³</u> %SiO ₂ + 2 TWA (total dust)	0.025 mg/m ³ TWA (respirable dust)	0.05 mg/m ³ TWA (respirable dust)

If crystalline silica (quartz) is heated to more than 870°C, quartz can change to a form of crystalline silica known as tridymite; if crystalline silica (quartz) is heated to more than 1470°C, quartz can change to a form of crystalline silica known as cristobalite. The OSHA PEL for crystalline silica as tridymite or cristobalite is one-half of the OSHA PEL for crystalline silica (quartz).

Appropriate engineering controls: Use adequate general or local exhaust ventilation to maintain concentrations in the workplace below the applicable exposure limits listed above.

Respiratory protection: If it is not possible to reduce airborne exposure levels to below the OSHA PEL or other applicable limit with ventilation, use the table below to assist you in selecting respirators that will reduce personal exposures to below the OSHA PEL. This table is part of the NIOSH Respirator Selection Logic, 2004, Chapter III, Table 1, "Particulate Respirators". The full document can be found at www.cdc.gov/niosh/npptl/topics/respirators; the user of this MSDS is directed to that site for information concerning respirator selection and use. The assigned protection factor (APF) is the maximum anticipated level

of protection provided by each type of respirator worn in accordance with an adequate respiratory protection program. For example, an APF of 10 means that the respirator should reduce the airborne concentration of a particulate by a factor of 10, so that if the workplace concentration of a particulate was 150 ug/m3, then a respirator with an APF of 10 should reduce the concentration of particulate to 15 ug/m3. In using chemical cartridges, consideration must be given to selection of the correct cartridge for the chemical exposure and the maximum use concentration for the cartridge. In addition a cartridge change-out schedule must be developed based on the concentrations in the workplace.

Assigned protection factor ¹	Type of Respirator (Use only NIOSH-certified respirators)
10	Any air-purifying elastomeric half-mask respirator equipped with appropriate type of particulate filter. ² Appropriate filtering facepiece respirator. ^{2,3} Any air-purifying full facepiece respirator equipped with appropriate type of particulate filter. ² Any negative pressure (demand) supplied-air respirator equipped with a half-mask.
25	Any powered air-purifying respirator equipped with a hood or helmet and a high efficiency (HEPA) filter. Any continuous flow supplied-air respirator equipped with a hood or helmet.
50	Any air-purifying full facepiece respirator equipped with N-100, R-100, or P-100 filter(s). Any powered air-purifying respirator equipped with a tight-fitting facepiece (half or full facepiece) and a high-efficiency filter. Any negative pressure (demand) supplied-air respirator equipped with a full facepiece. Any continuous flow supplied-air respirator equipped with a tight-fitting facepiece (half or full facepiece). Any negative pressure (demand) self-contained respirator equipped with a full facepiece.
1,000	pressure-demand supplied-air respirator equipped with a half-mask.
<p>1. The protection offered by a given respirator is contingent upon (1) the respirator user adhering to complete program requirements (such as the ones required by OSHA in 29CFR1910.134), (2) the use of NIOSH-certified respirators in their approved configuration, and (3) individual fit testing to rule out those respirators that cannot achieve a good fit on individual workers.</p> <p>2. Appropriate means that the filter medium will provide protection against the particulate in question.</p> <p>3. An APF of 10 can only be achieved if the respirator is qualitatively or quantitatively fit tested on individual workers.</p>	

Skin protection: Maintain good industrial hygiene. Protection recommended for workers suffering from dermatitis or sensitive skin.

Eye protection: Safety glasses with side shields or goggles recommended if eye contact is anticipated.

Other: None known.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.): White or tan sand: granular, crushed or ground to a powder.

Odor: None.

Odor threshold: Not determined	pH: 6-8
Melting point/freezing point: 3110°F/1710°C	Boiling point/range: 4046°F/2230°C
Flash point: Not applicable	Evaporation rate: Not applicable
Flammable limits: LEL: Not applicable	UEL: Not applicable
Vapor pressure: Not applicable	Vapor density: Not applicable
Relative density: 2.65	Solubility(ies): Insoluble in water

Partition coefficient: n-octanol/water: Not applicable	Auto-ignition temperature: Not determined
Decomposition temperature: Not determined	Viscosity: Not applicable
Flammability (solid, gas): Not applicable	

10. STABILITY AND REACTIVITY

Reactivity: Not reactive under normal conditions of use.

Chemical stability: Stable

Possibility of hazardous reactions: Contact with powerful oxidizing agents, such as fluorine, chlorine trifluoride and oxygen difluoride, may cause fires.

Conditions to avoid: Avoid generation of dust in handling and use.

Incompatible materials: Powerful oxidizers such as fluorine, chlorine trifluoride, and oxygen difluoride and hydrofluoric acid.

Hazardous decomposition products: Silica will dissolve in hydrofluoric acid and produce a corrosive gas, silicon tetrafluoride.

11. TOXICOLOGICAL INFORMATION

Acute effects of exposure:

Inhalation: Inhalation of dust may cause respiratory tract irritation. Symptoms of exposure may include cough, sore throat, nasal congestion, sneezing, wheezing and shortness of breath.

Ingestion: Ingestion in an unlikely route of exposure. If dust is swallowed, it may irritate the mouth and throat.

Skin contact: No adverse effects are expected.

Eye contact: Particulates may cause abrasive injury.

Chronic effects: Prolonged inhalation of respirable crystalline silica may cause lung disease, silicosis, lung cancer and other effects as indicated below.

The method of exposure that can lead to the adverse health effects described below is inhalation.

A. SILICOSIS

Silicosis can exist in several forms, chronic (or ordinary), accelerated, or acute:

Chronic or Ordinary Silicosis is the most common form of silicosis, and can occur after many years (10 to 20 or more) of prolonged repeated inhalation of relatively low levels of airborne respirable crystalline silica dust. It is further defined as either simple or complicated silicosis. Simple silicosis is characterized by lung lesions (shown as radiographic opacities) less than 1 centimeter in diameter, primarily in the upper lung zones. Often, simple silicosis is not associated with symptoms, detectable changes in lung function or disability. Simple silicosis may be progressive and may develop into complicated silicosis or progressive massive fibrosis (PMF). Complicated silicosis or PMF is characterized by lung lesions (shown as radiographic opacities) greater than 1 centimeter in diameter. Complicated silicosis or PMF symptoms, if present, are shortness of breath and cough. Complicated silicosis or PMF may be associated with decreased lung function and may be disabling. Advanced complicated silicosis or PMF may lead to death. Advanced complicated silicosis or PMF can result in heart disease secondary to the lung disease (cor pulmonale).

Accelerated Silicosis can occur with prolonged repeated inhalation of high concentrations of respirable crystalline silica over a relatively short period; the lung lesions can appear within five (5) years of initial exposure. Progression can be rapid. Accelerated silicosis is similar to chronic or ordinary silicosis, except

that lung lesions appear earlier and progression is more rapid.

Acute Silicosis can occur after the repeated inhalation of very high concentrations of respirable crystalline silica over a short time period, sometimes as short as a few months. The symptoms of acute silicosis include progressive shortness of breath, fever, cough, weakness and weight loss. Acute silicosis is fatal.

B. CANCER

IARC - The International Agency for Research on Cancer ("IARC") concluded that "crystalline silica in the form of quartz or cristobalite dust is *carcinogenic to humans (Group 1)*". For further information on the IARC evaluation, see IARC Monographs on the Evaluation of Carcinogenic Risks to Humans, Volume 100C, "A Review of Human Carcinogens: Arsenic, Metals, Fibres and Dusts " (2011).

NTP classifies "Silica, Crystalline (respirable size)" as Known to be a human carcinogen.

C. AUTOIMMUNE DISEASES

Several studies have reported excess cases of several autoimmune disorders -- scleroderma, systemic lupus erythematosus, rheumatoid arthritis -- among silica-exposed workers.

D. TUBERCULOSIS

Individuals with silicosis are at increased risk to develop pulmonary tuberculosis, if exposed to tuberculosis bacteria. Individuals with chronic silicosis have a three-fold higher risk of contracting tuberculosis than similar individuals without silicosis.

E. KIDNEY DISEASE

Several studies have reported excess cases of kidney diseases, including end stage renal disease, among silica-exposed workers. For additional information on the subject, the following may be consulted: "Kidney Disease and Silicosis", *Nephron*, Volume 85, pp. 14-19 (2000).

F. NON-MALIGNANT RESPIRATORY DISEASES

The reader is referred to Section 3.5 of the NIOSH Special Hazard Review cited below for information concerning the association between exposure to crystalline silica and chronic bronchitis, emphysema and small airways disease. There are studies that disclose an association between dusts found in various mining occupations and non-malignant respiratory diseases, particularly among smokers. It is unclear whether the observed associations exist only with underlying silicosis, only among smokers, or result from exposure to mineral dusts generally (independent of the presence or absence of crystalline silica, or the level of crystalline silica in the dust).

Sources of information:

The *NIOSH Hazard Review - Occupational Effects of Occupational Exposure to Respirable Crystalline Silica* published in April 2002 summarizes and discusses the medical and epidemiological literature on the health risks and diseases associated with occupational exposures to respirable crystalline silica. The *NIOSH Hazard Review* is available from NIOSH - Publications Dissemination, 4676 Columbia Parkway, Cincinnati, OH 45226, or through the NIOSH web site, www.cdc.gov/niosh/topics/silica, then click on the link "NIOSH Hazard Review: Health Effects of Occupational Exposure to Respirable Crystalline Silica".

For a more recent review of the health effects of respirable crystalline silica, the reader may consult *Fishman's Pulmonary Diseases and Disorders*, Fourth Edition, Chapter 57. "Coal Workers' Lung Diseases and Silicosis".

Finally, the US Occupational Safety and Health Administration (OSHA) published a summary of respirable crystalline silica health effects in connection with OSHA's Proposed Rule regarding occupational exposure to

respirable crystalline silica. The summary was published in the September 12, 2013 Federal Register, which can be found at www.federalregister.gov/articles/2013/09/12/2013-20997/occupational-exposure-to-respirable-crystalline-silica.

Numerical measures of toxicity:

Crystalline Silica (quartz): LD50 oral rat >22,500 mg/kg

12. ECOLOGICAL INFORMATION

Ecotoxicity: Crystalline silica (quartz) is not known to be ecotoxic.

Persistence and degradability: Silica is not degradable.

Bioaccumulative potential: Silica is not bioaccumulative.

Mobility in soil: Silica is not mobile in soil.

Other adverse effects: No data available

13. DISPOSAL CONSIDERATIONS

Discard any product, residue, disposable container or liner in full compliance with national regulations.

14. TRANSPORT INFORMATION

UN number: None

UN proper shipping name: Not regulated

Transport hazard classes(es): None

Packing group, if applicable: None

Environmental hazards: None

Transport in bulk (according to Annex II of MARPOL 73/78 and the IBC Code): Not determined

Special precautions: None known.

15. REGULATORY INFORMATION

UNITED STATES (FEDERAL AND STATE)

TSCA Status: Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7.

RCRA: This product is not classified as a hazardous waste under the Resource Conservation and Recovery Act, or its regulations, 40 CFR §261 et seq.

CERCLA: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response Compensation and Liability Act (CERCLA), 40 CFR §302.

Emergency Planning and Community Right to Know Act (SARA Title III): This product contains the following chemicals subject to SARA 302 or SARA 313 reporting: None above the de minimus concentrations.

Clean Air Act: Crystalline silica (quartz) mined and processed by U.S. Silica Company is not processed with or does not contain any Class I or Class II ozone depleting substances.

FDA: Silica is included in the list of substances that may be included in coatings used in food contact surfaces, 21 CFR §175.300(b)(3)(xxvi).

California Proposition 65: Crystalline silica (airborne particles of respirable size) is classified as a substance known to the State of California to be a carcinogen.

California Inhalation Reference Exposure Level (REL): California established a chronic non-cancer effect REL of 3 µg for silica (crystalline, respirable). A chronic REL is an airborne level of a substance at or below which no non-cancer health effects are anticipated in individuals indefinitely exposed to the substance at that level.

Massachusetts Toxic Use Reduction Act: Silica, crystalline (respirable size, <10 microns) is “toxic” for purposes of the Massachusetts Toxic Use Reduction Act.

Pennsylvania Worker and Community Right to Know Act: Quartz is a hazardous substance under the Act, but it is not a special hazardous substance or an environmental hazardous substance.

Texas Commission on Environmental Quality: The Texas CEQ has established chronic and acute Reference Values and short term and long term Effects Screening Levels for crystalline silica (quartz). The information can be accessed through www.tceq.texas.gov.

CANADA

Domestic Substances List: U. S. Silica Company products, as naturally occurring substances, are on the Canadian DSL.

WHMIS Classification: D2A

OTHER NATIONAL INVENTORIES

Australian Inventory of Chemical Substances (AICS): All of the components of this product are listed on the AICS inventory or exempt from notification requirements.

China: Silica is listed on the IECSC inventory or exempt from notification requirements.

Japan Ministry of International Trade and Industry (MITI): All of the components of this product are existing chemical substances as defined in the Chemical Substance Control Law Registry Number 1-548.

Korea Existing Chemicals Inventory (KECI) (set up under the Toxic Chemical Control Law): Listed on the ECL with registry number 9212-5667.

New Zealand: Silica is listed on the HSNO inventory or exempt from notification requirements.

Philippines Inventory of Chemicals and Chemical Substances (PICCS): Listed for PICCS.

Taiwan: Silica is listed on the CSNN inventory or exempt from notification requirements.

16. OTHER INFORMATION

Date of preparation/revision: February 10, 2015

Hazardous Material Information System (HMIS):

Health *

Flammability 0

Physical Hazard 0

Protective Equipment E

* For further information on health effects, see Sections 2, 8 and 11 of this MSDS.

National Fire Protection Association (NFPA):

Health 0

Flammability 0

Instability 0

Web Sites with Information about Effects of Crystalline Silica Exposure:

The U. S. Silica Company web site will provide updated links to OSHA and NIOSH web sites addressing crystalline silica issues: www.ussilica.com, click on "Info Center", then click on "Health & Safety".

The U.S. National Institute for Occupational Safety and Health (NIOSH) and Occupational Safety and Health Administration (OSHA) maintain sites with information about crystalline silica and its potential health effects. For NIOSH, <http://www.cdc.gov/niosh/topics/silica>; for OSHA, <http://www.osha.gov/dsg/topics/silicacrystalline/index>.

The IARC Monograph that includes crystalline silica, Volume 100C, can be accessed in PDF form at the IARC web site, <http://monographs.iarc.fr/ENG/Monographs/PDFs/index.php>.

U. S. Silica Company Disclaimer

The information and recommendations contained herein are based upon data believed to be up to-date and correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects that may be caused by purchase, resale, use or exposure to our silica. Customers and users of silica must comply with all applicable health and safety laws, regulations, and orders. In particular, they are under an obligation to carry out a risk assessment for the particular work places and to take adequate risk management measures in accordance with the national implementation legislation of EU Directives 89/391 and 98/24.



SAFETY DATA SHEET

(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)

SODIUM GLUCONATE

Section 1: Identification of the substance/mixture and of the company/undertaking

1.1. Product Identifier

Product Name:	Sodium Gluconate
REACH Registered Name:	Sodium Gluconate
REACH registered number:	Exemption under Annex V
CAS #:	527-07-1
EC#	208-407-7
Product Code:	71111, 71112, 71115, 71120
Synonyms:	Sodium Salt of gluconic acid, Sodium 2,3,4,5,6, pentahydroxy-hexanoate
INCI Name:	Sodium Gluconate

1.2. Relevant Identified Uses of the Substance/Mixture and Uses Advised Against

Chelating agent in foods, cleaning applications, electroplating, concrete admixtures

1.3. Details of the Supplier of the Safety Data Sheet

Company Name:	PMP Fermentation Products, Inc. 900 NE Adams Street Peoria, Illinois 61603, USA	
Telephone:	1-309-637-0400	8 am – 4 pm CST M-F
Fax:	1-309-637-9302	
E mail:	sales@pmpinc.com	

1.4. Emergency Contact

Chemtrec: 1-(800) 424-9300

Section 2: Hazards Identification

2.1. Classification of the Substance or Mixture

Classification under CLP: This product has no classification under CLP

2.2. Label Elements

Label elements: This product has no label elements



SAFETY DATA SHEET
(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)
SODIUM GLUCONATE

2.3. Other Hazards

PBT: This product is not identified as a PBT substance

Section 3: Composition/Information on Ingredients

3.1. Substances

Chemical Identity: Sodium Gluconate

Section 4: First Aid Measures

4.1. Description of First Aid Measures

- Skin: Wash thoroughly with soap and water.
- Eyes: Flush immediately with water or physiological saline for 15 minutes. Get prompt medical attention.
- Ingestion: Get medical attention if adverse effects occur.
- Inhalation: If adverse effects occur, get medical attention.

4.2. Most Important Symptoms and Effects, Both Acute and Delayed

- Skin: May cause irritation and redness for susceptible individuals.
- Eyes: May cause mild irritation. Eyes may water profusely.
- Ingestion: May cause irritation if large amounts are swallowed. Nausea and stomach pain may occur. There may be vomiting and diarrhea.
- Inhalation: May cause respiratory irritation in susceptible individuals. May cause shortness of breath, sneezing and coughing.
- Delayed/Immediate effects: Long-term inhalation of excessive dust may cause delayed lung injury.

4.3. Indication of Any Immediate Medical Attention and Special Treatment Need

Immediate/Special Treatment: Eye wash stations should be available



SAFETY DATA SHEET
(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)
SODIUM GLUCONATE

Section 5: Fire Fighting Measures

5.1. Extinguishing Media

Extinguishing Media: Water, carbon dioxide, foam, halogen

5.2. Special Hazards Arising from the Substance or Mixture

Exposure Hazards: In combustion, emits toxic fumes of carbon dioxide/carbon monoxide. Dust in air can be an explosion hazard.

5.3. Advice for Fire Fighters

Advice for Fire Fighters: Wear self-contained breathing apparatus. Wear protective clothing to prevent contact with skin and eyes.

Section 6: Accidental Release Measures

6.1. Personal Precautions, Protective Equipment and Emergency Procedures

Personal Precautions: Wear suitable protective clothing. Refer to section 8. Do not create dust.

6.2. Environmental Precautions

Environmental Precautions: Do not discharge into drains or rivers.

6.3. Methods and Material for Containment and Cleaning up

Clean-Up Procedures: Collect as much as possible for use or disposal in a properly labeled container. Flush remainder into normal drainage with copious amounts of water.

6.4. Reference to Other Sections

Reference to Other Sections: Refer to sections 8 and 13



SAFETY DATA SHEET
(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)
SODIUM GLUCONATE

Section 7: Handling and Storage

7.1. Precautions for Safe Handling

Handling Requirements: Wear suitable protective clothing. Ensure there is sufficient ventilation in the area. Avoid generating dust.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Store in a cool, well-ventilated area. Keep away from direct sunlight. Avoid contact with water and humidity.

Suitable Packaging: Paper, plastic or poly lined bags or drums.

7.3. Specific End Use(s)

Specific End Use(s): No special requirement

Section 8: Exposure Controls/Personal Protection

8.1. Control Parameters

Workplace Exposure Limits:

Respirable Dust

State	8 hour TWA	15 min. STEL	8 hour TWA	15 min. STEL
UK	-	-	4 mg/m ³	-
USA			5 mg/m ³	

8.2. Exposure Controls

Engineering measures:	Provide sufficient ventilation of the area
Respiratory protection:	Respirator with particle filter
Hand protection:	Protective gloves
Eye protection:	Safety goggles. Provide eye wash stations
Skin protection:	Protective clothing. Provide safety shower
Environmental:	No special requirement



SAFETY DATA SHEET

(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)

SODIUM GLUCONATE

Section 9: Physical and Chemical Properties

9.1. Information on Basic Physical and Chemical Properties

State:	Granular powder
Color:	White to tan
Odor:	Odorless
pH:	6.8 – 7.2 (10% aq. Solution)
Melting Point/Range:	192 – 202°C
Boiling Point:	Not applicable
Flash Point:	Not applicable
Evaporation Rate:	Not applicable
Flammability:	Not applicable
Upper Explosion Limit:	Not applicable
Lower Explosion Limit:	Not applicable
Vapor Pressure:	7.23×10^{-18} mmHg/ 1×10^{-18} kPa @ 25°C
Vapor Density:	unknown
Relative Density:	945 kg/m ³ granular; 705 kg/m ³ powder
Solubility in Water:	Highly soluble, 5.9×10^5 mg/L @ 25°C
Auto-Ignition Temperature:	Not applicable
Decomposition Temperature:	> 210°C
Viscosity:	Not applicable
Oxidizing:	Non-oxidizing
Molecular Weight:	218.13

9.2. Other Information

Other Information: Not applicable

Section 10: Stability and Reactivity

10.1. Reactivity

Reactivity: Stable under recommended transport and storage conditions

10.2. Chemical Stability

Chemical Stability: Stable under normal conditions

10.3. Possibility of Hazardous Reactions

Hazardous Reactions: Hazardous reactions will not occur under normal conditions



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(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)
SODIUM GLUCONATE

10.4. Conditions to Avoid

Conditions to Avoid: Direct sunlight, moist air and humidity

10.5. Incompatible Materials

Materials to Avoid: Strong Oxidizers

10.6. Hazardous Decomposition Products

Hazardous Decomposition Products: In combustion, emits toxic fumes of carbon dioxide/carbon monoxide.

Section 11: Toxicological Information

11.1. Information of Toxicological Effects

Toxicity Values:

Route	Species	Test	Value	Units
Oral	Rat	LD50	>2000	mg/kg
Intravenous	Rabbit	LD50	7630	mg/kg

Symptoms/Routes of Exposure

Skin Contact: May cause irritation and redness for susceptible individuals.

Eyes: May cause mild irritation. Eyes may water profusely.

Ingestion: May cause irritation if large amounts are swallowed. Nausea and stomach pain may occur. There may be vomiting and diarrhea.

Inhalation: May cause respiratory irritation in susceptible individuals. May cause shortness of breath, sneezing and coughing.

Delayed/Immediate effects: Long-term inhalation of excessive dust may cause delayed lung injury.

Carcinogenicity:	Not applicable
Mutagenicity:	Not applicable
Teratogenicity:	Not applicable
Reproductive Toxicity:	Not applicable



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(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)

SODIUM GLUCONATE

Section 12: Ecological Information

12.1. Toxicity

Ecotoxicity Values:

Species	Test	Value	Units
Fish	96H LC50	> 1000.0	mg/L
Daphnid	48H LC50	> 1000.0	mg/L
Green Algal	96H EC50	> 1000.0	mg/L
Fish	ChV*	> 100.0	mg/L
Daphnid	ChV	> 100.0	mg/L
Algal	ChV	> 100.0	mg/L
Bacteria	EC50	> 5000.0	mg/L

- Chronic Value

12.2. Persistence and Degradability

Persistence and Degradability: Readily and rapidly biodegradable

12.3. Bioaccumulative Potential

Bioaccumulative Potential: Product does not bioaccumulate

12.4. Mobility in Soil

Mobility: Soluble in water

12.5. Results of PBT and vPvB Assessment

PBT Identification: This substance is not identified as a PBT substance.

12.6. Other Adverse Effects

Other Adverse Effects: Not expected to cause significant environmental impact.

Section 13: Disposal Considerations

13.1. Waste Treatment Methods

Disposal Operations: In accordance with applicable regulations. Normally can be flushed down sewers.



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(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)

SODIUM GLUCONATE

Recovery Operations: No information available
Disposal of Packaging: Contaminated containers must not be treated as household waste. Where practical, containers and packaging should be recycled by a licensed contractor.

Section 14: Transport Information

Transport Class: This product does not require a classification for transport. This product is not dangerous, not hazardous, and not restricted for transport by air

Section 15: Regulatory Information

15.1. Safety, Health and Environmental Regulations/Legislation Specific for the Substance/Mixture

Specific Regulations: Exemption from registration under REACH in accordance with Annex V. Commission Decision 96/335/EC establishing an inventory and a common nomenclature of ingredients employed in cosmetic products (INCI). Council Directive 76/768/EEC on the approximation of the laws of Member States relating to cosmetic products. Regulation (EC) No 1223/2009 of the European Parliament and of the Council on cosmetic products.

Directive 96/82/EC does not apply

Europe Risk Phrases *not classified in Europe*

Europe Safety Phrases *not classified in Europe*

15.2. Chemical Safety Assessment

Chemical Safety Assessment: A chemical safety assessment has not been carried out for the substance or the mixture by the supplier.



SAFETY DATA SHEET

(REACH Regulation (EC) N° 1907/2006 – N° 453/2010)

SODIUM GLUCONATE

Section 16: Other Information

Other Information: This safety data sheet is prepared in accordance with Commission Regulation (EU) No 453/2010

There are no exposure levels set for the specific product. The following levels should be adhered to based on US regulations:

Total inhalable dust (8 hour TWA): 15 mg/m³

Legal Disclaimer: The information herein has been compiled from sources believed to be reliable and is accurate to the best of our knowledge. However, PMP Fermentation Products, Inc. cannot give any guarantees regarding information from other sources, and expressly does not make any warranties, nor assumes any liability, for its use.

Revision Date: 11/07/14

IRWIN Chalk – Crimson Red, Permanent Staining

October 23, 2013

Revision 1

1. PRODUCT and COMPANY IDENTIFICATION

Commercial Product Name: IRWIN Chalk – Crimson Red, Permanent Staining

Company: IRWIN Tools

Use of product: Snap line, mark

Emergency contact: 1-800-464-7946 8:00am-5:00pm Monday-Friday

2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW: Non-combustible red solid powder with no odor. Irritating to eyes, skin, and respiratory system. Exposure to large quantities of this material may cause acute irritation of eyes and difficulty breathing.

OSHA GHS Hazard Statements (Warning Label)

DANGER – May cause cancer (lung) (Category 1A)

Hazard Ratings:

Hazardous Material Identification System (HMIS):

Health 1*, Flammability 0, Reactivity 0 *chronic effects

National Fire Protection Association (NFPA):

Health 1, Flammability 0, Reactivity 0

Eye: May cause irritation. Chalk dust is discomforting and abrasive to the eyes.

Skin: Prolonged skin contact may cause irritation. When the product is used as intended, it is unlikely to cause discomfort.

Ingestion: Ingestion of large amounts may cause gastrointestinal irritation. Ingestion is considered an unlikely route of entry in commercial or industrial environments.

Inhalation: Dust may be discomforting to the upper respiratory tract and lungs. Considered a low risk hazard when the product is used as intended.

Chronic: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the product is used as intended, dust levels should not exceed exposure limits. See Sections 8 and 11.



Obtain special instructions before use. May cause cancer by inhalation. Avoid breathing dust or fume. Causes serious eye irritation. Causes mild skin irritation. Do not handle until all safety precautions have been read and understood. Wear protective gloves and eye protection.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Substance name	Value (%)	CAS No.	EC No.
Red iron oxide-pigment red 101	78-82	1309-37-1	215-570-8
Talc ¹	18-22	14807-96-6	238-877-9
Silica (crystalline quartz) ¹	0.1 - 1	14808-60-7	238-878-4

¹ Talc may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

SAFETY DATA SHEET

IRWIN Chalk – Crimson Red, Permanent

4. FIRST AID MEASURES

Inhalation: Remove from exposure and move to fresh air immediately. Encourage the patient to blow nose to ensure clear breathing passages. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid if cough or other symptoms appear.

Skin contact: Wet clothing first to minimize dust generation, then; remove contaminated clothing and shoes. Launder contaminated clothing before wearing again. Wash affected area with water (and soap if available) Get medical aid in the event of irritation.

Eye contact: Do not rub eyes, rubbing may cause abrasions. Flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid.

Ingestion: Wash mouth out with plenty of water. If the victim is conscious and alert, give 2-4 cupfuls of milk or water. Do not induce vomiting unless directed to do so by medical personnel. Get medical aid immediately.

Additional advice: Show this safety data sheet to the doctor in attendance

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media: Substance is noncombustible.

Explosion: No information found.

Specific hazards: Not considered to be a significant fire risk, however; the containers may burn, releasing carbon monoxide, and carbon dioxide.

Special protective equipment for Firefighters: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions: Wear appropriate personal protective equipment as specified in Section 8.

Environmental precautions: Do not allow this material to be released to the environment without proper governmental permits.

Methods for cleaning up: Recover the product whenever possible. Avoid generating dust when sweeping/shoveling up. If required, wet the material with water to prevent creating dust. Pick up and place in a suitable container for reclamation or disposal. Follow applicable OSHA regulations (29 CFR 1910.120)

7. HANDLING AND STORAGE

Storage: Store this product in a tightly-closed container in a dry, well-ventilated area away from incompatible substances.

Handling: Avoid creating, or breathing dust. Practice good personal hygiene, (hand washing, etc.) after using this product. Avoid contact with skin and eyes.

Packaging material: No information found.

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IRWIN Chalk – Crimson Red, Permanent

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Exposure Guidelines

Component	CAS No.	% by weight	Exposure Limit 8-Hour TWA ¹ (mg/m ³)		
			OSHA PEL	ACGIH TLV	NIOSH REL
Talc ⁴	14807-96-6	18-22	10 ^{2,5} , 3.3 ^{3,5}	2 ³	2 ³
Red iron oxide - pigment red 101	1309-37-1	78-82	10 ³	5 ³	5
Silica-Crystalline Quartz ⁴	14808-60-7	0.1-1.0	10 ^{2,5} , 3.3 ^{3,5}	0.05 ³	0.05 ³

¹ TWA = Time-weighted average

² Total dust.

³ Respirable dust.

⁴ Talc may contain crystalline silica at levels between 0.1 and 1.0 % and varies naturally.

⁵ Using the OSHA quartz formula, this PEL was calculated assuming crystalline silica content of 1.0% in this ingredient.

Exposure and Engineering Controls: Facilities storing or utilizing this material should have potable water available for washing eyes and skin. Use sufficient general area (or outdoor) ventilation. Local exhaust ventilation should be used if airborne concentrations of dust exceed limits cited in Section 8.

Personal protective equipment:

Hand protection: Wear protective gloves

Eye protection: Wear safety glasses, or chemical goggles in windy conditions or where eye contact is possible.

Respiratory protection: When engineering controls are not sufficient to reduce exposure, seek professional advice prior to respirator selection and use. Follow the OSHA respirator regulations found in 29CFR 1910.134 or European Standard EN 149. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Hygiene measures: Wash contaminated clothing before reuse.

Environmental exposure controls: No information found.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Powder
Color:	Red
Odor:	Odorless.
pH (at 10% solids):	No data available.
Boiling point/range:	No data available.
Melting point/range:	2,849 °F (1,565°C).
Flash point:	No data available.
Evaporation rate:	No data available.
Vapor density:	No data available.
Solubility in water:	<0.0002 (Trace)
Explosive properties:	No data available.
Oxidizing properties:	No data available.
Vapor pressure:	No data available.
Relative density (H ₂ O=1):	4.5.
Viscosity:	No data available.
Partition coefficient (n-octanol/water):	No data available.

SAFETY DATA SHEET

IRWIN Chalk – Crimson Red, Permanent

10. STABILITY AND REACTIVITY

Stability: Stable under normal temperatures and pressures.

Hazardous decomposition products: Carbon monoxide, carbon dioxide, calcium oxide.

Materials to avoid: Hydrazine, calcium hypochlorite, performic acid, and bromine pentafluoride.

Conditions to avoid: Incompatible materials.

Hazardous Polymerization: Does not occur.

11. TOXICOLOGICAL INFORMATION

Note: Toxicological effects described in this section are those that would be expected based on data from the components of this product.

Acute toxicity: No data reported.

Inhalation: (Silica, crystalline quartz) Human: LC_{Lo}: 300 µg/m³/ intermittent exposure over a 10-year period produced pulmonary system effects.

Skin contact: (Talc) Human: 0.3mg administered intermittently for 3 days produced mild skin irritation.

Eye contact: No data reported.

Ingestion: (Iron oxide) Rat: LD₅₀: >5,000 mg/kg.

Chronic toxicity/Carcinogenicity: Repeated and prolonged inhalation exposure to crystalline silica dust above exposure limits may cause delayed, chronic lung injury (silicosis). When the product is used as intended, dust levels should not exceed exposure limits.

Quartz – crystalline silica:

The International Agency for Research on Cancer (IARC) has designated this substance Group 1, "carcinogenic to humans".

The National Toxicology Program (NTP) has designated this substance: Group K "known to be a human carcinogen"

American Conference of Governmental Industrial Hygienists (ACGIH) has designated this substance A2; suspected human carcinogen. The agent is carcinogenic in experimental animals at dose levels, by route of administration, at sites of histologic type(s) or by mechanism(s) considered relevant to worker exposure. Available epidemiologic studies are conflicting or insufficient to confirm an increased risk of cancer in exposed humans.

12. ECOLOGICAL INFORMATION

Bioaccumulation: No information found.

Aquatic toxicity (fish): *Leuciscus idus* (Golden Orfe) LCo: >1,000 mg/liter

13. DISPOSAL CONSIDERATIONS

Waste from residues of this product is not a hazardous waste according to U.S. Environmental Protection Agency (EPA) regulations. Disposal by landfill may be acceptable.

Consult an expert on the disposal of recovered material for compliance with state, provincial, and/or local regulations.

14. TRANSPORT INFORMATION

U.S. DOT: Not regulated

SAFETY DATA SHEET

IRWIN Chalk – Crimson Red, Permanent

ADR/RID: Not regulated

IMDG: Not regulated

ICAO/IATA: Not regulated

15. REGULATORY INFORMATION

U.S. Federal Regulations

OSHA: Ingredients are listed as air contaminants (29 CFR 1910.1000).

Hazardous by definition of Hazard Communication Standard (29 CFR 1910.1200).

TSCA (Toxic Substance Control Act): All components of this product are listed on the TSCA inventory.

CERCLA: Hazardous Substance, (40 CFR 302.4): Not Listed.
Extremely Hazardous Substance (40 CFR 355): Not Listed.

SARA Hazard Category: This product has been reviewed according to the EPA "Hazard Categories" promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 (SARA Title III) and is considered, under applicable definitions, to meet the following category:

"An immediate (acute) and chronic health hazard."

Chemicals subject to the reporting requirements of Section 313 or Title III of SARA and 40 CFR Part 372: None.

STATE REGULATIONS:

California's "Safe Drinking Water and Toxic Enforcement Act of 1986" (Proposition 65)

This product contains the following Proposition 65 regulated materials known to the State of California to cause cancer or reproductive harm. The listed typical amounts are a result of their natural presence in the raw materials from which this product is produced.

Silica-crystalline quartz	equal to, or less than 1.0 percent
---------------------------	------------------------------------

CANADA WHIMS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulation (CPR), and the SDS contains all of the information required by the CPR.

WHIMS Classification: D2A

16. OTHER INFORMATION

The contents and format of this SDS are in accordance with the U.S. Hazard Communication Standard 29 CFR 1910.1200; the Canadian CPR, and Workplace Hazardous Materials Information System (WHMIS); and EEC Commission Directive 1999/45/EC, and EEC Commission Regulation 1907/2006/EC (REACH) Annex II.

DISCLAIMER OF LIABILITY The information in this SDS was obtained from sources which we believe are reliable. However, the information is provided without any warranty, express or implied, regarding its correctness. The conditions or methods of handling, storage, use or

SAFETY DATA SHEET

IRWIN Chalk – Crimson Red, Permanent

disposal of the product are beyond our control and may be beyond our knowledge. For this and other reasons, we do not assume responsibility and expressly disclaim liability for loss, damage or expense arising out of or in any way connected with the handling, storage, use or disposal of the product. This SDS was prepared and is to be used only for this product. If the product is used as a component in another product, this SDS information may not be applicable.

End of document



Safety Data Sheet

Date Revised: 9/2/2015

Supersedes: 5/21/2015

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

Product Name(s): **Five Star Structural Concrete®**
Five Star Structural Concrete® V/O
Five Star Structural Concrete® Gunitite
Five Star Structural Concrete® UW PG
Five Star Structural Concrete® ES
Five Star® Instant Grout

Synonyms: SC, IG

Product Use: High early strength, single component, permanent concrete repair material.

Restrictions on Use: N/A

Manufacturer/Supplier: Five Star Products, Inc.
60 Parrott Drive
Shelton, CT 06484 USA

Phone #: 203-336-7900

Emergency Phone #: **CHEM-TEL 1-800-255-3924**
(Outside the U.S. 1-813-248-0585)

SECTION 2: HAZARD(S) IDENTIFICATION-GHS INFORMATION

Classification: Acute Oral Toxicity – Category 4
Skin Corrosion/Irritation – Category 2
Acute Toxicity – Dermal, Category 2
Eye Damage/Irritation – Category 1
Sensitization – Respiratory, Category 1
Carcinogenicity – Category 1A
Specific Target Organ Systemic Toxicity (Single Exposure) – Cat 3
Specific Target Organ Toxicity (Repeated Exposure) – Cat 2

Label Elements/Hazard Pictograms:



Signal Word: Danger

Hazard Statements: Harmful if swallowed H302
May cause skin irritation H317
Causes severe skin burns and eye damage H314
May cause respiratory irritation H335
May cause an allergic skin reaction H317



Safety Data Sheet

Date Revised: 9/2/2015

Supersedes: 5/21/2015

Precautionary Statements/Prevention:

May cause cancer by inhalation H350

May cause damage to organs through prolonged or repeat exposure H373

Do not breathe dust, fume, gas, mist, vapors, or spray, P260.

Wash thoroughly after handling, P264.

Do not eat, drink or smoke when using this product, P270.

Contaminated work clothing should not be allowed out of the workplace, P272.

Wear protective gloves, protective clothing, eye protection and face protection, P280.

Wear respiratory protection, P284.

Response:

If swallowed: Rinse mouth. Do NOT induce vomiting, P330, P331.

If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower, P361, P353.

If inhaled: Remove person to fresh air and keep comfortable for breathing, P340.

If in eyes: Rinse cautiously with water for several minutes, P351. Remove contact lenses, if present and easy to do. Continue rinsing, P338.

Immediately call a poison center or doctor, P310.

If skin irritation or rash occurs, P333: Get medical advice/attention, P313.

If experiencing respiratory symptoms, P342: Call a poison center or doctor, P310. Wash contaminated clothing before reuse, P363.

Storage:

Store locked up.

Disposal:

Dispose of contents/container in accordance with applicable regional, national, and local laws and regulations.

Hazards Not Otherwise Classified:

Not applicable

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Ingredient(s)	Common Name/Synonyms	CAS No.	% wt/wt
Portland Cement	Hydraulic cement	65997-15-1	30-60
Blended Hydraulic Cement	n/a	TS	30-60
Quartz	Silicon Dioxide, Silica Sand	14808-60-7	40-60

SECTION 4: FIRST AID MEASURES



Safety Data Sheet

Date Revised: 9/2/2015

Supersedes: 5/21/2015

Inhalation:	If inhaled: Remove person to fresh air and keep comfortable for breathing.
Eye Contact:	If experiencing respiratory symptoms call poison center or doctor. If in eyes: Rinse cautiously with water for at least 30 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor.
Skin Contact:	If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower for at least 15 minutes. Immediately call a poison center or doctor if irritation develops. Wash contaminated clothing before reuse.
Ingestion:	If swallowed: Rinse mouth. Do NOT induce vomiting. Immediately call a poison center or doctor. If vomiting occurs naturally, have victim lean forward to reduce the risk of aspiration. Never give anything by mouth to an unconscious person.
General Advice:	In case of accident or if you feel unwell, seek medical advice immediately (show the label or SDS where possible).
Note to Physicians:	Symptoms may not appear immediately. Treat symptomatically.

SECTION 5: FIRE-FIGHTING MEASURES

Flammability and Explosion Information:	Not flammable or combustible by OSHA/WHMIS criteria.
Sensitivity to Mechanical Impact:	This material is not sensitive to mechanical impact.
Sensitivity to Static Discharge:	This material is sensitive to static discharge at temperatures at or above the flash point.
MEANS OF EXTINCTION	
Suitable Extinguishing Media:	Small Fire: Dry chemical, CO ₂ , or water spray. Large Fire: Dry chemical, CO ₂ , alcohol-resistant foam or water spray. Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material.
Unsuitable Extinguishing Media:	Not available
Product of Combustion:	Non-combustible
Protection of Firefighters:	As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Emergency Procedures:	Use personal protective equipment. Ensure adequate ventilation. Keep people from spill. Avoid dust formation.
Personal Precautions:	Avoid inhalation of dust. Do not get into eyes, on skin, or clothing.



Safety Data Sheet

Date Revised: 9/2/2015

Supersedes: 5/21/2015

Environmental Precautions:	The environmental impact of this product has not been fully investigated.
Methods for Containment:	Cover powder spill with plastic sheet or tarp to minimize spreading. Collect this material into a disposal container by sucking or sweeping up.
Methods for Cleanup:	Pick up and transfer to properly labeled containers.
Other Information:	See Section 13 for disposal considerations.

SECTION 7: HANDLING AND STORAGE

Handling:	Wear personal protective equipment. Ensure adequate ventilation. Avoid dust formation. Do not breathe dust. Prevent contact with skin, eyes, and clothing. Wash thoroughly after handling.
Storage:	Keep containers tightly closed in a cool, dry, and well-ventilated place. Store locked up.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Exposure Guidelines

Component	CAS No.	ACGIH TLV	OSHA PEL
Portland cement	65997-15-1	TWA: 1mg/m ³ particulate matter containing no asbestos and <1% crystalline silica, respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction TWA: 50 mppcf <1% Crystalline silica
Blended Hydraulic Cement	TS	TWA: 1mg/m ³ particulate matter containing no asbestos and <1% crystalline silica, respirable fraction	TWA: 15 mg/m ³ total dust TWA: 5 mg/m ³ respirable fraction (vacated) TWA: 10 mg/m ³ total dust (vacated) TWA: 5 mg/m ³ respirable fraction TWA: 50 mppcf <1% Crystalline silica
Quartz	14808-60-7	TWA: 0.025mg/m ³ respirable fraction	30/(%SiO ₂ +2) mg/m ³ TWA, Total Dust;250/(%SiO ₂ +5) mppcf TWA, respirable fraction; 10/(%SiO ₂ +2) mg/m ³ TWA, respirable TWA: 0.1 mg/m ³ (vacated)

PEL: Permissible Exposure Limit TLV: Threshold Limit Value



Safety Data Sheet

Date Revised: 9/2/2015

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Engineering Controls: Not normally required.

PERSONAL PROTECTIVE EQUIPMENT (PPE)

Eye/Face Protection: Tightly fitting safety goggles

Hand Protection: Impervious gloves. Impervious clothing.

Skin and Body Protection: Impervious gloves. Impervious clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, NIOSH/MSHA approved respiratory protection should be worn. Positive-pressure supplied air respirators may be required for high airborne contaminant concentrations. Respiratory protection must be provided in accordance with current local regulations.

General Hygiene Considerations: Handle according to established industrial hygiene and safety practices.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES	
Appearance:	Solid powder
Color:	Gray, tan, brown
Odor:	Mild
Odor Threshold:	n/a
Physical State:	Solid, powder
pH:	Approximately 12 when mixed with water.
Melting Point / Freezing Point:	n/a
Initial Boiling Point:	n/a
Boiling Point:	n/a
Flash Point:	n/a
Evaporation Rate:	n/a
Flammability (solid, gas):	n/a
Lower Flammability Limit:	n/a
Upper Flammability Limit:	n/a
Vapor Pressure:	n/a
Vapor Density:	n/a
Relative Density:	n/a



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Solubility:	Slight, 0.2-0.5%
Partition Coefficient: n-Octanol/Water:	n/a
Auto-ignition Temperature:	n/a
Decomposition Temperature:	n/a
Viscosity:	n/a
Percent Volatile, wt. %:	n/a
VOC Content, wt. %:	n/a
Density:	n/a
Coefficient of Water/Oil Distribution:	n/a

SECTION 10: STABILITY AND REACTIVITY

Chemical Stability:	Stable under recommended storage conditions.
Possibility of Hazardous Reactions:	None under normal processing.
Conditions to Avoid:	Exposure to water – product may harden on contact with water. Manage dust formation during use.
Incompatible Materials:	Strong acids.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on likely routes of exposure.

Product information:

Inhalation:	Irritating to respiratory system. Irritating to mucous membranes.
Eye contact:	Risk of serious damage to eyes.
Skin contact:	Irritating to skin. May cause allergic skin reaction
Ingestion:	Harmful if swallowed.

Component information:

Chemical Name: Quartz LD50 Oral: 500 mg/kg (Rat) ACGIH: A2 – Suspected Human Carcinogen
IARC: Group 1 – Carcinogenic to humans OSHA: X-present
Delayed and immediate effects and also chronic effects from short and long term exposure.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity:

Aquatic Toxicity:	The environmental impact of this product has not been fully investigated.
Persistence and Degradability:	No information available.
Bio-accumulative Potential:	Does not accumulate in organisms



Safety Data Sheet

Date Revised: 9/2/2015

Supersedes: 5/21/2015

Mobility in Soil:	No further relevant information available
Ecotoxical Effects Remark:	No information available.
Additional Ecological Information	No information available.
General Notes:	This statement was deduced from products with a similar structure or composition. Due to available data on eliminability/decomposition and bio-accumulation potential prolonged term damage of the environment cannot be excluded. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Also poisonous for fish and plankton in water bodies. Toxic for aquatic organisms.
PBT Assessment:	N/A
vPvB Assessment:	N/A
Other Adverse Effects:	No further relevant information available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Treatment Methods	May be disposed of in an unrestricted sanitary landfill.
Recommendation:	This material as supplied is not a hazardous waste according to Federal regulations (40CFR261). This material could become a hazardous waste if it is mixed with or otherwise comes in contact with a hazardous waste, if chemical additions are made to this material, or if the material is processed or otherwise altered.
Uncleaned Packaging	
Recommendation:	Disposal must be made according to official regulations. Do not re-use empty containers.

SECTION 14: TRANSPORT INFORMATION

US DEPARTMENT of TRANSPORTATION (DOT) Proper Shipping Name:	Not regulated.
Class:	n/a
UN #:	n/a
Packing Group:	n/a
CANADA Transportation of Dangerous Goods (TDG) Proper Shipping Name:	Not regulated.
Class:	n/a



Safety Data Sheet

Date Revised: 9/2/2015

Supersedes: 5/21/2015

UN #: n/a

Packing Group: n/a

SECTION 15: REGULATORY INFORMATION

CHEMICAL INVENTORIES

US (TSCA): The components of this product are in compliance with the chemical notification requirements of TSCA.

CANADA (DSL): The components of this product are in compliance with the chemical notification requirements of NSN Regulations under CEPA, 1999.

U.S. FEDERAL REGULATIONS Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals which are subject to the reporting requirements of the Act and Title 40 of the CFR, Part 372.

UNITED STATES: This SDS has been prepared to meet the US OSHA Hazard Communication Standard, 29 CFR 1910.1200

SARA 311/312 Hazard Categories
Acute health hazard – Yes
Chronic Health hazard – Yes
Fire Hazard – No
Sudden Release of Pressure – No
Reactive Hazard – No

US STATE Right to Know Regulations

Chemical Name	NJ	MA	PA	IL	RI
Portlant Cement	X	X	X		X
Quartz	X	X	X		X

California
California Prop 65: This product contains the following Proposition 65 chemicals.
Chemical Name: Quartz CAS-No: 14808-60-7 CA Prop. 65: Carcinogen

SECTION 16: OTHER INFORMATION

Disclaimer: This information is furnished without warranty of any kind, expressed or implied. Five Star Products, Inc. bases the information and recommendations in this document on data believed to be current and accurate.



HIGH PERFORMANCE POLYMERIC SAND MSDS

Material Safety Data Sheets (MSDS)

Section 1 – Product Identification

Company Identification	..... Alliance Designer Products Inc. 225 Blvd. Bellerose West Laval, Quebec, Canada H7L 6A1
24 hour Emergency Phone	..... CHEMTREC – 1 800 424-9300
Chemical Family	..... Silica & Granite
Product Use	..... JOINT MATERIAL
Hazard Rating	
Health	..... 1
Fire	..... 0
Reactivity	..... 0

Section 2 – Composition – Ingredients Information

Ingredient	CAS #	%	Exposure Limit	LD ₅₀	LC ₅₀
Crystalline Silica (Quartz)	14808-60-7	Min 4%	0.05 mg/m ³ TWA ACGIH	Not available	Not available

Balance of ingredients are non-hazardous

Section 3 – Hazard Identification

Description	..... Buff (beige) colored granules, Slight odor.
Hazards	..... WARNING! HARMFUL IF INHALED, OVEREXPOSURE MAY CAUSE LUNG DAMAGE, MAY CAUSE EYE IRRITATION. INHALATION CANCER HAZARD. CONTAINS QUARTZ WHICH CAN CAUSE CANCER. Risk of cancer depends upon duration and level of exposure.
Precautions	..... Avoid breathing dust, contact with skin and eyes.
Primary Routes of Entry	..... Eye, Inhalation, Skin Contact.
Signs and Symptoms of Exposure	..... Inhalation of quartz is classified as a human carcinogen. Chronic Exposure can cause silicosis, a form of lung scarring that can cause Shortness of breath, reduced lung fonction, and in severe cases, death. Inhalation may increase the progression of tuberculosis, susceptibility is apparently not increased. Persons with impaired respiratory fonction may be more susceptible ot the effects of this substance. Smoking can increase the risk of lung injury.
Target Organs	..... Lungs

Alliance Designer Products Inc.

Section 4 – First-aid Measures

Ingestion	.....	Get immediate medical attention. Never give anything by mouth to an unconscious person. Dilute with water. Keep patient warm and calm. Induce vomiting only on the instructions of a health care professional.
Skin	.....	Remove contaminated clothing. Rinse thoroughly with plenty of water. If irritation occurs or persists consult a doctor.
Inhalation	.....	Remove victim to fresh air. If breathing is difficult or has stopped, a properly trained person should administer oxygen or artificial respiration. Get immediate medical attention.
Eyes	.....	Immediately flush eyes with plenty of water, holding eyelids apart during flushing. Obtain immediate medical attention.

In case of overexposure – Always bring a copy of the product MSDS to the Doctor.

Section 5 – Fire Fighting Measures

Flash Point (°C)	.....	Not applicable
Flash Point Test Method	.....	Not applicable
Explosion Limits	.....	Not applicable
Fire and Explosion Hazards	.....	None
Fire Fighting Instructions	.....	Wear self-contained breathing apparatus and full bunker gear.
Extinguishing Media	.....	Not required
Hazardous Combustion Products	.....	None

Section 6 – Accidental Release Measures

Spill and Leak	Avoid generating dust. Wear respiratory protection. Sweep up or Vacuum and place in properly identified container.
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Section 7 – Handling and Storage Procedures

Handling Instructions	Avoid skin and eye contact. Avoid generation dust. DO NOT BREATHE DUST. Maintain good personal hygiene and wash Thoroughly after handling, especially before eating, drinking or smoking. Wash contaminated clothing before reuse.
Storage Measures	.....	Store in a cool, dry and well-ventilated area. Store away from heat Sources or open flames. Store away from incompatible materials. Keep containers tightly closed when not in use.

Section 8 – Exposure Control / Personal Protection

Skin Protection	.....	Wear protective gloves and long sleeve shirts to prevent skin contact.
Eye Protection	.....	Wear safety goggles.
Respiratory Protection	.....	In poorly ventilated areas or if the exposure limits described in section 2 Are likely to be exceeded then wear a high efficiency particulate Respirator (NIOSH type N100 filter).
Engineering Controls	.....	Adequate local exhaust ventilation at point of emission.

Section 9 – Physical and Chemical Properties

Physical State	.....	Solid (Powder)
Colour	.....	Beige
Odour	.....	None
Odour Threshold	.....	None
Solubility in Water	.....	Insoluble
Vapour Pressure	.....	Not applicable
Evaporation Rate	.....	Not applicable
Vapour Density	.....	No data
Specific Gravity	.....	2.65
Boiling Point (°C)	.....	2230 ⁰
Freezing/Melting Point (°C)	.....	1710 ⁰
pH	.....	No data
Volatiles (%)	.....	<1.0
Coefficient Water/Oil	.....	No data

Section 10 – Stability and Reactivity Information

Conditions to Avoid	.....	Exposure to excessive heat.
Material to Avoid	.....	Strong alkalis, hydrofluoric acid, powerful oxidizers, and fluorine Containing compounds.
Stability	.....	Product is stable in non-emergency conditions.
Hazardous Polymerization	.....	Will not occur.
Hazardous Products of Decomposition	.....	Will not occur.

Section 11 – Toxicological Information

LD ₅₀ (species/route)	.....	266 000 mg/kg rat
LC ₅₀ (species/duration)	.....	50 000 mg/m ³ rat (96 hours)
Exposure Limits	.....	See Section 2
Irritation	.....	Mild
Sensitization	.....	None reported
Carcinogenicity	.....	No potential occupational carcinogen. IARC Category 1 Carcinogen NTP!: Yes
Reproductive Effects	.....	No reported
Teratogenicity	.....	No reported
Mutagenicity	.....	No reported
Synergistic	.....	No reported

Section 12 – Ecological Information

Environmental Fate	No data at this time
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Section 13 – Disposal Instructions

Waste Disposal Method	Dispose in a manner consistent with local, regional, provincial and/or Federal regulations.
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Section 14 – Transport Information

Proper Shipping Name	Not regulated
UN #	Not applicable
Class(es)	.....	Not applicable
Packaging Group	.....	Not applicable
Other information	.....	None
Transport Emergency	.....	In the event of a transport emergency contact CHEMTREC at 1 800 424-9300.

Section 15 – Regulatory Information

WHMIS Classification	.....	Not controlled
CEPA Status	.....	Appears on the DSL
TSCA	.....	Appears on the TSCA Inventory
Other	.....	This product is know to the State of California to cause cancer.

Section 16 – Disclaimer

To the best of our knowledge, the information contained herein is accurate. However, neither the above named supplier nor any of its subsidiaries assumes any liability whatsoever for the accuracy or completeness of the information contained herein. Final determination of suitability of any material is the sole responsibility of the user. All materials may present unknown hazards and should be used with caution. Although certain hazards are described herein, we cannot guarantee that these are the only hazards that exist.

Section 17 – Other Information

MSDS # 2003-01 Revision # 2 Revision Date May 1st, 2007



EUCLID CHEMICAL

Version: 1.0
Revision Date: 07/29/2015

SAFETY DATA SHEET

1. Identification

Material name: THIN PATCH

Material: TR5109650

Recommended use and restriction on use

Recommended use: Cement, Portland, chemicals

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

EUCLID CHEMICAL COMPANY

19218 REDWOOD ROAD

CLEVELAND OH 44110

US

Contact person:

EH&S Department

Telephone:

216-531-9222

Emergency telephone number:

1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Skin sensitizer	Category 1B
Carcinogenicity	Category 1A
Specific Target Organ Toxicity - Single Exposure	Category 3

Unknown toxicity - Health

Acute toxicity, oral	91.95 %
Acute toxicity, dermal	98.27 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	100 %

Unknown toxicity - Environment

Acute hazards to the aquatic environment	93.69 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:



Signal Word: Danger

Hazard Statement: Causes skin irritation.
Causes serious eye damage.
May cause an allergic skin reaction.
May cause cancer.
May cause respiratory irritation.

Precautionary Statement:
Prevention:

Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required. Use only outdoors or in a well-ventilated area.

Response: IF INHALED: Remove person to fresh air and keep comfortable for breathing. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Immediately call a POISON CENTER/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse.

Storage: Store locked up. Store in well-ventilated place. Keep container tightly closed.

Disposal: Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Other hazards which do not result in GHS classification: None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Crystalline Silica (Quartz)/ Silica Sand	14808-60-7	40 - 70%
Portland cement	65997-15-1	30 - 60%
Calcium salt	7778-18-9	5 - 10%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures



Ingestion:	Call a POISON CENTER/doctor/.../if you feel unwell. Rinse mouth.
Inhalation:	Move to fresh air.
Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. Get medical attention.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed

Symptoms:	Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. Extreme irritation of eyes and mucous membranes, including burning and tearing. Respiratory tract irritation.
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Indication of immediate medical attention and special treatment needed

Treatment:	Symptoms may be delayed.
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5. Fire-fighting measures

General Fire Hazards:	No unusual fire or explosion hazards noted.
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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Use fire-extinguishing media appropriate for surrounding materials.
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Unsuitable extinguishing media:	Do not use water jet as an extinguisher, as this will spread the fire.
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Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed.
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Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No data available.
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Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
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6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.
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**Methods and material for containment and cleaning up:**

Collect spillage in containers, seal securely and deliver for disposal according to local regulations.

Notification Procedures:

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.

Environmental Precautions:

Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage**Precautions for safe handling:**

Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Do not get in eyes. Wash hands thoroughly after handling. Avoid contact with skin. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Use mechanical ventilation in case of handling which causes formation of dust.

Conditions for safe storage, including any incompatibilities:

Store locked up.

8. Exposure controls/personal protection**Control Parameters****Occupational Exposure Limits**

Chemical Identity	type	Exposure Limit Values	Source
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.025 mg/m ³	US. ACGIH Threshold Limit Values (2011)
Crystalline Silica (Quartz)/ Silica Sand - Respirable.	TWA	2.4 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.1 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Crystalline Silica (Quartz)/ Silica Sand - Total dust.	TWA	0.3 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Portland cement - Respirable fraction.	TWA	1 mg/m ³	US. ACGIH Threshold Limit Values (2011)
Portland cement - Total dust.	PEL	15 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Portland cement - Respirable fraction.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Portland cement	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)



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Calcium salt - Inhalable fraction.	TWA	10 mg/m3	US. ACGIH Threshold Limit Values (2011)
Calcium salt - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Calcium salt - Respirable fraction.	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)



Chemical name	type	Exposure Limit Values	Source
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.025 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Crystalline Silica (Quartz)/ Silica Sand - Respirable.	TWAEV	0.10 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	TWA	0.1 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Portland cement - Total dust.	TWA	10 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Portland cement - Respirable fraction.	TWA	3 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Portland cement	TWAEV	10 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Portland cement - Total dust.	TWA	10 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Portland cement - Respirable dust.	TWA	5 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Calcium salt - Inhalable	TWA	10 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Calcium salt - Inhalable fraction.	TWAEV	10 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Calcium salt - Total dust.	TWA	10 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Calcium salt - Respirable dust.	TWA	5 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)



Appropriate Engineering Controls Mechanical ventilation or local exhaust ventilation may be required. Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of dust.

Individual protection measures, such as personal protective equipment

General information: Provide easy access to water supply and eye wash facilities. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection: Wear a full-face respirator, if needed. Wear safety glasses with side shields (or goggles) and a face shield.

Skin Protection

Hand Protection: Use suitable protective gloves if risk of skin contact.

Other: Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional or manufacturer for specific information.

Respiratory Protection: In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

Hygiene measures: Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not get in eyes. Wash contaminated clothing before reuse. Avoid contact with skin.

9. Physical and chemical properties

Appearance

Physical state:	solid
Form:	Powder
Color:	Gray
Odor:	Odorless
Odor threshold:	No data available.
pH:	No data available.
Melting point/freezing point:	No data available.
Initial boiling point and boiling range:	No data available.
Flash Point:	No data available.
Evaporation rate:	No data available.
Flammability (solid, gas):	No
Upper/lower limit on flammability or explosive limits	
Flammability limit - upper (%):	No data available.
Flammability limit - lower (%):	No data available.
Explosive limit - upper (%):	No data available.
Explosive limit - lower (%):	No data available.
Vapor pressure:	No data available.



Vapor density:	No data available.
Relative density:	2.6
Solubility(ies)	
Solubility in water:	Miscible with water.
Solubility (other):	No data available.
Partition coefficient (n-octanol/water):	No data available.
Auto-ignition temperature:	No data available.
Decomposition temperature:	No data available.
Viscosity:	No data available.

10. Stability and reactivity

Reactivity:	No data available.
Chemical Stability:	Material is stable under normal conditions.
Possibility of Hazardous Reactions:	No data available.
Conditions to Avoid:	Avoid heat or contamination.
Incompatible Materials:	No data available.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	May be ingested by accident. Ingestion may cause irritation and malaise.
Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	Causes skin irritation.
Eye contact:	Causes serious eye damage.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product:	No data available.
Dermal Product:	No data available.
Inhalation Product:	No data available.

Specified substance(s):



Calcium salt LC 50 (Rat, 4 h): > 3.26 mg/l

Repeated dose toxicity

Product: No data available.

Skin Corrosion/Irritation

Product: No data available.

Serious Eye Damage/Eye Irritation

Product: No data available.

Specified substance(s):

Calcium salt in vivo (Rabbit, 72 hrs): Not irritating

Respiratory or Skin Sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Crystalline Silica (Quartz)/ Silica Sand Overall evaluation: Carcinogenic to humans.

US. National Toxicology Program (NTP) Report on Carcinogens:

Crystalline Silica (Quartz)/ Silica Sand Known To Be Human Carcinogen.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity**In vitro**

Product: No data available.

In vivo

Product: No data available.

Reproductive toxicity

Product: No data available.

Specific Target Organ Toxicity - Single Exposure



Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

12. Ecological information

Ecotoxicity:

Acute hazards to the aquatic environment:

Fish

Product: No data available.

Specified substance(s):

Calcium salt LC 50 (Fathead minnow (*Pimephales promelas*), 96 h): > 1,970 mg/l Mortality

Aquatic Invertebrates

Product: No data available.

Specified substance(s):

Calcium salt
LC 50 (Water flea (*Daphnia magna*), 24 h): > 1,970 mg/l Mortality
LC 50 (Water flea (*Ceriodaphnia dubia*), 24 h): > 1,940 mg/l Mortality
LC 50 (Water flea (*Ceriodaphnia dubia*), 48 h): > 1,970 mg/l Mortality
LC 50 (Water flea (*Ceriodaphnia dubia*), 48 h): > 1,910 mg/l Mortality

Chronic hazards to the aquatic environment:

Fish

Product: No data available.

Aquatic Invertebrates

Product: No data available.

Toxicity to Aquatic Plants

Product: No data available.

Persistence and Degradability

Biodegradation

Product: No data available.

BOD/COD Ratio



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Product: No data available.

Bioaccumulative Potential

Bioconcentration Factor (BCF)

Product: No data available.

Partition Coefficient n-octanol / water (log Kow)

Product: No data available.

Mobility in Soil: No data available.

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

**Superfund Amendments and Reauthorization Act of 1986 (SARA)****Hazard categories**

Immediate (Acute) Health Hazards
Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

SARA 311/312 Hazardous Chemical

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Crystalline Silica (Quartz)/ Silica Sand	500 lbs
Portland cement	500 lbs
Calcium salt	500 lbs

SARA 313 (TRI Reporting)

None present or none present in regulated quantities.

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations**US. California Proposition 65**

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

US. New Jersey Worker and Community Right-to-Know Act

Chemical Identity
Crystalline Silica (Quartz)/ Silica Sand
Portland cement
Calcium salt

US. Massachusetts RTK - Substance List

Chemical Identity
Crystalline Silica (Quartz)/ Silica Sand
Portland cement
Calcium salt

US. Pennsylvania RTK - Hazardous Substances

Chemical Identity
Crystalline Silica (Quartz)/ Silica Sand
Portland cement
Calcium salt

US. Rhode Island RTK

No ingredient regulated by RI Right-to-Know Law present.

**Other Regulations:**

Regulatory VOC (less water and exempt solvent):	0 g/l
VOC Method 310:	0.00 %

Inventory Status:

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	All components in this product are listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	All components in this product are listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.

16. Other information, including date of preparation or last revision

Revision Date: 07/29/2015



EUCLID CHEMICAL

Version: 1.0
Revision Date: 07/29/2015

Version #: 1.0

Further Information: No data available.

Disclaimer: For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.



Lafarge Masonry and Mortar Cement

Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations
Revision Date: 04/15/2015 Date of issue: 04/15/2015 Supersedes Date: 12/16/2014

Version: 1.1

SECTION 1: IDENTIFICATION

Product Identifier

Product Name: Lafarge Masonry and Mortar Cement

Synonyms: Cement, Masonry Cement, Mortar Cement, Mortar Mix, Parging Mix, U.S. Cement® Custom Color Masonry Cement, Superbond, Types N, S, or M, MCN, or MCS Cement, Trinity® White, Dark and Ultra Dark Masonry Cement, and Premium Stucco Mix

Note: Cement is used as a binder in concrete and mortars that are widely used in construction.

Intended Use of the Product

This MSDS covers many types of Masonry and Mortar Cement. Individual composition of hazardous constituents will vary between types of cement.

Name, Address, and Telephone of the Responsible Party

Company

Lafarge North America Inc.

8700 West Bryn Mawr Avenue, Suite 300

Chicago, IL 60631

Information: 773-372-1000 (9am to 5pm CST)

email: SDSinfo@Lafarge.com

Website: www.lafarge-na.com

Emergency Telephone Number

Emergency Number : 1-800-451-8346 (3E Hotline)

SECTION 2: HAZARDS IDENTIFICATION

Classification of the Substance or Mixture

Classification (GHS-US)

Skin Corr. 1C H314

Eye Dam. 1 H318

Skin Sens. 1 H317

Carc. 1A H350

STOT SE 3 H335

STOT RE 1 H372

Full text of H-phrases: see section 16

Label Elements

GHS-US Labeling

Hazard Pictograms (GHS-US)

:



GHS05



GHS07



GHS08

Signal Word (GHS-US)

: Danger

Hazard Statements (GHS-US)

: H314 - Causes severe skin burns and eye damage.
H317 - May cause an allergic skin reaction.
H318 - Causes serious eye damage.
H335 - May cause respiratory irritation.
H350 - May cause cancer (Inhalation).
H372 - Causes damage to organs (lung/respiratory system, kidneys) through prolonged or repeated exposure (Inhalation).

Precautionary Statements (GHS-US)

: P202 - Do not handle until all safety precautions have been read and understood.
P260 - Do not breathe dust.
P264 - Wash hands, forearms, and exposed areas thoroughly after handling.
P270 - Do not eat, drink or smoke when using this product.
P271 - Use only outdoors or in a well-ventilated area.
P272 - Contaminated work clothing must not be allowed out of the workplace.
P280 - Wear eye protection, protective clothing, protective gloves, respiratory protection.

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P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.
P303+P361+P353 - IF ON SKIN (OR HAIR): Take off immediately all contaminated clothing.
Rinse skin with water/shower.
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P308+P313 - If exposed or concerned: Get medical advice/attention.
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.
P362+P364 - Take off contaminated clothing and wash it before reuse.
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.
P405 - Store locked up.
P501 - Dispose of contents/container in accordance with local, regional, national, territorial, provincial, and international regulations.

Other Hazards

Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the body, can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree burns. Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure.

Unknown Acute Toxicity (GHS-US) Not available

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

Mixture

Name	Product Identifier	% (w/w)	Classification (GHS-US)
Cement, portland, chemicals	(CAS No) 65997-15-1	30 – 60; 60 - 100	Skin Irrit. 2, H315 Eye Dam. 1, H318 Skin Sens. 1, H317 STOT SE 3, H335
Limestone	(CAS No) 1317-65-3	10 - 30; 60 - 50	Not classified
Calcium hydroxide	(CAS No) 1305-62-0	< 0.1; 0.1 - 1; 1 - 5; 5 - 10; 10 - 20	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335 Aquatic Acute 3, H402
Quartz	(CAS No) 14808-60-7	< 0.1; 0.1 - 1; 1 - 5; 5 - 10	Carc. 1A, H350 STOT SE 3, H335 STOT RE 1, H372
Gypsum (Ca(SO ₄).2H ₂ O)	(CAS No) 13397-24-5	5 - 10	Not classified
Magnesium oxide (MgO)	(CAS No) 1309-48-4	< 0.1; 0.1 - 1; 1 - 4	Not classified
Calcium oxide	(CAS No) 1305-78-8	< 0.1; 0.1 - 1	Skin Irrit. 2, H315 Eye Dam. 1, H318 STOT SE 3, H335

More than one of the ranges of concentration prescribed by Controlled Products Regulations has been used where necessary, due to varying composition.

Cement is made from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of chemicals may be detected during chemical analysis.

Full text of H-phrases: see section 16

SECTION 4: FIRST AID MEASURES

Description of First Aid Measures

General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

Inhalation: If inhaled, remove to fresh air and keep at rest in a position comfortable for breathing. Seek medical attention immediately.

Skin Contact: Immediately flush skin with plenty of water for at least 60 minutes. Take off immediately all contaminated clothing and wash it before reuse. Get immediate medical advice/attention.

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Eye Contact: Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

Ingestion: Rinse mouth. Do not induce vomiting. Immediately call a POISON CENTER or doctor/physician.

Most Important Symptoms and Effects Both Acute and Delayed

General: Prolonged or repeated exposure may cause damage to kidneys and respiratory system. May cause inflammation of the respiratory system and skin. Narcotic effect. May cause cancer (Inhalation). May cause an allergic skin reaction. Corrosive. Causes burns.

Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Corrosive to mouth, nose, throat, and lungs, may cause difficulty in breathing.

Skin Contact: Concrete may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Unhardened concrete is capable of causing dermatitis by irritation and allergy. Concrete dust, in association with sweat and friction, can lead to skin irritation and dermatitis. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers.

Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder can cause severe eye irritation progressing to chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease. Prolonged or repeated exposure may cause damage to kidneys and respiratory system.

Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention.

SECTION 5: FIRE-FIGHTING MEASURES

Extinguishing Media

Suitable Extinguishing Media: Use extinguishing media appropriate for surrounding fire.

Unsuitable Extinguishing Media: Do not use a heavy water stream. Use of heavy stream of water may spread fire.

Special Hazards Arising From the Substance or Mixture

Fire Hazard: Product is not flammable.

Explosion Hazard: Product is not explosive.

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Advice for Firefighters

Precautionary Measures Fire: Cement is caustic. Avoid breathing dust.

Firefighting Instructions: Do not get water inside containers. Do not apply water stream directly at source of leak.

Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection.

Hazardous Combustion Products: Reacts with water, resulting in a slight release of heat, depending on the amount of lime (Calcium oxide) present. Avoid contact with incompatible materials.

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Reference to Other Sections

Refer to section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Personal Precautions, Protective Equipment and Emergency Procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Avoid generating and breathing dust.

For Non-Emergency Personnel

Protective Equipment: Use appropriate personal protection equipment (PPE).

Emergency Procedures: Evacuate unnecessary personnel.

For Emergency Personnel

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

Environmental Precautions

Prevent entry to sewers and public waters.

Methods and Material for Containment and Cleaning Up

For Containment: Place spilled material into a container. Avoid actions that cause the cement to become airborne. Avoid inhalation of cement and contact with skin. Wear appropriate protective equipment as described in Section 8. Scrape wet cement and place in container. Allow material to dry or solidify before disposal. Do not wash cement down sewage and drainage systems or into bodies of water (e.g. streams).

Methods for Cleaning Up: Avoid actions that cause dust to become airborne during clean-up such as dry sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water to clean-up dust. Use PPE described in Section 8. Contact competent authorities after a spill.

Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see item 13.

SECTION 7: HANDLING AND STORAGE

Precautions for Safe Handling

Additional Hazards When Processed: Proper grounding procedures to avoid static electricity should be followed. Bagged cement is heavy and poses risks such as sprains and strains to the back, arms, shoulders and legs during lifting and mixing. Handle with care and use appropriate control measures. Cutting, crushing or grinding hardened cement or other crystalline silica-bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE) described in Section 8 below. Do not handle until all safety precautions have been read and understood.

Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work. Wash contaminated clothing before reuse.

Conditions for Safe Storage, Including Any Incompatibilities

Storage Conditions: Keep bulk and bagged cement dry until used. Stack bagged material in a secure manner to prevent falling.

Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains cement. Cement can build up or adhere to the walls of a confined space. The cement can release, collapse or fall unexpectedly.

Incompatible Materials: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Specific End Use(s) Cement is used as a binder in concrete and mortars that are widely used in construction.

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government

Quartz (14808-60-7)

Mexico	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable fraction)
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USA ACGIH	ACGIH TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
USA OSHA	OSHA PEL (STEL) (mg/m ³)	250 mppcf/%SiO ₂ +5, 10mg/m ³ /%SiO ₂ +2
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	0.05 mg/m ³ (respirable dust)
USA IDLH	US IDLH (mg/m ³)	50 mg/m ³ (respirable dust)
Alberta	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable particulate)
British Columbia	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable)
Manitoba	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
New Brunswick	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable fraction)
Newfoundland & Labrador	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Nova Scotia	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Nunavut	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable mass)
Northwest Territories	OEL TWA (mg/m ³)	0.1 mg/m ³ (respirable mass)
Ontario	OEL TWA (mg/m ³)	0.10 mg/m ³ (designated substances regulation-respirable)
Prince Edward Island	OEL TWA (mg/m ³)	0.025 mg/m ³ (respirable fraction)
Québec	VEMP (mg/m ³)	0.1 mg/m ³ (respirable dust)
Saskatchewan	OEL TWA (mg/m ³)	0.05 mg/m ³ (respirable fraction)
Yukon	OEL TWA (mg/m ³)	300 particle/mL
Limestone (1317-65-3)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³ (total dust)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (total dust)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Québec	VEMP (mg/m ³)	10 mg/m ³ (Limestone, containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	30 mppcf
Cement, portland, chemicals (65997-15-1)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³
Mexico	OEL STEL (mg/m ³)	20 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
USA IDLH	US IDLH (mg/m ³)	5000 mg/m ³
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (total particulate matter containing no Asbestos and <1% Crystalline silica-total particulate)
Manitoba	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and

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		<1% Crystalline silica-respirable fraction)
New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica)
Newfoundland & Labrador	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Nova Scotia	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Ontario	OEL TWA (mg/m ³)	1 mg/m ³ (containing no Asbestos and <1% Crystalline silica-respirable)
Prince Edward Island	OEL TWA (mg/m ³)	1 mg/m ³ (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)
Québec	VEMP (mg/m ³)	10 mg/m ³ (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	30 mppcf
Calcium hydroxide (1305-62-0)		
Mexico	OEL TWA (mg/m ³)	5 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	5 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	5 mg/m ³
Alberta	OEL TWA (mg/m ³)	5 mg/m ³
British Columbia	OEL TWA (mg/m ³)	5 mg/m ³
Manitoba	OEL TWA (mg/m ³)	5 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	5 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	5 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	5 mg/m ³
Nunavut	OEL STEL (mg/m ³)	10 mg/m ³
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³
Northwest Territories	OEL STEL (mg/m ³)	10 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³
Ontario	OEL TWA (mg/m ³)	5 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	5 mg/m ³
Québec	VEMP (mg/m ³)	5 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	10 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	5 mg/m ³
Yukon	OEL STEL (mg/m ³)	10 mg/m ³
Yukon	OEL TWA (mg/m ³)	5 mg/m ³
Magnesium oxide (MgO) (1309-48-4)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (fume, total particulate)
USA IDLH	US IDLH (mg/m ³)	750 mg/m ³ (fume)
Alberta	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
British Columbia	OEL STEL (mg/m ³)	10 mg/m ³ (respirable dust and fume)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (fume, inhalable)
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)

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New Brunswick	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Newfoundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Nunavut	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Nunavut	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Northwest Territories	OEL STEL (mg/m ³)	20 mg/m ³ (fume)
Northwest Territories	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Ontario	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable)
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Québec	VEMP (mg/m ³)	10 mg/m ³ (fume)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³ (inhalable fraction)
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Yukon	OEL STEL (mg/m ³)	10 mg/m ³ (fume)
Yukon	OEL TWA (mg/m ³)	10 mg/m ³ (fume)
Gypsum (Ca(SO₄).2H₂O) (13397-24-5)		
Mexico	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
USA ACGIH	ACGIH TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
USA OSHA	OSHA PEL (TWA) (mg/m ³)	15 mg/m ³ (total dust) 5 mg/m ³ (respirable fraction)
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	10 mg/m ³ (total dust) 5 mg/m ³ (respirable dust)
Alberta	OEL TWA (mg/m ³)	10 mg/m ³
British Columbia	OEL STEL (mg/m ³)	20 mg/m ³ (total dust)
British Columbia	OEL TWA (mg/m ³)	10 mg/m ³ (total dust)
Manitoba	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Newfoundland & Labrador	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Nova Scotia	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Nunavut	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Northwest Territories	OEL TWA (mg/m ³)	5 mg/m ³ (respirable mass)
Ontario	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable)
Prince Edward Island	OEL TWA (mg/m ³)	10 mg/m ³ (inhalable fraction)
Québec	VEMP (mg/m ³)	10 mg/m ³ (containing no Asbestos and <1% Crystalline silica-total dust)
Saskatchewan	OEL STEL (mg/m ³)	20 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	10 mg/m ³
Yukon	OEL STEL (mg/m ³)	20 mg/m ³
Yukon	OEL TWA (mg/m ³)	30 mppcf
Calcium oxide (1305-78-8)		
Mexico	OEL TWA (mg/m ³)	2 mg/m ³
USA ACGIH	ACGIH TWA (mg/m ³)	2 mg/m ³
USA OSHA	OSHA PEL (TWA) (mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL (TWA) (mg/m ³)	2 mg/m ³
USA IDLH	US IDLH (mg/m ³)	25 mg/m ³
Alberta	OEL TWA (mg/m ³)	2 mg/m ³
British Columbia	OEL TWA (mg/m ³)	2 mg/m ³
Manitoba	OEL TWA (mg/m ³)	2 mg/m ³
New Brunswick	OEL TWA (mg/m ³)	2 mg/m ³
Newfoundland & Labrador	OEL TWA (mg/m ³)	2 mg/m ³
Nova Scotia	OEL TWA (mg/m ³)	2 mg/m ³
Nunavut	OEL STEL (mg/m ³)	4 mg/m ³
Nunavut	OEL TWA (mg/m ³)	2 mg/m ³

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Northwest Territories	OEL STEL (mg/m ³)	4 mg/m ³
Northwest Territories	OEL TWA (mg/m ³)	2 mg/m ³
Ontario	OEL TWA (mg/m ³)	2 mg/m ³
Prince Edward Island	OEL TWA (mg/m ³)	2 mg/m ³
Québec	VEMP (mg/m ³)	2 mg/m ³
Saskatchewan	OEL STEL (mg/m ³)	4 mg/m ³
Saskatchewan	OEL TWA (mg/m ³)	2 mg/m ³
Yukon	OEL STEL (mg/m ³)	4 mg/m ³
Yukon	OEL TWA (mg/m ³)	2 mg/m ³

Exposure Controls

Appropriate Engineering Controls: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

Personal Protective Equipment: Gloves. In case of dust production: protective goggles. Insufficient ventilation: wear respiratory protection. Protective clothing.



Materials for Protective Clothing: Chemically resistant materials and fabrics.

Hand Protection: Impermeable protective gloves.

Eye Protection: Wear ANSI approved glasses or safety goggles when handling dust or wet cement to prevent contact with eyes. Wearing contact lenses when using cement, under dusty conditions, is not recommended.

Skin and Body Protection: Wear gloves, boot covers, and protective clothing impervious to water to prevent skin contact.

Respiratory Protection: Wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

Other Information: When using, do not eat, drink, or smoke.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Information on Basic Physical and Chemical Properties

Physical State	: Solid
Appearance	: Gray, buff, or white powder
Odor	: Odorless
Odor Threshold	: Not available
pH	: 12 - 13
Evaporation Rate	: Not available
Melting Point	: Not available
Freezing Point	: Not available
Boiling Point	: > 1000 °C (> 1832 °F)
Flash Point	: Not available
Auto-ignition Temperature	: Not available
Decomposition Temperature	: Not available
Flammability (solid, gas)	: Not available
Lower Flammable Limit	: Not available
Upper Flammable Limit	: Not available
Vapor Pressure	: Not available
Relative Vapor Density at 20 °C	: Not available
Relative Density	: 2.65 - 3.15
Specific Gravity	: Not available
Solubility	: Slight; Water: 0.1 - 1 %
Partition Coefficient: N-Octanol/Water	: Not available

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Viscosity	: Not available
Explosion Data – Sensitivity to Mechanical Impact	: Not expected to present an explosion hazard due to mechanical impact.
Explosion Data – Sensitivity to Static Discharge	: Not expected to present an explosion hazard due to static discharge.

SECTION 10: STABILITY AND REACTIVITY

Reactivity: Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride.

Chemical Stability: Stable. Keep dry until use. Avoid contact with incompatible materials.

Possibility of Hazardous Reactions: Hazardous polymerization will not occur.

Conditions to Avoid: Extremely high or low temperatures. Incompatible materials.

Incompatible Materials: Strong acids, strong bases, strong oxidizers.

Hazardous Decomposition Products: Reacts with water, resulting in a slight release of heat, depending on the amount of lime (Calcium oxide) present. Avoid contact with incompatible materials.

SECTION 11: TOXICOLOGICAL INFORMATION

Information on Toxicological Effects - Product

Acute Toxicity: Not classified

LD50 and LC50 Data: Not available

Skin Corrosion/Irritation: Causes severe skin burns and eye damage.

pH: 12 - 13

Serious Eye Damage/Irritation: Causes serious eye damage.

pH: 12 - 13

Respiratory or Skin Sensitization: May cause an allergic skin reaction.

Germ Cell Mutagenicity: Not classified

Teratogenicity: Not available

Carcinogenicity: May cause cancer (Inhalation).

Specific Target Organ Toxicity (Repeated Exposure): Causes damage to organs (lung/respiratory system, kidneys) through prolonged or repeated exposure (Inhalation).

Reproductive Toxicity: Not classified

Specific Target Organ Toxicity (Single Exposure): May cause respiratory irritation.

Aspiration Hazard: Not classified

Symptoms/Injuries After Inhalation: The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures. Some studies show that exposure to respirable crystalline silica (without silicosis) or that the disease silicosis may be associated with the increased incidence of several autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys. Silicosis increases the risk of tuberculosis. Some studies show an increased incidence of chronic kidney disease and end-stage renal disease in workers exposed to respirable crystalline silica. Irritating to mouth, nose, throat, and lungs, may cause difficulty in breathing.

Symptoms/Injuries After Skin Contact: Concrete may cause dry skin, discomfort, irritation, severe burns, and dermatitis.

Unhardened concrete is capable of causing dermatitis by irritation and allergy. Concrete dust, in association with sweat and friction, can lead to skin irritation and dermatitis. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in concrete. The reaction can range from a mild rash to severe skin ulcers.

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Symptoms/Injuries After Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder can cause severe eye irritation progressing to chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

Symptoms/Injuries After Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: If dust is generated, repeated exposure through inhalation may cause cancer or lung disease. Causes damage to organs.

Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

Quartz (14808-60-7)	
LD50 Oral Rat	> 5000 mg/kg
LD50 Dermal Rat	> 5000 mg/kg
Calcium hydroxide (1305-62-0)	
LD50 Oral Rat	7340 mg/kg
Calcium oxide (1305-78-8)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 2500 mg/kg
Quartz (14808-60-7)	
IARC Group	1
National Toxicology Program (NTP) Status	Known Human Carcinogens.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity No additional information available

Calcium hydroxide (1305-62-0)	
LC50 Fish 1	50.6 mg/l
Calcium oxide (1305-78-8)	
LC50 Fish 1	1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])

Persistence and Degradability Not available

Bioaccumulative Potential

Calcium hydroxide (1305-62-0)	
BCF Fish 1	(no bioaccumulation)
Calcium oxide (1305-78-8)	
BCF Fish 1	(no bioaccumulation)

Mobility in Soil Not available

Other Adverse Effects Not available

SECTION 13: DISPOSAL CONSIDERATIONS

Waste Disposal Recommendations: Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

Additional Information: If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the product or derived from the product should be classified as a hazardous waste.

SECTION 14: TRANSPORT INFORMATION

In Accordance with DOT Not regulated for transport

In Accordance with IMDG Not regulated for transport

In Accordance with IATA Not regulated for transport

In Accordance with TDG Not regulated for transport

SECTION 15: REGULATORY INFORMATION

US Federal Regulations

Lafarge Masonry and Mortar Cement	
SARA Section 311/312 Hazard Classes	Delayed (chronic) health hazard

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	Immediate (acute) health hazard
Quartz (14808-60-7)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Limestone (1317-65-3)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Cement, portland, chemicals (65997-15-1)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Calcium hydroxide (1305-62-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Magnesium oxide (MgO) (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Calcium oxide (1305-78-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

US State Regulations

Quartz (14808-60-7)	
U.S. - California - Proposition 65 - Carcinogens List	WARNING: This product contains chemicals known to the State of California to cause cancer.

Quartz (14808-60-7)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Limestone (1317-65-3)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Cement, portland, chemicals (65997-15-1)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Calcium hydroxide (1305-62-0)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Magnesium oxide (MgO) (1309-48-4)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Gypsum (Ca(SO4).2H2O) (13397-24-5)	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	
Calcium oxide (1305-78-8)	
U.S. - Massachusetts - Right To Know List	
U.S. - New Jersey - Right to Know Hazardous Substance List	
U.S. - Pennsylvania - RTK (Right to Know) List	

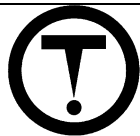
Canadian Regulations

Lafarge Masonry and Mortar Cement	
WHMIS Classification	Class D Division 2 Subdivision A - Very toxic material causing other toxic effects Class E - Corrosive Material Class D Division 2 Subdivision B - Toxic material causing other toxic effects

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Quartz (14808-60-7)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

Limestone (1317-65-3)

Listed on the Canadian NDSL (Non-Domestic Substances List)

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

Cement, portland, chemicals (65997-15-1)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

WHMIS Classification Class E - Corrosive Material
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Calcium hydroxide (1305-62-0)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification Class E - Corrosive Material
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

Magnesium oxide (MgO) (1309-48-4)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification Uncontrolled product according to WHMIS classification criteria

Calcium oxide (1305-78-8)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification Class E - Corrosive Material
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

Revision Date : 04/15/2015

Other Information : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Carc. 1A	Carcinogenicity Category 1A
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Skin Corr. 1C	Skin corrosion/irritation Category 1C
Skin Irrit. 2	Skin corrosion/irritation Category 2
Skin Sens. 1	Skin sensitization Category 1
STOT RE 1	Specific target organ toxicity (repeated exposure) Category 1
STOT SE 3	Specific target organ toxicity (single exposure) Category 3

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H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H335	May cause respiratory irritation
H350	May cause cancer
H372	Causes damage to organs through prolonged or repeated exposure
H402	Harmful to aquatic life

Party Responsible for the Preparation of This Document

Lafarge North America Inc.

+1 773-372-1000 (9am to 5pm CST)

An electronic version of this SDS is available at: www.lafarge-na.com under the Sustainability and Products sections. Please direct any inquiries regarding the content of this SDS to SDSinfo@Lafarge.com.

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North America GHS US 2012 & WHMIS 2

SAFETY DATA SHEET

Section 1: IDENTIFICATION

1.1 PRODUCT IDENTIFIER

Product Name: Versabond® Fortified Thin-set Mortar

Product Code: Not Available

1.2 RECOMMENDED USE OF CHEMICAL AND RESTRICTIONS ON USE

Product Use: Mortar

1.3 DETAILS OF THE SUPPLIER OF THE SAFETY DATA SHEETS

Name/Address: Custom Building Products
3490 Piedmont Road, Suite 1300
Atlanta, GA 30329

Telephone Number: (562)-598-8808

1.4 EMERGENCY TELEPHONE NUMBER

Emergency Telephone Number: INFOTRAC 1-800-535-5053 (US and Canada)
INTERNATIONAL + 1-352-323-3500

Section 2: HAZARD(S) IDENTIFICATION

2.1 CLASSIFICATION OF THE CHEMICAL IN ACCORDANCE WITH PARAGRAPH (d) OF 29 CFR

1910.1200 (OSHA HAZCOM2012)

Skin Irritation	Category 2
Serious Eye Damage	Category 1
Skin sensitization	Category 1B
STOT-SE	Category 3
STOT-RE	Category 1
Carcinogenicity	Category 1A

2.2 LABEL ELEMENTS ACCORDING TO OSHA HAZCOM2012

2.2a SIGNAL WORD:
DANGER!

2.2b HAZARD STATEMENTS
Causes skin irritation
Causes serious eye damage
May cause an allergic skin reaction

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May cause respiratory irritation
 Causes damage to organs through prolonged or repeated exposure
 May cause cancer

2.2c HAZARD PICTOGRAMS



2.2d PRECAUTIONARY STATEMENTS

i. PREVENTION	Wash hands thoroughly after handling. Do not breathe dust/fume/gas/mist/ vapors/spray. Do not eat, drink or smoke when using this product. Use only outdoors or in a well-ventilated area. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Wear impervious gloves/protective clothing/eye protection/face protection.
ii. RESPONSE	If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If skin irritation or rash occurs: Get medical advice/attention. If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/attention. If inhaled: Remove person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: call a poison center/doctor. If exposed or concerned: get medical advice/attention
iii. STORAGE	Store in a well-ventilated place. Keep container tightly closed.
iv. DISPOSAL	Dispose of contents/containers in accordance with all local, state, provincial, and federal regulations.

2.3 ADDITIONAL INFORMATION

2.3a HNOC – HAZARDS NOT OTHERWISE CLASSIFIED

Not applicable

2.3b UNKNOWN ACUTE TOXICITY

57% of the mixture consists of ingredient(s) of unknown acute toxicity.

2.3c WHMIS CLASSIFICATION

Class D2B – Skin/Eye Irritant
 Class D2A – Chronic Toxic Effects
 Class D2A - Carcinogenicity
 Class E – Corrosive Material

SAFETY DATA SHEET

2.3d LABEL ELEMENTS ACCORDING TO WHMIS

i. WHMIS HAZARD SYMBOLS



ii. SIGNAL WORD DANGER!

Section 3: COMPOSITION/INFORMATION ON INGREDIENTS

3.1 MIXTURES

Chemical Name	CAS Number	Weight %
Crystalline Silica, Quartz	14808-60-7	30 – 60%*
Portland Cement	65997-15-1	15 – 40%*
Calcium Carbonate	1317-65-3	10 – 30%*
Gypsum	7778-18-9	1 – 5%*

*Means that the component will fall into one the ranges specified due to batch-to-batch variability.

Section 4: FIRST-AID MEASURES

4.1 DESCRIPTION OF THE FIRST-AID MEASURES

ROUTES OF EXPOSURE	DESCRIPTION
Eye Contact:	In case of contact, immediately flush eyes with plenty of water for several minutes. If easy to do, remove contact lenses, if worn. Get medical attention immediately.
Skin Contact:	In case of contact, immediately flush skin with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Call a physician if irritation develops and persists.
Inhalation:	If breathing is difficult, remove victim to fresh air and keep at rest in a position comfortable for breathing. Get medical advice/attention if you feel unwell.
Ingestion:	If swallowed, do NOT induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical advice/attention.

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4.2 MOST IMPORTANT SYMPTOMS/EFFECTS, ACUTE AND DELAYED

ROUTES OF EXPOSURE	DESCRIPTION
Eye Contact:	Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
Skin Contact:	Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact.
Inhalation:	May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a serious disabling and fatal lung disease.
Ingestion:	May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

4.3 INDICATION OF IMMEDIATE MEDICAL ATTENTION AND SPECIAL TREATMENT NEEDED

Not applicable

Section 5: FIRE-FIGHTING MEASURES

5.1 FLAMMABILITY

Flammability: Not Flammable by WHMIS/OSHA HAZCOM2012 Criteria

5.2 EXTINGUISHING MEDIA

5.2a. Suitable Extinguishing Media:

Treat for surrounding material.

5.2b. Unsuitable Extinguishing Media:

Not available.

5.3 SPECIFIC HAZARDS ARISING FROM THE CHEMICAL

5.3a. Products of Combustion:

May include, and are not limited to: oxides of carbon and hydrogen sulfide

5.3b. Explosion Data

i. Sensitivity to Mechanical Impact:

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- Not available.
- ii. **Sensitivity to Static Discharge:**
Not available.

Section 6: ACCIDENTAL RELEASE MEASURES

6.1 PERSONAL PRECAUTIONS, PROTECTIVE EQUIPMENT, AND EMERGENCY PROCEDURES

Use personal protection recommended in Section 8. Isolate the hazard area and deny entry to unnecessary and unprotected personnel.

6.2 METHODS AND MATERIALS FOR CONTAINMENT AND CLEANING UP

Methods for Containment: Recover all usable material. Pick up large pieces, and then place in a suitable container. Do not flush to sewer or allow to enter waterways. Use appropriate Personal Protective Equipment (PPE).

Methods for Cleaning-Up: Vacuum or sweep material and place in a disposal container. Dispose of unwanted material properly in accordance with all local, regional, national and international regulations.

Section 7: HANDLING AND STORAGE

7.1 PRECAUTIONS FOR SAFE HANDLING

Handling: Use in well-ventilated areas. Wear impervious gloves and eye protection. Do not mix with other chemical products, except as indicated by the manufacturers. Do not get in eyes. Do not get on skin or clothing. Do not breathe fumes. Do not take internally. Good housekeeping is important to prevent accumulation of dust.

General Hygiene Advice: Use good industrial hygiene practices and wear recommended personal protection. Launder contaminated clothing before reuse. Wash hands before eating, drinking, or smoking.

7.2 CONDITIONS FOR SAFE STORAGE, INCLUDING ANY INCOMPATIBILITIES

Storage: Keep out of the reach of children. Keep container tightly closed. Store at room temperature and keep containers closed when not in use. Avoid any dust buildup by frequent cleaning and suitable construction of the storage area. Keep dry until use.

Section 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

SAFETY DATA SHEET

8.1 CONTROL PARAMETER Exposure Guidelines

Occupational Exposure Limits		
Chemical Name	OSHA-PEL	ACGIH-TLV
Crystalline Silica, Quartz	0.1 mg/m ³	0.025 mg/m ³
Portland cement	5 mg/m ³ (resp.) 15 mg/m ³ (total)	10 mg/m ³ (resp.)
Calcium Carbonate	5 mg/m ³ (Resp.) 15 mg/m ³ (Total)	5 mg/m ³ (Resp.)
Gypsum	10 mg/m ³ (Resp.) 15 mg/m ³ (Total)	10 mg/m ³

8.2 EXPOSURE CONTROLS

Engineering Controls: Use ventilation adequate to keep exposures (airborne levels of dust, fume, vapor, etc.) below recommended exposure limits.

8.3 INDIVIDUAL PROTECTION MEASURES

8.3a. Personal Protective Equipment:

- i. **Eye/Face Protection:** Wear approved eye protection [properly fitted dust- or splash-proof chemical safety goggles/face (face shield)]
- ii. **Skin Protection:**
 1. **Hand Protection:** Wear impervious gloves.
 2. **Body Protection:** Wear suitable protective clothing
- iii. **Respiratory Protection:** A NIOSH approved dust mask or filtering face piece is recommended in poorly ventilated areas or when permissible exposure limits may be exceeded. Respirators should be selected by and used under the direction of a trained health and safety professional following requirements found in OSHA's respirator standard (29 CFR 1910.134) and ANSI's standard for respiratory protection (Z88.2).
- iv. **General Health and Safety Measures:** Handle according to established industrial hygiene and safety practices.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance (physical state, color, etc.):	Solid Powder (Gray or White)
Odor:	Characteristic
Odor Threshold:	Not available
pH:	10 – 12.5 when wet
Melting point/Freezing point:	Not available

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Initial boiling point and boiling range:	Not available
Flash point:	> 212°F
Evaporation rate (Water=1):	Not available
Flammability:	Not flammable
Upper Flammability/Explosive Limit:	Not available
Lower Flammability/Explosive Limit:	Not available
Vapor Pressure	Not available
Vapor Density:	Not available
Relative Density:	2 – 3 g/cc
Solubility in Water:	Slightly Soluble
Partition coefficient: n-octanol/water:	Not available
Auto-ignition temperature:	Not available
Decomposition Temperature:	Not available
Viscosity (cps):	Not available
VOC Content:	0 g/L (0%)

Section 10: STABILITY AND REACTIVITY

10.1. REACTIVITY

No dangerous reaction known under conditions of normal use.

10.2. CHEMICAL STABILITY

Stable under normal storage conditions. Keep dry in storage.

10.3. POSSIBILITY OF HAZARDOUS REACTION

No dangerous reaction known under conditions of normal use.

10.4. CONDITIONS TO AVOID

Heat. Incompatible materials.

10.5. INCOMPATIBLE MATERIALS

Strong acids. Strong Oxidizers.

10.6. HAZARDOUS DECOMPOSITION PRODUCTS

Upon decomposition, this product may yield oxides of carbon and hydrogen sulfide.

Section 11: TOXICOLOGICAL INFORMATION

11.1. LIKELY ROUTES OF EXPOSURE:

Skin contact, skin absorption, eye contact, inhalation, and ingestion.

11.2. SYMPTOMS RELATED TO PHYSICAL/CHEMICAL/TOXICOLOGICAL CHARACTERISTICS:

SAFETY DATA SHEET

- Eye Contact:** Causes serious eye damage. Symptoms may include discomfort or pain, excess blinking and tear production, with marked redness and swelling of the conjunctiva.
- Skin Contact:** Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact.
- Inhalation:** May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated exposure. This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, a serious disabling and fatal lung disease.
- Ingestion:** May be harmful if swallowed. Ingestion may cause discomfort and/or distress, nausea or vomiting.

Acute Toxicity		
Chemical Name	LC50	LD50
Crystalline Silica, Quartz	Not available	Not available
Portland cement	Not available	Not available
Calcium Carbonate	Not available	Oral: 6450 mg/kg, rat
Gypsum	Not available	Not available

Carcinogenicity	
Chemical Name	Chemical Listed as Carcinogens or Potential Carcinogen (NTP,IARC,OSHA,ACGIH,CP65)
Crystalline Silica, Quartz	N-A2, I-1, O-1, ACGIH-A2, CP65
Portland cement	ACGIH-A4
Calcium Carbonate	Not Listed
Gypsum	Not Listed

11.3. DELAYED, IMMEDIATE, AND CHRONIC EFFECTS OF SHORT AND LONG-TERM EXPOSURE

SHORT-TERM	
Skin Corrosion/Irritation:	Causes skin irritation
Serious Eye Damage/Irritation:	Causes severe eye damage
Respiratory Sensitization:	Not available
Skin Sensitization:	May cause an allergic skin reaction
STOT-Single Exposure:	May cause respiratory irritation
Aspiration Hazard:	Not available
LONG-TERM	
Carcinogenicity:	May cause cancer
Germ Cell Mutagenicity:	Not available
Reproductive Toxicity:	Not available

SAFETY DATA SHEET

STOT-Repeated Exposure:	Causes damage to organs through prolonged or repeated exposure
Synergistic/Antagonistic Effects:	Not available

Section 12: ECOLOGICAL INFORMATION

12.1. ECOTOXICITY

May cause long-term adverse effects to the aquatic environment. Keep from entry into sewers and waterways.

Ecotoxicity		
Chemical Name	EC50/NOEC-48 Hours	LC50/NOEC-96 Hours
Crystalline Silica, Quartz	Not available	Not available
Portland cement	Not available	Not available
Calcium Carbonate	Not available	Not available
Gypsum	Not available	Not available

12.2. PERSISTENCE AND DEGRADABILITY

Not available

12.3. BIOACCUMULATIVE POTENTIAL

Not available

12.4. MOBILITY IN SOIL

Not available

12.5. OTHER ADVERSE EFFECTS

Not available

Section 13: DISPOSAL CONSIDERATIONS

13.1. DISPOSAL METHOD

Dispose of contents/containers in accordance with all local, state, provincial, and federal regulations

13.2. OTHER DISPOSAL CONSIDERATIONS

Not available

Section 14: TRANSPORT INFORMATION

DOT (U.S.)	TDG (CANADA)
UN NUMBER:	UN NUMBER:

SAFETY DATA SHEET

Not regulated	Not regulated
UN PROPER SHIPPING NAME:	UN PROPER SHIPPING NAME:
Not regulated	Not regulated
TRANSPORT HAZARD CLASS (ES):	TRANSPORT HAZARD CLASS (ES):
Not regulated	Not regulated
PACKING GROUP (if applicable):	PACKING GROUP (if applicable):
Not regulated	Not regulated

SUMMARY: Product is not regulated under DOT/TDG and other transportation regulations.

14.1. ENVIRONMENTAL HAZARDS

Not available

14.2. TRANSPORT IN BULK ACCORDING TO ANNEX II OF MARPOL 73/78 AND THE IBC CODE

Not available

14.3. SPECIAL PRECAUTIONS FOR USER

Do not handle until all safety precautions have been read and understood.

Section 15: REGULATORY INFORMATION

15.1. SAFETY, HEALTH AND ENVIRONMENTAL REGULATIONS/LEGISLATIONS SPECIFIC FOR THE CHEMICAL

Canada: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the SDS contains all the information required by the Controlled Products Regulations.

US: SDS prepared pursuant to the Hazard Communication Standard (CFR29 1910.1200) HazCom 2012

15.2. US FEDERAL INFORMATION:

CHEMICAL NAME	SARA TITLE III			
	SECTION 302 (EHS) TPQ (LBS)	SECTION 304 EHS RQ (LBS)	CERCLA RQ (LBS)	SECTION 313 (TRI)
Crystalline Silica, Quartz	Not Listed	Not Listed	Not Listed	Not Listed
Portland cement	Not Listed	Not Listed	Not Listed	Not Listed
Calcium Carbonate	Not Listed	Not Listed	Not Listed	Not Listed
Gypsum	Not Listed	Not Listed	Not Listed	Not Listed

15.3. US STATE RIGHT TO KNOW LAWS:

SAFETY DATA SHEET

California Proposition 65:	WARNING! This product contains a chemical known to the State of California to cause cancer, birth defects or other reproductive harm
Other U.S. States "Right to Know" Lists:	
New Jersey:	Silica, quartz: CAS#14808-60-7 Silicate, Portland cement: CAS#65997-15-1 Calcium carbonate: CAS#1317-65-3 Gypsum (Calcium Sulfate): CAS#7778-18-9
Pennsylvania:	Silica, quartz: CAS#14808-60-7 Silicate, Portland cement: CAS#65997-15-1 Calcium carbonate: CAS#1317-65-3 Gypsum (Calcium Sulfate): CAS#7778-18-9
Massachusetts:	Silica, Crystalline, Quartz: CAS#14808-60-7 Portland Cement: CAS#65997-15-1 Calcium carbonate: CAS#1317-65-3 Gypsum: CAS#7778-18-9
Minnesota:	Silica, quartz: CAS#14808-60-7 Cement, Portland, Chemicals: CAS#65997-15-1 Calcium carbonate: CAS#1317-65-3 Gypsum (Calcium Sulfate): CAS#7778-18-9
Florida:	Not Available
Michigan:	Not Available

15.4. GLOBAL INVENTORIES

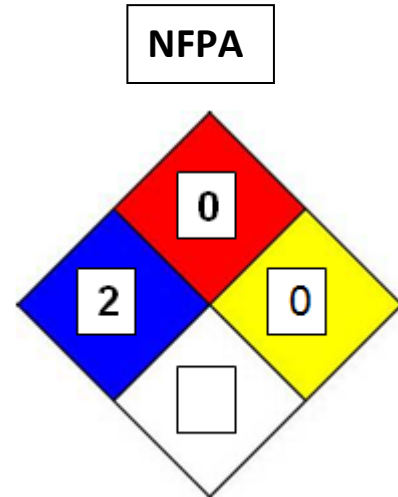
Chemical Name	USA TSCA	Canada DSL/NDL
Crystalline Silica, Quartz	Yes	DSL
Portland cement	Yes	DSL
Calcium Carbonate	Yes	DSL(*)
Gypsum	Yes	DSL

*Exemption: Natural occurring chemical

SAFETY DATA SHEET

15.5. NFPA AND HMIS RATINGS:

<p align="center">HEALTH HAZARD</p> <p>4 EXTREME - Highly toxic - May be fatal on short-term exposure.</p> <p>3 SERIOUS - Toxic - Full protective suit and breathing apparatus should be worn.</p> <p>2 MODERATE - Breathing apparatus and face mask must be worn.</p> <p>1 SLIGHT - Breathing apparatus may be worn.</p> <p>0 MINIMAL - No precautions necessary.</p>	<p align="center">FLAMMABILITY HAZARD</p> <p>4 EXTREME - Extremely flammable gas or liquid. Flash Point below 73°F.</p> <p>3 SERIOUS - Flammable. Flash Point 73°F to 100°F.</p> <p>2 MODERATE - Combustible. Requires moderate heating to ignite. Flash Point below 200°F.</p> <p>1 SLIGHT - Slightly combustible. Requires strong heating to ignite.</p> <p>0 MINIMAL - Will not burn under normal conditions.</p>
<p align="center">SPECIFIC HAZARD</p> <p>OXIDIZER OXY</p> <p>ACID ACID</p> <p>ALKALI ALK</p> <p>CORROSIVE COR</p> <p>Use NO WATER W</p> <p>RADIATION ☢</p>	<p align="center">INSTABILITY HAZARD</p> <p>4 EXTREME - Explosive at room temperature.</p> <p>3 SERIOUS - May detonate if shocked or heated under confinement or mixed with water.</p> <p>2 MODERATE - Unstable. May react with water.</p> <p>1 SLIGHT - May react if heated or mixed with water.</p> <p>0 MINIMAL - Normally stable. Does not react with water.</p>



HMIS

<p>2 HEALTH</p> <p>0 FLAMMABILITY</p> <p>0 REACTIVITY</p> <p>0 PERSONAL PROTECTION</p> <p align="center" style="font-size: 1.5em;">B</p>	<p align="center">PROTECTIVE EQUIPMENT INDEX</p> <table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <td>A </td> <td>G </td> </tr> <tr> <td>B </td> <td>H </td> </tr> <tr> <td>C </td> <td>I </td> </tr> <tr> <td>D </td> <td>J </td> </tr> <tr> <td>E </td> <td>K </td> </tr> <tr> <td>F </td> <td>X Ask your supervisor for special handling instructions.</td> </tr> </table>	A	G	B	H	C	I	D	J	E	K	F	X Ask your supervisor for special handling instructions.
A	G												
B	H												
C	I												
D	J												
E	K												
F	X Ask your supervisor for special handling instructions.												

Hazard Index	
4	Severe Hazard
3	Serious Hazard
2	Moderate Hazard
1	Slight Hazard

CLASSIFICATIONS:

CP65	California Proposition 65
OSHA (O)	Occupational Safety and Health Administration
ACGIH (G)	American Conference of Governmental Industrial Hygienists <ul style="list-style-type: none"> A1 – Confirmed human carcinogen A2 – Suspected human carcinogen A3 – Animal carcinogen A4 – Not classifiable as a human carcinogen A5 – Not suspected a human carcinogen

SAFETY DATA SHEET

IARC (I)	International Agency for Research on Cancer <ul style="list-style-type: none">• 1 – The agent (mixture) is carcinogenic to humans• 2A – The agent (mixture) is probably carcinogenic to humans; there is limited evidence of carcinogenicity in humans and sufficient evidence of carcinogenicity in experimental animals.• 2B – The agent (mixture) is possibly carcinogenic to humans; there is limited evidence of carcinogenicity in humans in the absence of sufficient evidence of carcinogenicity in experimental animals.• 3 – The agent (mixture, exposure circumstance) is not classifiable as to its carcinogenicity to humans.• 4 – The agent (mixture, exposure circumstance) is probably not carcinogenic to humans.
NTP (N)	National Toxicology Program <ul style="list-style-type: none">• 1 – Known to be carcinogens• 2 – Reasonably anticipated to be carcinogens

Section 16: OTHER INFORMATION

Date of Preparation: June 1, 2015

Version: 1.0

Revision Date: N/A

Disclaimer: The information and recommendations contained herein are based upon data believed to be correct. However, no guarantee or warranty of any kind, express or implied, is made with respect to the information contained herein. We accept no responsibility and disclaim all liability for any harmful effects which may be caused by exposure to silica contained in our products.

Prepared by: Custom Building Products
Phone: (562)-968-2980
www.custombuildingproducts.com

End of Safety Data Sheet



EUCLID CHEMICAL

Version: 1.0
Revision Date: 07/28/2015

SAFETY DATA SHEET

1. Identification

Material name: VERSASPEED

Material: 083P 50

Recommended use and restriction on use

Recommended use: Cement, Portland, chemicals

Restrictions on use: Not known.

Manufacturer/Importer/Supplier/Distributor Information

EUCLID CHEMICAL COMPANY
19218 REDWOOD ROAD
CLEVELAND OH 44110
US

Contact person:

Telephone:

Emergency telephone number:

EH&S Department

216-531-9222

1-800-424-9300 (US); 1-613-996-6666 (Canada)

2. Hazard(s) identification

Hazard Classification

Health Hazards

Skin Corrosion/Irritation	Category 2
Serious Eye Damage/Eye Irritation	Category 1
Skin sensitizer	Category 1B
Carcinogenicity	Category 1A
Toxic to reproduction	Category 1B

Unknown toxicity - Health

Acute toxicity, oral	90.69 %
Acute toxicity, dermal	94.91 %
Acute toxicity, inhalation, vapor	100 %
Acute toxicity, inhalation, dust or mist	100 %

Unknown toxicity - Environment

Acute hazards to the aquatic environment	99.94 %
Chronic hazards to the aquatic environment	100 %

Label Elements

Hazard Symbol:





Signal Word:	Danger
Hazard Statement:	Causes skin irritation. Causes serious eye damage. May cause an allergic skin reaction. May cause cancer. May damage fertility or the unborn child.
Precautionary Statement:	
Prevention:	Wash thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Avoid breathing dust/fume/gas/mist/vapors/spray. Contaminated work clothing must not be allowed out of the workplace. Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Use personal protective equipment as required.
Response:	If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. IF ON SKIN: Wash with plenty of water. If skin irritation or rash occurs: Get medical advice/attention. Immediately call a POISON CENTER/doctor. Specific treatment (see this label). Wash contaminated clothing before reuse.
Storage:	Store locked up.
Disposal:	Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.
Other hazards which do not result in GHS classification:	None.

3. Composition/information on ingredients

Mixtures

Chemical Identity	CAS number	Content in percent (%)*
Crystalline Silica (Quartz)/Silica Sand	14808-60-7	60 - 100%
Portland cement	65997-15-1	7 - 13%
Silica, fused	60676-86-0	7 - 13%
Aluminum oxide	1344-28-1	3 - 7%
Calcium oxide	1305-78-8	3 - 7%
Borax	1303-96-4	1 - 5%
Magnesium oxide	1309-48-4	0.5 - 1.5%

* All concentrations are percent by weight unless ingredient is a gas. Gas concentrations are in percent by volume.

4. First-aid measures

Ingestion:	Call a POISON CENTER/doctor/.../if you feel unwell. Rinse mouth.
Inhalation:	Move to fresh air.



Skin Contact:	Immediately flush with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash contaminated clothing before reuse. Get medical attention.
Eye contact:	Immediately flush with plenty of water for at least 15 minutes. If easy to do, remove contact lenses. Call a physician or poison control center immediately.

Most important symptoms/effects, acute and delayed

Symptoms:	Prolonged or repeated contact with skin may cause redness, itching, irritation and eczema/chapping. Extreme irritation of eyes and mucous membranes, including burning and tearing.
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Indication of immediate medical attention and special treatment needed

Treatment:	Symptoms may be delayed.
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5. Fire-fighting measures

General Fire Hazards:	No unusual fire or explosion hazards noted.
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Suitable (and unsuitable) extinguishing media

Suitable extinguishing media:	Use fire-extinguishing media appropriate for surrounding materials.
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Unsuitable extinguishing media:	Do not use water jet as an extinguisher, as this will spread the fire.
--	--

Specific hazards arising from the chemical:	During fire, gases hazardous to health may be formed.
--	---

Special protective equipment and precautions for firefighters

Special fire fighting procedures:	No data available.
--	--------------------

Special protective equipment for fire-fighters:	Self-contained breathing apparatus and full protective clothing must be worn in case of fire.
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6. Accidental release measures

Personal precautions, protective equipment and emergency procedures:	See Section 8 of the SDS for Personal Protective Equipment. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. Keep unauthorized personnel away.
---	---

Methods and material for containment and cleaning up:	Collect spillage in containers, seal securely and deliver for disposal according to local regulations.
--	--

Notification Procedures:	In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations.
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Environmental Precautions: Do not contaminate water sources or sewer. Prevent further leakage or spillage if safe to do so.

7. Handling and storage

Precautions for safe handling: Wash hands thoroughly after handling. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Use personal protective equipment as required. Do not get in eyes. Avoid contact with skin. Ventilate well, avoid breathing vapors. Use approved respirator if air contamination is above accepted level. Use mechanical ventilation in case of handling which causes formation of dust.

Conditions for safe storage, including any incompatibilities: Store locked up.

8. Exposure controls/personal protection

Control Parameters

Occupational Exposure Limits

Chemical Identity	type	Exposure Limit Values	Source
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.025 mg/m ³	US. ACGIH Threshold Limit Values (2011)
Crystalline Silica (Quartz)/ Silica Sand - Respirable.	TWA	2.4 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.1 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Crystalline Silica (Quartz)/ Silica Sand - Total dust.	TWA	0.3 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Portland cement - Respirable fraction.	TWA	1 mg/m ³	US. ACGIH Threshold Limit Values (2011)
Portland cement - Total dust.	PEL	15 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Portland cement - Respirable fraction.	PEL	5 mg/m ³	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Portland cement	TWA	50 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
Silica, fused	TWA	20 millions of particles per cubic foot of air	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)
	TWA	0.8 mg/m ³	US. OSHA Table Z-3 (29 CFR 1910.1000) (2000)



Aluminum oxide - Respirable fraction.	TWA	1 mg/m3	US. ACGIH Threshold Limit Values (2011)
	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Aluminum oxide - Total dust.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Calcium oxide	TWA	2 mg/m3	US. ACGIH Threshold Limit Values (2011)
	PEL	5 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)
Borax - Inhalable fraction.	STEL	6 mg/m3	US. ACGIH Threshold Limit Values (02 2012)
	TWA	2 mg/m3	US. ACGIH Threshold Limit Values (02 2012)
Magnesium oxide - Inhalable fraction.	TWA	10 mg/m3	US. ACGIH Threshold Limit Values (2011)
Magnesium oxide - Total particulate.	PEL	15 mg/m3	US. OSHA Table Z-1 Limits for Air Contaminants (29 CFR 1910.1000) (02 2006)



Chemical name	type	Exposure Limit Values	Source
Crystalline Silica (Quartz)/ Silica Sand - Respirable fraction.	TWA	0.025 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Crystalline Silica (Quartz)/ Silica Sand - Respirable.	TWAEV	0.10 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Crystalline Silica (Quartz)/ Silica Sand - Respirable dust.	TWA	0.1 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Portland cement - Total dust.	TWA	10 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Portland cement - Respirable fraction.	TWA	3 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Portland cement	TWAEV	10 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Portland cement - Total dust.	TWA	10 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Portland cement - Respirable dust.	TWA	5 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Silica, fused - Respirable.	TWAEV	0.1 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Silica, fused - Respirable dust.	TWA	0.1 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Aluminum oxide - Respirable.	TWA	1 mg/m ³	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Aluminum oxide - Respirable fraction.	TWAEV	1 mg/m ³	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Aluminum oxide - Total dust. - as Al	TWA	10 mg/m ³	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)



Calcium oxide	TWA	2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Calcium oxide	TWAEV	2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Calcium oxide	TWA	2 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)
Borax - Inhalable	STEL	6 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
	TWA	2 mg/m3	Canada. British Columbia OELs. (Occupational Exposure Limits for Chemical Substances, Occupational Health and Safety Regulation 296/97, as amended) (07 2007)
Borax - Inhalable fraction.	TWAEV	2 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
	STEL	6 mg/m3	Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents) (11 2010)
Borax	TWA	5 mg/m3	Canada. Quebec OELs. (Ministry of Labor - Regulation Respecting the Quality of the Work Environment) (12 2008)

Appropriate Engineering Controls

Mechanical ventilation or local exhaust ventilation may be required. Observe good industrial hygiene practices. Observe occupational exposure limits and minimize the risk of inhalation of dust.

Individual protection measures, such as personal protective equipment**General information:**

Provide easy access to water supply and eye wash facilities. Good general ventilation (typically 10 air changes per hour) should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels to an acceptable level.

Eye/face protection:

Wear a full-face respirator, if needed. Wear safety glasses with side shields (or goggles) and a face shield.

Skin Protection**Hand Protection:**

Use suitable protective gloves if risk of skin contact.

Other:

Wear chemical-resistant gloves, footwear, and protective clothing appropriate for the risk of exposure. Contact health and safety professional



or manufacturer for specific information.

Respiratory Protection: In case of inadequate ventilation use suitable respirator. Seek advice from local supervisor.

Hygiene measures: Observe good industrial hygiene practices. Wash hands before breaks and immediately after handling the product. Do not get in eyes. Do not handle until all safety precautions have been read and understood. Obtain special instructions before use. Wash contaminated clothing before reuse. Avoid contact with skin.

9. Physical and chemical properties

Appearance

Physical state: solid
Form: Powder
Color: Gray

Odor: Odorless

Odor threshold: No data available.

pH: No data available.

Melting point/freezing point: No data available.

Initial boiling point and boiling range: No data available.

Flash Point: No data available.

Evaporation rate: No data available.

Flammability (solid, gas): No

Upper/lower limit on flammability or explosive limits

Flammability limit - upper (%): No data available.

Flammability limit - lower (%): No data available.

Explosive limit - upper (%): No data available.

Explosive limit - lower (%): No data available.

Vapor pressure: No data available.

Vapor density: No data available.

Relative density: 2.75

Solubility(ies)

Solubility in water: Miscible with water.

Solubility (other): No data available.

Partition coefficient (n-octanol/water): No data available.

Auto-ignition temperature: No data available.

Decomposition temperature: No data available.

Viscosity: No data available.

10. Stability and reactivity

Reactivity: No data available.

Chemical Stability: Material is stable under normal conditions.



Possibility of Hazardous Reactions:	No data available.
Conditions to Avoid:	Avoid heat or contamination.
Incompatible Materials:	No data available.
Hazardous Decomposition Products:	Thermal decomposition or combustion may liberate carbon oxides and other toxic gases or vapors.

11. Toxicological information

Information on likely routes of exposure

Ingestion:	May be harmful if swallowed.
Inhalation:	In high concentrations, vapors, fumes or mists may irritate nose, throat and mucus membranes.
Skin Contact:	Causes skin irritation.
Eye contact:	Causes serious eye damage.

Information on toxicological effects

Acute toxicity (list all possible routes of exposure)

Oral Product:	ATEmix: 2,395.56 mg/kg
Dermal Product:	No data available.
Inhalation Product:	No data available.

Repeated dose toxicity Product:	No data available.
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Skin Corrosion/Irritation Product:	No data available.
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Serious Eye Damage/Eye Irritation Product:	No data available.
---	--------------------

**Specified substance(s):**

Aluminum oxide	in vivo (Rabbit, 24 hrs): Not irritating
Calcium oxide	in vivo (Rabbit, 24 hrs): Category 1
Borax	Irritating
Magnesium oxide	Slightly irritating

Respiratory or Skin Sensitization

Product: No data available.

Carcinogenicity

Product: No data available.

IARC Monographs on the Evaluation of Carcinogenic Risks to Humans:

Crystalline Silica (Quartz)/ Silica Sand	Overall evaluation: Carcinogenic to humans.
--	---

US. National Toxicology Program (NTP) Report on Carcinogens:

Crystalline Silica (Quartz)/ Silica Sand	Known To Be Human Carcinogen.
--	-------------------------------

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050):

No carcinogenic components identified

Germ Cell Mutagenicity

In vitro
Product: No data available.

In vivo
Product: No data available.

Reproductive toxicity

Product: May damage fertility or the unborn child.

Specific Target Organ Toxicity - Single Exposure

Product: No data available.

Specific Target Organ Toxicity - Repeated Exposure

Product: No data available.

Aspiration Hazard

Product: No data available.

Other effects: No data available.

**12. Ecological information****Ecotoxicity:****Acute hazards to the aquatic environment:****Fish****Product:** No data available.**Specified substance(s):**

Borax LC 50 (Rainbow trout, donaldson trout (Oncorhynchus mykiss), 48 h): 1,800 mg/l Mortality

Aquatic Invertebrates**Product:** No data available.**Chronic hazards to the aquatic environment:****Fish****Product:** No data available.**Specified substance(s):**

Aluminum oxide NOAEL (Pimephales promelas, 28 d): 4.7 mg/l experimental result

Calcium oxide NOAEL (Oncorhynchus mykiss, 60 d): 307 mg/l interpreted

Aquatic Invertebrates**Product:** No data available.**Toxicity to Aquatic Plants****Product:** No data available.**Persistence and Degradability****Biodegradation****Product:** No data available.**BOD/COD Ratio****Product:** No data available.**Bioaccumulative Potential****Bioconcentration Factor (BCF)****Product:** No data available.**Partition Coefficient n-octanol / water (log Kow)****Product:** No data available.



EUCLID CHEMICAL

Version: 1.0
Revision Date: 07/28/2015

Mobility in Soil: No data available.

Other Adverse Effects: No data available.

13. Disposal considerations

Disposal instructions: Dispose of waste at an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

Contaminated Packaging: No data available.

14. Transport information

TDG:

Not Regulated

CFR / DOT:

Not Regulated

IMDG:

Not Regulated

15. Regulatory information

US Federal Regulations

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D)

None present or none present in regulated quantities.

US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)

None present or none present in regulated quantities.

CERCLA Hazardous Substance List (40 CFR 302.4):

None present or none present in regulated quantities.

Superfund Amendments and Reauthorization Act of 1986 (SARA)

Hazard categories

Immediate (Acute) Health Hazards

Delayed (Chronic) Health Hazard

SARA 302 Extremely Hazardous Substance

None present or none present in regulated quantities.

SARA 304 Emergency Release Notification

None present or none present in regulated quantities.

**SARA 311/312 Hazardous Chemical**

<u>Chemical Identity</u>	<u>Threshold Planning Quantity</u>
Crystalline Silica (Quartz)/ Silica Sand	500 lbs
Portland cement	500 lbs
Silica, fused	500 lbs
Aluminum oxide	500 lbs
Calcium oxide	500 lbs
Borax	500 lbs
Magnesium oxide	500 lbs

SARA 313 (TRI Reporting)

<u>Chemical Identity</u>
Aluminum oxide

Clean Water Act Section 311 Hazardous Substances (40 CFR 117.3)

None present or none present in regulated quantities.

Clean Air Act (CAA) Section 112(r) Accidental Release Prevention (40 CFR 68.130):

None present or none present in regulated quantities.

US State Regulations**US. California Proposition 65**

This product contains chemical(s) known to the State of California to cause cancer and/or to cause birth defects or other reproductive harm.

US. New Jersey Worker and Community Right-to-Know Act

<u>Chemical Identity</u>
Crystalline Silica (Quartz)/ Silica Sand
Portland cement
Silica, fused
Aluminum oxide
Calcium oxide
Borax

US. Massachusetts RTK - Substance List

<u>Chemical Identity</u>
Crystalline Silica (Quartz)/ Silica Sand
Portland cement
Silica, fused
Aluminum oxide
Calcium oxide
Borax

US. Pennsylvania RTK - Hazardous Substances

<u>Chemical Identity</u>
Crystalline Silica (Quartz)/ Silica Sand
Portland cement
Silica, fused
Aluminum oxide
Calcium oxide
Borax

**US. Rhode Island RTK****Chemical Identity**

Aluminum oxide

Other Regulations:

Regulatory VOC (less water and exempt solvent):	0 g/l
VOC Method 310:	0.00 %

Inventory Status:

Australia AICS:	One or more components in this product are not listed on or exempt from the Inventory.
Canada DSL Inventory List:	One or more components in this product are not listed on or exempt from the Inventory.
EINECS, ELINCS or NLP:	One or more components in this product are not listed on or exempt from the Inventory.
Japan (ENCS) List:	One or more components in this product are not listed on or exempt from the Inventory.
China Inv. Existing Chemical Substances:	One or more components in this product are not listed on or exempt from the Inventory.
Korea Existing Chemicals Inv. (KECI):	One or more components in this product are not listed on or exempt from the Inventory.
Canada NDSL Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
Philippines PICCS:	One or more components in this product are not listed on or exempt from the Inventory.
US TSCA Inventory:	One or more components in this product are not listed on or exempt from the Inventory.
New Zealand Inventory of Chemicals:	One or more components in this product are not listed on or exempt from the Inventory.
Japan ISHL Listing:	One or more components in this product are not listed on or exempt from the Inventory.
Japan Pharmacopoeia Listing:	One or more components in this product are not listed on or exempt from the Inventory.



EUCLID CHEMICAL

Version: 1.0
Revision Date: 07/28/2015

16. Other information, including date of preparation or last revision
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Revision Date: 07/28/2015

Version #: 1.0

Further Information: No data available.

Disclaimer: For Industrial Use Only. Keep out of Reach of Children. The hazard information herein is offered solely for the consideration of the user, subject to their own investigation of compliance with applicable regulations, including the safe use of the product under every foreseeable condition.



Safety Data Sheet
Weld-Crete®

Revision date 3/09/2015

1. Product and Company Identification

Company

Larsen Products Corp.
8264 Preston Court
Jessup, MD 20794
800-633-6668

2. Hazards Identification

Emergency Overview

Irritant - Skin: may cause skin irritation.

Eye: vapors may cause eye irritation

Respiratory tract: inhalation of vapor may cause irritation to the respiratory tract. Use in a well ventilated area.

Hazard classification

This product has not been classified as hazardous to the legislation in force.

3. Composition/Information on Ingredients

Ingredient name	CAS NO	Content
Poly vinyl acetate homopolymer	none	< 50%
Benzoate esters	proprietary	< 4%
Larsen blend	proprietary	< 2%

4. First Aid Measures

Eyes: Wash affected eyes for at least 15 minutes with clean water. Get immediate medical attention.

Skin: Wash with soap and water. Remove contaminated clothing. Get medical attention if irritation develops or persists. Wash contaminated clothing.

Inhalation: Move to fresh air. If symptoms develop or persist get medical attention.

Ingestion: Give victim one or two glasses of water or milk. Induce vomiting. Get immediate medical attention.

5. Fire Fighting Measures

Flash point: Not applicable

Extinguishing media: Use extinguishing measure appropriate to local circumstances and surrounding environment. Material does not burn.

Fire fighting procedures: Fire fighters should wear positive self-contained breathing apparatus. Wear full protective clothing.

Hazardous decomposition

products: Carbon dioxide, harmful vapors, nitrogen oxides, carbon black, acetic acid.

Fire and explosion

hazards: None

6. Accidental Release Measures

Personal precautions: Immediately contact emergency personnel. Isolate the hazard area and deny entry to unnecessary and unprotected personnel. Handle in accordance with good building materials hygiene and safety practice.

Environmental precautions: Contain contaminated water/firefighting water. Do not discharge into drains/surface waters/groundwater.

Clean up: Pick up with absorbent material. Shovel material and place in a closed container for disposal

7. Handling and Storage

Handling: Avoid aerosol formation. Avoid inhalation of mists/vapors. No special measures necessary provided product is used correctly.

Storage: Keep product in original container in a well ventilated area. Keep from freezing.

8. Exposure Controls and Personal Protection

Exposure Guidelines	Ethylene Glycol	107-21-1		
		ACGIH	Ceiling limit value	100mg/m3 aerosol
	Hexylene Glycol	107-41-5		
		ACGIH	Ceiling limit value	25 ppm
		NIOSH	Ceiling limit value	25 ppm
		NIOSH	Ceiling limit value	125 mg/m3

Respiratory protection: Wear respiratory protection if ventilation is inadequate.

Hand protection: Wear chemical resistant gloves. Manufacturer's directions for use should be observed.

Eye protection: Safety glasses with side shields.

Body protection: Light protective clothing.

9. Physical and Chemical Properties

Form:	Liquid
Odor:	Low to slight acetic
Color:	Blue
pH:	4-5
Boiling range:	182.22-340 C
Vapor density:	less than water
Flash point:	NA

10. Stability and Reactivity

Stability:	Stable under recommended storage conditions.
Conditions to avoid:	None known
Materials to avoid:	Strong acids, strong oxidizing agents, strong bases, strong reducing agents.
Hazardous reactions:	Stable if stored and handled as prescribed.
Decomposition products:	No hazardous decomposition products if stored and handled as prescribed.

11. Toxicological Information

Acute oral toxicity:	Ethylene glycol	LD50	6140mg/kg species rat
	Hexylene glycol	LD50	3700mg/kg species rat
		LD50	4790mg/kg species rat remarks:LD50
		LD 50	3500mg/kg species mouse remarks:LD50

Acute inhalation toxicity:	Hexylene glycol	LC50	>18000 ppm exposure time 8h species rat
	Benzoate esters	LC50	>200m/g/l exposure time 4h species rat

Acute dermal toxicity:	Ethylene glycol	LD50	9530mg/kg species rabbit
	Hexylene glycol	LD50	12300mg/kg species rabbit
	Benzoate esters	LD50	2000mg/kg species rat

12. Ecological Information

Degradability/Persistence
Biological/Abiological degradation

Evaluation: Inherently biodegradable.

13. Disposal Considerations

Waste disposal method: Dispose of contents/container in accordance with local and national regulations. Contents should not be released into the environment.
Container disposal method: Empty containers should be taken to an approved waste site for recycling or disposal.

14. Transport Information

Land transport	
TDG	Not classified as dangerous under transport regulations.
Sea transport	
IMDG	Not classified as dangerous under transport regulations.
Air transport	
IATA/ICAO	Not classified as dangerous under transport regulations

15. Regulatory Information

This product has been classified in accordance with the hazard criteria of the CPR and the MSDS contains all the information required by the CPR.

WHMIS :	not controlled
SARA 311/312:	Ethylene glycol <1%

California Prop.65

Does not contain chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm.

16. Other information

Hazardous Material Information System (USA)

Health	1
Fire hazard	0
Reactivity	0

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge. The information given is designed only as a guide for safe handling, use, processing, storage, transportation, disposal and release and it is not to be considered a warranty or quality specification. the information relates only to the specific material designated and may not be valid for such material in combination with other materials or in any process.