

**SAFETY DATA SHEET: MASONRY CEMENT****SECTION I - IDENTIFICATION**

Product Name:	Masonry Cement
Chemical Name:	Calcium Compounds (CAS #65997-15-1)
Other Common Names:	Cement, Hydraulic Cement, Masonry Cement Type N, Type S
Trade Names:	Buzzi Unicem USA Cement Signal Mountain Cement
Manufacturer Name and Address:	Signal Mountain Cement Company 1203 Suck Creek Road Chattanooga, TN 37405
Information Telephone Numbers:	(423) 866-0800
Emergency Contact Information:	(800) 424-9300 Chemtrec
Product Information/Uses:	Cement is a gray powder used as a binding ingredient in concrete and mortar mixes which are used in construction.

**SECTION II – HAZARDS IDENTIFICATION****Emergency Overview**

***Danger!*** Overexposure to cement mixed with water can cause skin or eye damage in the form of chemical (caustic) burns, including third-degree burns. The same type of injury can occur if wet or moist skin has prolonged exposure to dry cement. Cement and water mixture has a pH > 12.

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).

**GHS LABEL Elements**

Hazard Pictograms:



Signal word: Danger

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

**Hazard Statements:** OVEREXPOSURE TO CEMENT MIXED WITH WATER CAUSES SEVERE SKIN BURNS AND EYE DAMAGE.

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MAY CAUSE AN ALLERGIC SKIN REACTION.  
SWALLOWING MAY CAUSE DAMAGE TO MOUTH, THROAT OR  
INTERNAL ORGANS.  
INHALATION MAY CAUSE RESPIRATORY IRRITATION.  
LONG TERM INHALATION MAY DAMAGE LUNGS OR CAUSE CANCER.

**Relevant Routes of Exposure:** *eye contact, skin contact, inhalation and ingestion.*

### **Effects resulting from Eye Contact:**

Exposure to dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amounts of dry powder or splashes of wet cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid (see Section 4, below) and medical attention to prevent significant damage to the eye.

### **Effects resulting from Skin Contact**

Contact with cement can cause drying of the skin, severe irritation or chemical burns (third-degree), and dermatitis. A single short-term exposure to the dry powder is not likely to cause serious harm.

Overexposure to wet cement can cause severe skin damage in the form of chemical burns, including third-degree burns. The same type of injury can occur if wet or moist skin is exposed to dry cement. Cement dust in wet or moist clothing can transmit the caustic effects to the skin, causing chemical burns. 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.

Cement can cause dermatitis by irritation and allergy. Irritant dermatitis is caused by fine particles of cement that abrade the skin mechanically and cause irritation resulting in dermatitis. 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 of 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.

### **Effects resulting from Inhalation:**

Dusts may irritate the nose, throat, and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of appropriate exposure limits. Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, fibrosis or scar tissue formation in the lungs.

### **Effects resulting from Ingestion:**

Although small quantities of dust are not known to be harmful, ingestion of large quantities may cause severe irritation and chemical burns of the mouth, throat, stomach and digestive tract. Do not swallow cement.

### **Carcinogenicity:**

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Cement is not listed as a carcinogen by NTP, OSHA, ACGIH or IARC. However it may contain trace amounts of substances listed as a carcinogen by NTP, OSHA, ACGIH and/or IARC: crystalline silica, chromium VI compounds (hexavalent chromium), nickel or lead.

### SECTION III – COMPOSITION/INGREDIENTS INFORMATION

#### CHEMICAL FAMILY: Calcium Salts

COMPONENTS	CAS #	CONCENTRATION
Portland Cement (containing)	(CAS # 65997-15-1)	50% - 65%
- Tri Calcium Silicate, $3\text{CaO} \cdot \text{SiO}_2$	(CAS #12168-85-3)	Varies
- Di Calcium Silicate, $2\text{CaO} \cdot \text{SiO}_2$	(CAS #10034-77-2)	Varies
- Tri Calcium Aluminate, $3\text{CaO} \cdot \text{Al}_2\text{O}_3$	(CAS #12042-78-3)	Varies
- Calcium Aluminoferrite, a solid solution	(CAS #12068-35-8)	Varies
Calcium Carbonate $\text{CaCO}_3$	(CAS #1317-65-3)	35 – 50%
Crystalline Silica	(CAS #14808-60-7)	Approx. 0.2%

#### Composition comments

Small amounts of calcium oxide (a.k.a. quicklime) ( $\text{CaO}$ ), magnesium oxide ( $\text{MgO}$ ), sodium sulfate ( $\text{Na}_2\text{SO}_4$ ), and potassium sulfate ( $\text{K}_2\text{SO}_4$ ) may be present. Since cement is manufactured from materials mined from the earth (limestone, shale, sand, gypsum), and process heat is provided by burning fuels derived from the earth, trace but detectable amounts of naturally occurring metals, and possibly harmful elements may be found during chemical analysis. Mercury and lead were not found to be present at or above detection levels. Under ASTM Standards, cement may contain up to 0.75% insoluble residue. More than 0.1% of these residues may be free crystalline silica.

### SECTION IV – FIRST AID MEASURES

#### Eyes

Quickly and gently blot or brush cement off the face. Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. Take care not to rinse contaminated water into the unaffected eye or onto the face. Obtain immediate medical attention.

#### Skin

Heavy exposure to cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods (e.g. watchband, belts). Quickly and gently blot or brush away excess cement. Immediately wash thoroughly with lukewarm, gently flowing water and not-abrasive 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. 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 of the severity of the burn until hours after the exposure.

#### Inhalation of Airborne Dust

Remove source of contamination or move victim to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen. DO NOT allow victim to move about unnecessarily. Seek medical help if coughing and other symptoms persist. Inhalation of large amounts of cement requires immediate medical attention.

#### Ingestion

**NEVER** give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. **DO NOT INDUCE VOMITING**. Have victim drink 60 to 240 mL (2 to 8 oz.) water. Immediately obtain medical attention.

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### SECTION V – FIRE FIGHTING MEASURES

Extinguishing media:	Use extinguishing media appropriate for 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 fighters:	Move containers from fire area if this can be done without risk. Use water fire-spray to keep fire-exposed containers cool.
Special protective equipment for fighters:	Fire-fighters should wear appropriate protective equipment and self- for fire-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

### SECTION VI – ACCIDENTAL RELEASE MEASURES

Take personal precautions and keep unnecessary and unprotected personnel from coming into contact with spilled material. 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 when in contact with the material.

For cleaning-up spills, 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. Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section VIII.

Scrape up wet material and place in an appropriate container. Allow the material to “dry” before disposal. Do not attempt to wash cement down drains. Dispose of waste material by using licensed disposal contractor.

### SECTION VII – HANDLING AND STORAGE

#### **Handling:**

Use personal protective equipment (See Section VIII) when handling cement. Persons using cement should be familiar with its properties and hazards. A key to using the product safely requires the user to recognize that cement reacts chemically with water to produce calcium hydroxide that can cause severe chemical burns.

Avoid actions that generate dust and cause dust to become airborne. Avoid prolonged exposure to dust.

Skin and eye contact with cement should be avoided. Do not get cement inside boots, shoes or gloves. Do not allow wet clothing saturated with cement to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement fluids and launder/clean before reuse. Wash thoroughly after exposure to dust or wet cement mixtures.

Do not enter a confined space that stores or contains cement unless appropriate procedures and protection are available. Cement can build up or adhere to walls of a confined space and release or fall suddenly. Likewise, do not walk on top of cement stored in vessels, bins, and silos (engulfment hazard).

#### **Storage:**

Keep cement dry until used.

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### Further Information:

Drying cement is hygroscopic (it absorbs water). Cement needs water to harden. It will draw water away from any material it contacts, including skin.

Respirable crystalline silica-containing dust may be generated by cement when hardened product is subjected to mechanical forces, such as sanding, crushing, grinding and cutting.

### SECTION VIII – EXPOSURE CONTROL/PERSONAL PROTECTION

#### I. Exposure Guidelines

Substance Name		<u>OSHA PEL</u>	<u>ACGIH TLV</u>
		mg/m <sup>3</sup>	mg/m <sup>3</sup>
Portland Cement	Total dust	15	-
	Respirable	5	1
Calcium Sulfate (Gypsum)	Total dust	15	-
	Respirable	5	10
Magnesium Oxide (inhalable fraction)		15	10
Calcium Oxide		5	2
Silica (quartz)	Total dust	30/(% silica+2)	-
	Respirable	10/(% silica+2)	0.025
Nuisance dust	Total dust	15	10
	Respirable	5	3

#### II. Engineering Controls:

Avoid creating dust and actions that cause dust to become airborne. Use general or local exhaust ventilation as required to maintain exposures below appropriate exposure limits. Use product in well-ventilated areas. If ventilation is not adequate, see the respiratory protection recommended in this section.

#### III. Personal Protection Equipment:

##### *Eye/face protection*

To prevent eye contact wear safety glasses with side shields, safety goggles or face shield when handling dust or wet cement. Dust goggles should be worn in extremely dusty conditions. Wearing contact lenses when working with cement is not recommended.

##### *Hand protection*

Use impervious, waterproof, abrasion- and alkali-resistant gloves. Do not rely on barrier creams in place of impervious gloves. Do not get cement inside gloves.

##### *Skin and 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 cement. Where required to reduce foot and ankle exposure, wear impervious boots that are high enough to prevent cement from getting inside them. Do not get cement inside boots, shoes or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas.

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### ***Respiratory protection***

Ordinarily, a respirator should not be required when handling wet cement. Use NIOSH-approved respirators, when an exposure limit could be exceeded, in poorly ventilated areas, or when dust causes discomfort or irritation. 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.

### **IV. General hygiene considerations**

*Danger:* Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by cement with a pH neutral soap and clean, uncontaminated water. Wash again at the end of the work shift. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with cement. It should be removed and replaced with clean, dry clothing. Begin each day by wearing clean clothing and conclude the day with a bath or shower.

## SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Physical State/Appearance.....	Solid/Powder
Color.....	Gray or white
Odor.....	Odorless
Specific gravity.....	3.15
Flammability.....	Not flammable
Flash point [method].....	Not combustible
Auto ignition temperature.....	Not applicable
Flammable limits (approx. volume % in air).....	Not applicable
Boiling point.....	> 1000°C (1832°F)
Melting point.....	> 1000°C (1832°F)
Decomposition temperature.....	Not determined
pH.....	12 – 13
Solubility (H <sub>2</sub> O).....	Slightly soluble (0.1 – 1.0%)
Vapor pressure.....	Not Applicable
Vapor density.....	Not Applicable

## SECTION X – STABILITY AND REACTIVITY

### **Reactivity**

Reacts slowly with water forming hardened hydrated compounds, releasing heat and producing a strong alkaline solution.

### **Stability**

Stable. Keep dry until used.

### **Incompatible Materials or Conditions**

Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. 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

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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**

None known under normal conditions of storage and use.

### **Hazardous Polymerization**

Will not polymerize.

### **Conditions to avoid**

Contact with Incompatible Materials

## SECTION XI – TOXICOLOGICAL INFORMATION

Other than hazards identified in Section 2, no other known toxicological information available.

## SECTION XII – ECOLOGICAL INFORMATION

### **Eco-toxicity**

Cement hardens with water or moisture and is not expected to present unusual eco-toxicity risks to plants or animals. No recognized unusual toxicity to plants or animals.

### **Relevant physical and chemical properties**

(See Sections 9 and 10.)

## SECTION XIII – DISPOSAL CONSIDERATIONS

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 XIV – TRANSPORTATION INFORMATION

	<u>DOT Classification</u>	<u>IMDG</u>	<u>IATA</u>
UN number	Not regulated.	Not regulated.	Not regulated.
Hazard class(es)	—	—	—
Packing group	—	—	—
Environmental hazards	None.	None.	None.
Additional information	—	—	—

**SAFETY DATA SHEET: MASONRY CEMENT****SECTION XV - REGULATORY INFORMATION****U.S. Federal regulations:****Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200**

Cement may contain hazardous chemicals identified under this regulation, and should be incorporated as appropriate.

**Toxic Substances Control Act (TSCA)**

Cement may contain certain substances identified under the TSCA inventory list, and should be incorporated as appropriate.

**Status under the Federal Hazardous Substances Act (FHSA)**

Cement is a "hazardous substance" subject to statutes promulgated under the FHSA.

**Hazard Category under Superfund Amendments and Reauthorization Act of 1988 (SARA)****(Title III, Sections 311 and 312)**

Cement qualifies as a "hazardous substance" with delayed health effects. See Section 3 for Composition/information on ingredients.

**Hazard categories:**

Immediate hazard – Yes
Delayed hazard – No
Fire hazard – No
Pressure hazard – No
Reactivity hazard – No

**Section 302 extremely hazardous substance(s):** None

**SARA (313) Toxic Release Inventory (40 CFR 372.65):**

This product does not contain any constituents listed under SARA (Title III) Section 313 in amounts requiring supplier notification under 40 CFR Part 372 Subpart C

**CERCLA**

This product is not listed as a CERCLA substance.

**Other Regulations**

<b>Massachusetts:</b>	The following components are listed: cement, portland, chemicals, limestone
<b>New York:</b>	None of the components are listed.
<b>New Jersey:</b>	The following components are listed: cement, portland, chemicals, gypsum, limestone
<b>Pennsylvania:</b>	The following components are listed: cement, portland, chemicals, gypsum, limestone
<b>California: Prop. 65</b>	

**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.

**SECTION XVI – OTHER INFORMATION****Revision date**

June 1, 2015

**Date of previous MSDS**

August 1, 2004

**Other important information**



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A key to using the product safely requires the user to recognize that cement chemically reacts with water, and that some of the intermediate products of this reaction (that is, those present while the cement product is “setting”) pose a far greater hazard than dry cement.

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of cement as it is commonly used, the sheet cannot anticipate and provide the 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 information furnished in this safety data sheet does not address hazards that may be posed by other materials not commonly mixed with cement. Users should review other relevant safety data sheets before working with this cement product.

OTHER THAN AS EXPRESSLY AGREED TO BY SELLER IN WRITING, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OF FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY SELLER. The information provided herein was believed by Seller 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 such 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

### SECTION I - IDENTIFICATION

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Chemical Name:	Calcium Compounds (CAS #65997-15-1)
Other Common Names:	Cement, Hydraulic Cement, Type I, II, III
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Emergency Contact Information:	(800) 424-9300 Chemtrec
Product Information/Uses:	Portland cement is a gray powder used as a binding ingredient in concrete and mortar mixes which are used in construction.

### SECTION II – HAZARDS IDENTIFICATION

#### Emergency Overview

***Danger!*** Overexposure to Portland cement mixed with water can cause skin or eye damage in the form of chemical (caustic) burns, including third-degree burns. The same type of injury can occur if wet or moist skin has prolonged exposure to dry Portland cement. Portland cement and water mixture has a pH > 12.

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).

#### **GHS LABEL Elements**

Hazard Pictograms:



Signal word:

Danger

Classification of the substance or mixture:

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 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

**Hazard Statements:** OVEREXPOSURE TO PORTLAND CEMENT MIXED WITH WATER CAUSES

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SEVERE SKIN BURNS AND EYE DAMAGE.  
MAY CAUSE AN ALLERGIC SKIN REACTION.  
SWALLOWING MAY CAUSE DAMAGE TO MOUTH, THROAT OR  
INTERNAL ORGANS.  
INHALATION MAY CAUSE RESPIRATORY IRRITATION.  
LONG TERM INHALATION MAY DAMAGE LUNGS OR CAUSE CANCER.

**Relevant Routes of Exposure:** *eye contact, skin contact, inhalation and ingestion.*

### **Effects resulting from Eye Contact:**

Exposure to dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amounts of dry powder or splashes of wet Portland cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid (see Section 4, below) and medical attention to prevent significant damage to the eye.

### **Effects resulting from Skin Contact**

Contact with cement can cause drying of the skin, severe irritation or chemical burns (third-degree), and dermatitis. A single short-term exposure to the dry powder is not likely to cause serious harm.

Overexposure to wet cement can cause severe skin damage in the form of chemical burns, including third-degree burns. The same type of injury can occur if wet or moist skin is exposed to dry Portland cement. Cement dust in wet or moist clothing 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.

Portland cement can cause dermatitis by irritation and allergy. Irritant dermatitis is caused by fine particles of cement that abrade the skin mechanically and cause irritation resulting in dermatitis. 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 of 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.

### **Effects resulting from Inhalation:**

Dusts may irritate the nose, throat, and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of appropriate exposure limits. Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, fibrosis or scar tissue formation in the lungs.

### **Effects resulting from Ingestion:**

Although small quantities of dust are not known to be harmful, ingestion of large quantities may cause severe irritation and chemical burns of the mouth, throat, stomach and digestive tract. Do not swallow Portland cement.

### **Carcinogenicity:**

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- Di Calcium Silicate, $2\text{CaO} \cdot \text{SiO}_2$	(CAS #10034-77-2)	6% - 15%
- Tri Calcium Aluminate, $3\text{CaO} \cdot \text{Al}_2\text{O}_3$	(CAS #12042-78-3)	5% - 8%
- Calcium Aluminoferrite, a solid solution	(CAS #12068-35-8)	10% - 12%
Gypsum $\text{CaSO}_4 \cdot 2\text{H}_2\text{O}$	(CAS #13397-24-5)	2.0 – 8.0%
Crystalline Silica	(CAS #14808-60-7)	Approx. 0.2%

#### Composition comments

Small amounts of calcium oxide (a.k.a. quicklime) ( $\text{CaO}$ ), magnesium oxide ( $\text{MgO}$ ), sodium sulfate ( $\text{Na}_2\text{SO}_4$ ), and potassium sulfate ( $\text{K}_2\text{SO}_4$ ) may be present. Since Portland cement is manufactured from materials mined from the earth (limestone, shale, sand, gypsum), and process heat is provided by burning fuels derived from the earth, trace but detectable amounts of naturally occurring metals, and possibly harmful elements may be found during chemical analysis. Mercury and lead were not found to be present at or above detection levels. Under ASTM Standards, Portland cement may contain up to 0.75% insoluble residue. More than 0.1% of these residues may be free crystalline silica.

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#### Skin

Heavy exposure to Portland cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods (e.g. watchband, belts). Quickly and gently blot or brush away excess Portland cement. Immediately wash thoroughly with lukewarm, gently flowing water and not-abrasive 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 of the severity of the burn until hours after the exposure.

#### Inhalation of Airborne Dust

Remove source of contamination or move victim to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen. DO NOT allow victim to move about unnecessarily. Seek medical help if coughing and other symptoms persist. Inhalation of large amounts of Portland cement requires immediate medical attention.

#### Ingestion

**NEVER** give anything by mouth if victim is rapidly losing consciousness, or is unconscious or convulsing. Have victim rinse mouth thoroughly with water. **DO NOT INDUCE VOMITING**. Have victim drink 60 to 240 mL (2 to 8 oz.) water. Immediately obtain medical attention.

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Extinguishing media:	Use extinguishing media appropriate for 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 firefighters:	Move containers from fire area if this can be done without risk. Use water fire-spray to keep fire-exposed containers cool.
Special protective equipment for firefighters:	Fire-fighters should wear appropriate protective equipment and self- for fire-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

### SECTION VI – ACCIDENTAL RELEASE MEASURES

Take personal precautions and keep unnecessary and unprotected personnel from coming into contact with spilled material. 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 when in contact with the material.

For cleaning-up spills, 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. Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin. Wear appropriate personal protective equipment as described in Section VIII.

Scrape up wet material and place in an appropriate container. Allow the material to “dry” before disposal. Do not attempt to wash cement down drains. Dispose of waste material by using licensed disposal contractor.

### SECTION VII – HANDLING AND STORAGE

#### **Handling:**

Use personal protective equipment (See Section VIII) when handling Portland cement. Persons using Portland cement should be familiar with its properties and hazards. A key to using the product safely requires the user to recognize that Portland cement reacts chemically with water to produce calcium hydroxide that can cause severe chemical burns.

Avoid actions that generate dust and cause dust to become airborne. Avoid prolonged exposure to dust.

Skin and eye contact with cement should be avoided. Do not get Portland cement inside boots, shoes or gloves. Do not allow wet clothing saturated with cement to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement fluids and launder/clean before reuse. Wash thoroughly after exposure to dust or wet cement mixtures.

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 walls of a confined space and release or fall suddenly. Likewise, do not walk on top of Portland cement stored in vessels, bins, and silos (engulfment hazard).

#### **Storage:**

## SAFETY DATA SHEET: PORTLAND CEMENT

Keep Portland cement dry until used.

### **Further Information:**

Drying Portland cement is hygroscopic (it absorbs water). Portland cement needs water to harden. It will draw water away from any material it contacts, including skin.

Respirable crystalline silica-containing dust may be generated by Portland cement when hardened product is subjected to mechanical forces, such as sanding, crushing, grinding and cutting.

## SECTION VIII – EXPOSURE CONTROL/PERSONAL PROTECTION

### **I. Exposure Guidelines**

Substance Name		<u>OSHA PEL</u>	<u>ACGIH TLV</u>
		mg/m <sup>3</sup>	mg/m <sup>3</sup>
Portland Cement	Total dust	15	-
	Respirable	5	1
Calcium Sulfate (Gypsum)	Total dust	15	-
	Respirable	5	10
Magnesium Oxide (inhalable fraction)		15	10
Calcium Oxide		5	2
Silica (quartz)	Total dust	30/(% silica+2)	-
	Respirable	10/(% silica+2)	0.025
Nuisance dust	Total dust	15	10
	Respirable	5	3

### **II. Engineering Controls:**

Avoid creating dust and actions that cause dust to become airborne. Use general or local exhaust ventilation as required to maintain exposures below appropriate exposure limits. Use product in well-ventilated areas. If ventilation is not adequate, see the respiratory protection recommended in this section.

### **III. Personal Protection Equipment:**

#### ***Eye/face protection***

To prevent eye contact wear safety glasses with side shields, safety goggles or face shield when handling dust or wet cement. Dust goggles should be worn in extremely dusty conditions. Wearing contact lenses when working with cement is not recommended.

#### ***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.

#### ***Skin and 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. Where required 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

## SAFETY DATA SHEET: PORTLAND CEMENT

becomes saturated with cement and immediately was exposes areas.

### ***Respiratory protection***

Ordinarily, a respirator should not be required when handling wet cement. Use NIOSH-approved respirators, when an exposure limit could be exceeded, in poorly ventilated areas, or when dust causes discomfort or irritation. 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.

### **IV. General hygiene considerations**

**Danger:** 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. Wash again at the end of the work shift. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with Portland cement. It should be removed and replaced with clean, dry clothing. Begin each day by wearing clean clothing and conclude the day with a bath or shower.

## SECTION IX – PHYSICAL AND CHEMICAL PROPERTIES

Physical State/Appearance.....	Solid/Powder
Color.....	Gray or white
Odor.....	Odorless
Specific gravity.....	3.15
Flammability.....	Not flammable
Flash point [method].....	Not combustible
Auto ignition temperature.....	Not applicable
Flammable limits (approx. volume % in air).....	Not applicable
Boiling point.....	> 1000°C (1832°F)
Melting point.....	> 1000°C (1832°F)
Decomposition temperature.....	Not determined
pH.....	12 – 13
Solubility (H <sub>2</sub> O).....	Slightly soluble (0.1 – 1.0%)
Vapor pressure.....	Not Applicable
Vapor density.....	Not Applicable

## SECTION X – STABILITY AND REACTIVITY

### **Reactivity**

Reacts slowly with water forming hardened hydrated compounds, releasing heat and producing a strong alkaline solution.

### **Stability**

Stable. Keep dry until used.

### **Incompatible Materials or Conditions**

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

## SAFETY DATA SHEET: PORTLAND CEMENT

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**

None known under normal conditions of storage and use.

### **Hazardous Polymerization**

Will not polymerize.

### **Conditions to avoid**

Contact with Incompatible Materials

## SECTION XI – TOXICOLOGICAL INFORMATION

Other than hazards identified in Section 2, no other known toxicological information available.

## SECTION XII – ECOLOGICAL INFORMATION

### **Eco-toxicity**

Portland cement hardens with water or moisture and is not expected to present unusual eco-toxicity risks to plants or animals. No recognized unusual toxicity to plants or animals.

### **Relevant physical and chemical properties**

(See Sections 9 and 10.)

## SECTION XIII – DISPOSAL CONSIDERATIONS

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 XIV – TRANSPORTATION INFORMATION

	<u>DOT Classification</u>	<u>IMDG</u>	<u>IATA</u>
UN number	Not regulated.	Not regulated.	Not regulated.
Hazard class(es)	—	—	—
Packing group	—	—	—
Environmental hazards	None.	None.	None.
Additional information	—	—	—



**SAFETY DATA SHEET: PORTLAND CEMENT****SECTION XV - REGULATORY INFORMATION****U.S. Federal regulations:****Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200**

Cement may contain hazardous chemicals identified under this regulation, and should be incorporated as appropriate.

**Toxic Substances Control Act (TSCA)**

Cement may contain certain substances identified under the TSCA inventory list, and should be incorporated as appropriate.

**Status under the Federal Hazardous Substances Act (FHSA)**

Cement is a "hazardous substance" subject to statutes promulgated under the FHSA.

**Hazard Category under Superfund Amendments and Reauthorization Act of 1988 (SARA)****(Title III, Sections 311 and 312)**

Cement qualifies as a "hazardous substance" with delayed health effects. See Section 3 for Composition/information on ingredients.

**Hazard categories:**

Immediate hazard – Yes
Delayed hazard – No
Fire hazard – No
Pressure hazard – No
Reactivity hazard – No

**Section 302 extremely hazardous substance(s):** None

**SARA (313) Toxic Release Inventory (40 CFR 372.65):**

This product does not contain any constituents listed under SARA (Title III) Section 313 in amounts requiring supplier notification under 40 CFR Part 372 Subpart C

**CERCLA**

This product is not listed as a CERCLA substance.

**Other Regulations**

<b>Massachusetts:</b>	The following components are listed: cement, portland, chemicals, limestone
<b>New York:</b>	None of the components are listed.
<b>New Jersey:</b>	The following components are listed: cement, portland, chemicals, gypsum, limestone
<b>Pennsylvania:</b>	The following components are listed: cement, portland, chemicals, gypsum, limestone
<b>California: Prop. 65</b>	

**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.

**SECTION XVI – OTHER INFORMATION****Revision date**

June 1, 2015

**Date of previous MSDS**

August 1, 2004

**Other important information**

## **SAFETY DATA SHEET: PORTLAND CEMENT**

A key to using the product safely requires the user to recognize that cement chemically reacts with water, and that some of the intermediate products of this reaction (that is, those present while the cement product is “setting”) pose a far greater hazard than dry cement.

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 the 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 information furnished in this safety data sheet does not address hazards that may be posed by other materials not commonly mixed with Portland cement. Users should review other relevant safety data sheets before working with this Portland cement product.

OTHER THAN AS EXPRESSLY AGREED TO BY SELLER IN WRITING, SELLER MAKES NO WARRANTY, EXPRESS OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OF FITNESS THEREOF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY SELLER. The information provided herein was believed by Seller 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 such 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

## Argos Masonry and Mortar Cement



### 1. IDENTIFICATION

Product Identifier Argos Masonry and Mortar Cement

Synonyms: Cement, Masonry Cement, Mortar cement, Mortar Mix, Parging Mix, U.S. Cement®, Custom Color Masonry Cement, Portland and Lime, Eaglebond®, Superbond™, Types N, O, S or M, MCN or MCS Cement, Trinity® White\* Magnolia® Buff, Dark and Ultra Dark Masonry Cement, Premium Stucco Mix, Florida Super Stucco, Florida Super Masonry, Super-One Stucco and Florida Masonry Cement.

Intended use of the product: Cement is used as a binder in concrete and mortars that are widely used in construction.

Contact: Argos Cement  
3015 Windward Plaza  
Suite 300  
Alpharetta, GA 30005  
mheaton@argos-us.com  
Contact Person: Michael J. Heaton

Contact Information: EMERGENCY TELEPHONE NUMBER (24 hrs): (800)424-9300  
COMPANY CONTACT (business hours): (678)368-4300 (8 AM-4 PM EST)

### 2. HAZARD IDENTIFICATION

According to OSHA 29 CFR 1910.1200 HCS

#### Classification of the Substance or Mixture

Classification (GHS-US):		
Skin Corrosion/Irritation	Category 1	H314
Skin Sensitization	Category 1	H317
Serious Eye Damage/Eye Irritation	Category 1	H318
STOT SE	Category 3	H335
Carcinogenicity	Category 1A	H350
STOT RE	Category 1	H372

#### Labeling Elements



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.
- H372 – Causes damage to lung through prolonged or repeated exposure inhalation.

Precautionary Statements (GHS-US) :

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



Prevention	<p>P201 - Obtain special instructions before use.</p> <p>P202 - Do not handle until all safety precautions have been read and understood</p> <p>P260 - Do not breathe dust/fume/gas/mist/vapors/spray.</p> <p>P264- Wash thoroughly after handling.</p> <p>P270 – Do not eat, drink or smoke when using this product.</p> <p>P271 – Use only outdoors or in a well-ventilated area.</p> <p>P272 - Contaminated work clothing should not be allowed out of the workplace.</p> <p>P280 – Wear protective gloves.</p>
Response	<p>P301+P330+P331 – IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.</p> <p>P303+P361+P353 – IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.</p> <p>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P305+P351+P338 – IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p>P308+P313 - If exposed or concerned: Get medical attention/advice.</p> <p>P310 – Immediate call a POISON CENTER/Doctor.</p> <p>P333+P313 - If skin irritation or a rash occurs: Get medical advice/attention.</p> <p>P363 – Wash contaminated clothing before reuse.</p>
Storage	P403+P233 – Store in a well-ventilated place. Keep container tightly closed.
Disposal	P501- Dispose of contents/container in accordance with local/regional/national/international regulations.

Hazards Not Otherwise Classified: None

### 3. COMPOSITION / INFORMATION ON INGREDIENTS

#### Chemical Composition Information

Name	Product Identifier (Cas#)	% (w/w)	Classification
Portland Cement	65997-15-1	30-75	Skin Irritant 1C, H314 Eye Corr. 1, H318 Skin Sensitization 1, H317 STOT SE 3, H335
Limestone	1317-65-3	0-50	Not Classified
Calcium Hydroxide	1305-62-0	0-75	Skin Irritant 2, H315 Eye Irritant 1, H318
Magnesium Hydroxide	1309-42-8	0-38	Skin Sensitizer 1, H317
Calcium sulfate dehydrate	133397-24-5	5-10	Not Classified
Quartz	14808-60-7	< 10	Carcinogenicity 1A, H350 STOT RE 1, H372
Magnesium oxide	1309-48-4	0-4	Skin Irr. 3 (H316) Eye Irr. 2 (H320) Repro 2 (H361) STOT SE 3 (H335)

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

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



### 4. FIRST AID MEASURES

Route	Measures
Inhalation	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. Inhalation of large amounts of Portland cement requires immediate medical attention. Call a poison center or physician.
Ingestion	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth with water and afterwards drink plenty of water. Get immediate medical attention.
Eye Contact	In case of 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 30 minutes. Chemical burns must be treated promptly by a physician.
Skin Contact	Wash off with plenty of water. Remove contaminated clothing and shoes. Launder contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
Absorption	As with skin contact, remove contaminated clothing and flush with copious amounts of water. Flush affected area for at least 15 minutes to minimize potential for further absorption. Seek medical attention if significant portions of skin have been exposed.

#### Most Important Symptoms

Product becomes alkaline when exposed to moisture and may cause skin burns. May cause serious eye damage. May cause allergic skin reaction. Carcinogen; breathing crystalline silica can cause lung disease, including silicosis and lung cancer. Crystalline silica has also been associated with scleroderma and kidney disease. Inhalation of dusts may cause respiratory irritation or burns.

#### Indication of any immediate medical attention and special treatment needed

Note to physician: Treat symptomatically. Contact poison treatment specialist immediately if large quantities have been ingested or inhaled.

### 5. FIRE-FIGHTING MEASURES

#### Flammable Properties

This product is not flammable or combustible.

#### Extinguishing Media

Use an extinguishing agent suitable for the surrounding fire.

#### Specific Hazards / Products of Combustion

No specific fire or explosion hazard.

#### Special Precautions and Protective Equipment for Firefighters

Move containers from fire area if this can be done without risk. Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA) with a full face-piece operated in positive pressure mode.

See Section 9 for fire properties of this chemical including flash point, autoignition temperature, and explosive limits

### 6. ACCIDENTAL RELEASE MEASURES

#### Personal Precautions

Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust from the spilled material. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing. See Section 8 for additional information.

#### Environmental Precautions

Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Inform the relevant authorities if reportable thresholds have entered the environment, including waterways, soil or air. Materials can enter

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



waterways through drainage systems.

### Containment and Clean-Up Methods

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. Large spills to waterways may be hazardous due to alkalinity of the product. Dispose of waste material using a licensed waste disposal contractor

## 7. HANDLING AND STORAGE

### Handling Precautions

Avoid contact with eyes, skin, or clothing. This product contains quartz, 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. 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. 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.

### Storage

Keep container tightly closed in a dry and well-ventilated place. Avoid contact with water and moisture. Keep away from food, drink and animal feeding stuffs. Keep out of the reach of children.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Occupational Exposure Limits

#### US. ACGIH Threshold Limit Values

##### Components Type Value Form

Calcium Hydroxide: TWA 5 mg/m<sup>3</sup>

(CAS# 1305-62-0)

Calcium sulfate dehydrate: TWA 10 mg/m<sup>3</sup> Inhalable fraction.

(CAS# 13397-24-5)

Magnesium oxide: TWA 10 mg/m<sup>3</sup> Inhalable fraction.

(CAS# 1309-48-4)

Portland cement TWA 1 mg/m<sup>3</sup> Respirable fraction.

(CAS# 65997-15-1)

Quartz: TWA 0.025 mg/m<sup>3</sup> Respirable fraction.

(CAS# 14808-60-7)

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

##### Components Type Value Form

Calcium Hydroxide: PEL 5 mg/m<sup>3</sup> Respirable fraction.

(CAS# 1305-62-0)

Calcium sulfate dehydrate: PEL 5 mg/m<sup>3</sup> Respirable fraction 15 mg/m<sup>3</sup> Total dust.

(CAS# 13397-24-5)

Limestone: PEL 5 mg/m<sup>3</sup> Respirable fraction 15 mg/m<sup>3</sup> Total dust.

(CAS# 1317-65-3)

Magnesium oxide: PEL 15 mg/m<sup>3</sup> Total particulate.

(CAS# 1309-48-4)

Portland cement: PEL 5 mg/m<sup>3</sup> Respirable fraction 15 mg/m<sup>3</sup> Total dust.

(CAS# 65997-15-1)

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

##### Components Type Value Form

Portland cement: TWA 50 mppcf

(CAS# 65997-15-1)

Quartz: TWA 0.3 mg/m<sup>3</sup> Total dust, 0.1 mg/m<sup>3</sup> Respirable, 2.4 mppcf Respirable.

(CAS# 14808-60-7)

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



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

#### **Components Type Value Form**

Calcium Hydroxide: TWA 5 mg/m<sup>3</sup>  
(CAS# 1305-62-0)  
Calcium sulfate dehydrate: TWA 10 mg/m<sup>3</sup>  
(CAS# 13397-24-5)  
Limestone: TWA 10 mg/m<sup>3</sup>  
(CAS# 1317-65-3)  
Magnesium oxide: TWA 10 mg/m<sup>3</sup> Fume.  
(CAS# 1309-48-4)  
Portland cement: TWA 10 mg/m<sup>3</sup>  
(CAS# 65997-15-1)  
Quartz: TWA 0.025 mg/m<sup>3</sup> Respirable particles.  
(CAS# 14808-60-7)

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

#### **Components Type Value Form**

Calcium Hydroxide: TWA 5 mg/m<sup>3</sup>  
(CAS# 1305-62-0)  
Calcium sulfate dihydrate: STEL 20 mg/m<sup>3</sup> Total dust, TWA 10 mg/m<sup>3</sup> Inhalable  
(CAS#13397-24-5)  
Limestone: STEL 20 mg/m<sup>3</sup> Total dust, TWA 3 mg/m<sup>3</sup> Respirable fraction 10 mg/m<sup>3</sup> Total dust.  
(CAS# 1317-65-3)  
Magnesium oxide: STEL 10 mg/m<sup>3</sup> Respirable dust and/or fume, TWA 3 mg/m<sup>3</sup> Respirable dust and/or fume, 10 mg/m<sup>3</sup> Inhalable fume.  
(CAS# 1309-48-4)  
Portland cement: TWA 3 mg/m<sup>3</sup> Respirable fraction, 10 mg/m<sup>3</sup> Total dust.  
(CAS# 65997-15-1)  
Quartz TWA 0.025 mg/m<sup>3</sup> Respirable fraction.  
(CAS# 14808-60-7)

### **Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

#### **Components Type Value Form**

Calcium Hydroxide: TWA 5 mg/m<sup>3</sup>  
(CAS# 1305-62-0)  
Calcium sulfate dehydrate: TWA 10 mg/m<sup>3</sup> Inhalable fraction.  
(CAS# 13397-24-5)  
Magnesium oxide: TWA 10 mg/m<sup>3</sup> Inhalable fraction.  
(CAS# 1309-48-4)  
Portland cement: TWA 10 mg/m<sup>3</sup>  
(CAS# 65997-15-1)  
Quartz: TWA 0.1 mg/m<sup>3</sup> Respirable.  
(CAS# 14808-60-7)

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

#### **Components Type Value Form**

Calcium Hydroxide: TWA 5 mg/m<sup>3</sup>  
(CAS# 1305-62-0)  
Calcium sulfate dehydrate: TWA 5 mg/m<sup>3</sup> Respirable dust, 10 mg/m<sup>3</sup> Total dust.  
(CAS# 13397-24-5)  
Limestone: TWA 10 mg/m<sup>3</sup> Total dust.  
(CAS# 1317-65-3)  
Magnesium oxide: TWA 10 mg/m<sup>3</sup> Fume.

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



(CAS# 1309-48-4)  
Portland cement: TWA 5 mg/m<sup>3</sup> Respirable dust, 10 mg/m<sup>3</sup> Total dust.  
(CAS# 65997-15-1)  
Quartz: TWA 0.1 mg/m<sup>3</sup> Respirable dust.  
(CAS# 14808-60-7)

### Mexico. Occupational Exposure Limit Values

#### Components Type Value Form

Calcium Hydroxide: TWA 5 mg/m<sup>3</sup>  
(CAS# 1305-62-0)  
Calcium sulfate dehydrate: TWA 10 mg/m<sup>3</sup>  
(CAS# 13397-24-5)  
Limestone: STEL 20 mg/m<sup>3</sup>, TWA 10 mg/m<sup>3</sup>  
(CAS# 1317-65-3)  
Magnesium oxide: TWA 10 mg/m<sup>3</sup> Fume.  
(CAS# 1309-48-4)  
Portland cement: STEL 20 mg/m<sup>3</sup>, TWA 10 mg/m<sup>3</sup>  
(CAS# 65997-15-1)  
Quartz: TWA 0.1 mg/m<sup>3</sup>  
(CAS# 14808-60-7)

### Engineering Controls

Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled. Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. 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. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.

### Personal Protective Equipment

Exposure	Equipment
Eye / Face	To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Contact lenses should not be worn when working with cement or cement products.
Skin	Wear chemical-resistant gloves, footwear and protective clothing appropriate for risk of exposure. Contact glove manufacturer for specific information. Do not rely on barrier crèmes; barrier crèmes should not be used in place of gloves.
Respiratory	Avoid tasks which cause dust to become airborne. Use local or general ventilation to control exposure below applicable exposure limits. Use NIOSH/MSHA approved (30 CFR 11) or NIOSH approved (42 CFR 84) respirators in poorly ventilated areas, or if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation.
General Hygiene considerations	Periodically wash affected areas contacted by dry or wet cement products with a pH neutral soap. When using, do not eat, drink, or smoke. Wash again at the end of work. If clothing becomes saturated with wet cement products, it should be removed and replaced with clean dry clothing.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

Property	Value	Comments
Appearance	Solid Gray, buff or white powder	
Physical State	Solid	
Odor	Odorless	



# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



Property	Value	Comments
Odor Threshold	Not available	
pH	12-13 in water	
Melting / Freeze Point	Not available	
Boiling Point And Range	> 1832 °F (> 1000 °C)	
Flash Point	Not flammable. Not combustible.	
Evaporation Rate	Not available	
Flammability	Not available	
Flammability Limits	Not available	
Vapor Pressure	Not available	
Vapor Density	Not available	
Specific Gravity	2.65-3.15	
Solubility	Slight (0.1-1%)	
Partition Coefficient	Not available	
Autoignition Temperature	Not available	
Decomposition Temperature	Not available	
Viscosity	Not available	
Percent Volatiles	Not available	

## 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.

### Stability

The product is stable under normal conditions of use, storage and transport.

### Reactions / Polymerization

Not expected to occur

### Conditions to Avoid

Contact with incompatible materials. When exposed to air it will absorb carbon dioxide to form calcium carbonate and magnesium oxide. When heated at temperatures above 580 deg. C, it loses water to form calcium oxide, magnesium oxide and water.

### Incompatible Materials

Wet material is alkaline and will react with acids, ammonium salts, aluminum and other reactive metals. Hardened material is attacked by hydrofluoric acid releasing toxic silicon tetrafluoride gas.

### Hazardous Decomposition Products

None expected under normal conditions of use.

## 11. TOXICOLOGICAL INFORMATION

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



**Acute Effects:** Product becomes alkaline when exposed to moisture. Contact with wet concrete can burn skin and eyes. Dust from the dry material can cause irritation and possible burns to the eyes and respiratory tract. Symptoms can be delayed.

### Acute Toxicity (Inhalation LC50)

Portland cement (CAS# 65997-15-1): >1 mg/L (rat, 4hr)  
Limestone (CAS# 1317-65-3): LC50 > 3 mg/L (rat, 4 hr) (Similar substance)  
Calcium Hydroxide (CAS# 1305-62-0): No data available  
Calcium Sulfate dehydrate (CAS# 13397-24-5): LC50 > 3.26 mg/L air (inhalation, dust, 4 h)  
Magnesium Oxide (CAS# 1309-48-4): No data available  
Quartz (CAS# 14808-60-7): No data available

### Acute Toxicity (Oral LC50)

Portland cement (CAS# 65997-15-1): No data available  
Limestone (CAS# 1317-65-3): LD50 6450 mg/kg (rat) (similar substance)  
Calcium Hydroxide (CAS# 1305-62-0): LD50 7340 mg/kg (rat)  
Calcium Sulfate dehydrate (CAS# 13397-24-5): LD50 > 2000 mg/kg (rat)  
Magnesium Oxide (CAS# 1309-48-4): LD50 3870 mg/kg (rat)  
Quartz (CAS# 14808-60-7): LD50 500 mg/kg (rat)

### Acute Toxicity (Dermal LC50)

Portland cement (CAS# 65997-15-1): No data available  
Limestone (CAS# 1317-65-3): LD50 > 2000 mg/kg (Similar substance)  
Calcium Hydroxide (CAS# 1305-62-0): LD50 > 2500 mg/kg  
Calcium Sulfate dehydrate (CAS# 13397-24-5): No data available  
Magnesium Oxide (CAS# 1309-48-4): No data available  
Quartz (CAS# 14808-60-7): No data available

**Skin Corrosion/Irritation:** May cause skin irritation. May cause serious burns in the presence of moisture.

**Serious Eye Damage/Irritation:** Causes serious eye damage. May cause burns in the presence of moisture.

**Respiratory or Skin Sensitization:** May cause respiratory tract irritation. The product may contain chromates, which may cause an allergic skin sensitization reaction.

**Germ Cell Mutagenicity:** No data available.

**Carcinogenicity:** Cement may contain trace amounts of respirable crystalline silica and hexavalent chromium which are classified by NTP and IARC as known human carcinogens.

### ACGIH Carcinogens

Magnesium oxide (CAS# 1309-48-4): A4 Not classifiable as a human carcinogen.  
Portland cement (CAS# 65997-15-1): A4 Not classifiable as a human carcinogen  
Quartz (CAS# 14808-60-7): A2 Suspected human carcinogen.

### IARC Monographs. Overall Evaluation of Carcinogenicity

Quartz (CAS# 14808-60-7): 1 Carcinogenic to humans.

### US NTP Report on Carcinogens: Known carcinogen

Quartz (CAS# 14808-60-7): Known To Be Human Carcinogen.

### US OSHA Specifically Regulated Substances: Cancer hazard

No data available.

**Teratogenicity:** No data available.

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



**Specific Target Organ Toxicity (Repeated Exposure):** Quartz (CAS #14808-60-7): Category 1, route of exposure: inhalation, target organs: respiratory tract and organs.

**Specific Target Organ Toxicity (Single Exposure):** Magnesium oxide, Portland cement; Category 3, route of exposure: inhalation and skin contact, target organs: Respiratory tract irritation, skin irritation.

**Aspiration Hazard:** No data available.

**Potential Health Effects:** Causes serious eye damage. May cause respiratory irritation. Causes severe burns. May cause an allergic skin reaction. Ingestion: May cause burns to mouth, throat and stomach. May cause nausea, stomach pain and vomiting.

**Chronic effects:** Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs. Some studies show excess numbers of cases of scleroderma, connective tissue disorders, lupus, rheumatoid arthritis, chronic kidney diseases and end-stage kidney disease in workers exposed to respirable crystalline silica. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. Danger of serious damage to health by prolonged exposure.

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. Portland cement (CAS# 65997-15-1): is not classifiable as a human carcinogen.

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.

## 12. ECOLOGICAL INFORMATION

### Toxicity:

Data for Mixture: Argos Masonry and Mortar Cement

Aquatic Toxicity- Acute Crustacea EC50 Daphnia 350 mg/l, 48 hours, estimated  
Fish LC50 Fish 1058.886 mg/l, 96 hours, estimated

Data for Component: Calcium Hydroxide (CAS# #1305-62-0)

Aquatic Toxicity-Acute Gasterosteus aculeatus 96 hr LC50 = 457 mg/L  
Oncorhynchus mykiss 96 hr LC50 = 50.6 mg/L  
Crangon septemspinosa 96 hr LC50 = 158 mg/L  
Daphnia magna 48 hr EC50 = 49.1 mg/L  
Daphnia magna 48 h EC50 > 100 mg/L  
Danio rerio 96 h LC50 > 11.1 mg/L

Aquatic Toxicity- Crangon septemspinosa 14 d NOEC = 32 mg/L

Data for Component: Calcium sulfate dihydrate (CAS# 13397-24-5)

Aquatic Toxicity-Acute Fish LC50 Fathead minnow (Pimephales promelas) > 1970 mg/l, 96 hours

Data for Component: Quartz (CAS# 14808-60-7)

Aquatic Toxicity- Acute Daphnia magna 24 hr LL50 > 10000 mg/L  
Danio rerio 96 hr LL0 = 10000 mg/L Daphnia magna 48 hr EC50 > 100 mg/L (similar substance)  
Desmodesmus subspicatus 72 hr EC50 > 14 mg/L (similar substance)

Aquatic Toxicity –Chronic- No data available.

**Persistence and Degradation:** No data available.

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



**Bioaccumulative Potential:** No data available.

**Mobility in Soil:** No data available.

**Other Adverse Effects:** No data available.

**Other Information:** No data available.

### 13. DISPOSAL CONSIDERATIONS

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.

### 14. TRANSPORT INFORMATION

#### US DOT

UN Identification Number	Not regulated
Proper Shipping Name	Not available
Hazard Class and Packing Group	Not available
Shipping Label	Not available
Placard / Bulk Package	Not available
Emergency Response Guidebook Guide Number	Not available

#### IATA Cargo

UN Identification Number	Not regulated
Shipping Name / Description	Not available
Hazard Class and Packing Group	Not available
ICAO Label	Not available
Packing Instructions Cargo	Not available
Max Quantity Per Package Cargo	Not available

#### IATA Passenger

UN Identification Number	Not regulated
Shipping Name / Description	Not available
Hazard Class and Packing Group	Not available
ICAO Label	Not available
Packing Instructions Passenger	Not available
Max Quantity Per Package	Not available

#### IMDG

UN Identification Number	Not regulated
Shipping Name / Description	Not available
Hazard Class and Packing Group	Not available
IMDG Label	Not available
EmS Number	Not available
Marine Pollutant	Not available

### 15. REGULATORY INFORMATION

#### OSHA Hazard Communication Standard

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

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



### U.S. Federal, State, and Local Regulatory Information

#### U.S. Toxic Substances Control Act

All components are on the U.S. EPA TSCA Inventory List

TSCA Section 12(b) Export Notification (40 CFR 707, Subpt. D): Not regulated

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

This product is not listed as a CERCLA substance.

#### SARA Section 313- Supplier Notification

This product does not contain any toxic chemicals subject to the reporting requirements of section 313 of the Emergency Planning and Community Right-To-Know Act (EPCRA) of 1986 and of 40 CFR 372.

#### Superfund Amendments and Reauthorization Act of 1986 Title III (Emergency Planning and Community Right-to-Know Act of 1986) Sections 311 and 312

Immediate Hazard (Acute) - Yes

Delayed Hazard (Chronic) – Yes

Fire Hazard - No

Pressure Hazard - No

Reactivity Hazard - No

Section 302 extremely hazardous substance (40 CFR 355, Appendix A)-No

Drug Enforcement Administration (DEA) (21 CFR1308.11-15)-Not controlled

**State regulations** WARNING: This product contains chemical(s) known to the State of California to cause cancer.

#### US - California Hazardous Substances (Director's):

Calcium Hydroxide (CAS# 1305-62-0)

Magnesium oxide (CAS# 1309-48-4)

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

Quartz (CAS# 14808-60-7)

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

Quartz (CAS# 14808-60-7) Listed: October 1, 1988 Carcinogenic.

#### US - New Jersey RTK - Substances: Listed substance

Calcium Hydroxide (CAS# 1305-62-0)

Calcium sulfate dihydrate (CAS# 13397-24-5)

Limestone (CAS# 1317-65-3)

Magnesium oxide (CAS# 1309-48-4)

Portland cement (CAS# 65997-15-1)

Quartz (CAS# 14808-60-7)

#### US - Pennsylvania RTK - Hazardous Substances: Listed substance

Calcium Hydroxide (CAS# 1305-62-0)

Calcium sulfate dihydrate (CAS# 13397-24-5)

Limestone (CAS# 1317-65-3)

Magnesium oxide (CAS# 1309-48-4)

Portland cement (CAS# 65997-15-1)

Quartz (CAS# 14808-60-7)

#### US. Massachusetts RTK - Substance List

Calcium Hydroxide (CAS# 1305-62-0)

Calcium sulfate dihydrate (CAS# 13397-24-5)

Limestone (CAS# 1317-65-3)

Magnesium oxide (CAS# 1309-48-4)

Portland cement (CAS# 65997-15-1)

Quartz (CAS# 14808-60-7)

### Canadian 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.

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



### WHMIS status

Controlled

### WHMIS classification

D2A - Other Toxic Effects-VERY TOXIC

E – Corrosive

### WHMIS labeling



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

## 16. OTHER INFORMATION

**Further information** A HMIS® Health rating including an \* indicates a chronic hazard

### HMIS® ratings

Health: 3\*

Flammability: 0

Physical hazard: 0

### NFPA ratings

Health: 3

Flammability: 0

Instability: 0

Version:

2016.01.20

Issue Date:

1/20/2015

Prior Issue Date:

5/26/2015

# SAFETY DATA SHEET

## Argos Masonry and Mortar Cement



### Description of Revisions

Revise to meet Globally Harmonized System for chemical hazard communication requirements pursuant to OSHA regulatory revisions 77 FR 17884, March 26, 2012.

### 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 **(Name of Company)**, except that the product shall conform to contracted specifications. The information provided herein was believed by the **(Name of Company)** 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

### 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 \*\*

# MATERIAL SAFETY DATA SHEET



## 1. Product and Company Identification

<b>Material name</b>	<b>Portland Cement (cement)</b>
<b>Version #</b>	02
<b>Issue date</b>	12-20-2011
<b>Revision date</b>	10-12-2012
<b>Supersedes date</b>	12-20-2011
<b>CAS #</b>	Mixture
<b>Product use</b>	Cement is used as a binder in concrete and mortars that are widely used in construction.
<b>Synonym(s)</b>	Cement, Portland Cement, Hydraulic Cement, Oil Well Cement, Trinity® White Cement, Antique White Cement, Portland Limestone Cement, * Portland Cement Type I, IA, IL, 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, OWG Class G HSR Includes Florida Portland Cement Type I/II, III and White Portland Type I.
<b>Manufacturer/Supplier</b>	Argos Cement 3015 Windward Plaza Drive Suite 300 Alpharetta, GA 30005 mheaton@argos-us.com Contact Person: Michael J. Heaton
<b>Telephone number</b>	(678)368-4300 (8 AM-4 PM EST)
<b>Emergency</b>	3E Hotline 1-800-451-8346

## 2. Hazards Identification

<b>Physical state</b>	Solid.
<b>Appearance</b>	Gray, off-white or white powder.
<b>Emergency overview</b>	<b>WARNING!</b> Product becomes alkaline when exposed to moisture. Contact with wet concrete can burn skin and eyes. Dust from the dry material can cause irritation and possible burns to the eyes and respiratory tract.
<b>OSHA regulatory status</b>	This product is considered hazardous under 29 CFR 1910.1200 (Hazard Communication).
<b>Potential health effects</b>	
<b>Routes of exposure</b>	Inhalation. Ingestion. Skin contact. Eye contact.
<b>Eyes</b>	Contact may irritate or burn eyes. Eye contact may result in corneal injury.
<b>Skin</b>	Contact may irritate or burn skin. Symptoms may be delayed. The product may contain chromates, which may cause an allergic skin sensitization reaction. Frequent or prolonged contact may defat and dry the skin, leading to discomfort and dermatitis.
<b>Inhalation</b>	Inhalation of dusts may cause respiratory irritation or burns. May cause cancer by inhalation.
<b>Ingestion</b>	Irritating. May cause nausea, stomach pain and vomiting.
<b>Target organs</b>	Eyes. Lungs. Respiratory system. Skin.
<b>Chronic effects</b>	Cement may contain trace amounts of respirable crystalline silica and hexavalent chromium which are classified by NTP and IARC as known human carcinogens. This product has the potential for generation of respirable dust during handling and use. Dust may contain respirable crystalline silica. Overexposure to dust may result in pneumoconiosis, a respiratory disease caused by inhalation of mineral dust, which can lead to fibrotic changes to the lung tissue, or silicosis, a respiratory disease caused by inhalation of silica dust, which can lead to inflammation and fibrosis of the lung tissue. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. May cause delayed lung injury.
<b>Signs and symptoms</b>	Conjunctivitis. Corneal damage. Shortness of breath. Coughing. Discomfort in the chest. Irritation of eyes and mucous membranes. Irritation of nose and throat. Skin irritation. Rash. Defatting of the skin.
<b>Potential environmental effects</b>	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.



### 3. Composition / Information on Ingredients

Components	CAS #	Percent
Portland cement	65997-15-1	50-98
Limestone	1317-65-3	0-15
Calcium sulfate dihydrate	13397-24-5	2-10
Calcium oxide	1305-78-8	0-5
Magnesium oxide	1309-48-4	0-4
Quartz	14808-60-7	0-0.2

**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

<b>Eye contact</b>	Immediately rinse eyes with water. Remove any contact lenses, and continue flushing eyes with running water for at least 15 minutes. Hold eyelids apart to ensure rinsing of the entire surface of the eye and lids with water. Get immediate medical attention.
<b>Skin contact</b>	Wash off with plenty of water. Remove contaminated clothing and shoes. Launder contaminated clothing before reuse. If skin irritation or rash occurs: Get medical advice/attention.
<b>Inhalation</b>	Inhalation of wet product not foreseeable route of exposure. If dust from the material is inhaled, remove the affected person immediately to fresh air. Get medical attention if irritation or symptoms persist.
<b>Ingestion</b>	Never give anything by mouth to an unconscious person. Do not induce vomiting. Rinse mouth with water and afterwards drink plenty of water. Get immediate medical attention.

**Notes to physician** Provide general supportive measures and treat symptomatically. Persons with impaired lung function may be more susceptible to the effects of this material.

### 5. Fire Fighting Measures

**Flammable properties** This product is not flammable or combustible.

#### Extinguishing media

<b>Suitable extinguishing media</b>	Use fire-extinguishing media appropriate for surrounding materials.
<b>Unsuitable extinguishing media</b>	None.

#### Protection of firefighters

<b>Protective equipment and precautions for firefighters</b>	Use protective equipment appropriate for surrounding materials.
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**Fire fighting equipment/instructions** None.

### 6. Accidental Release Measures

**Personal precautions** Keep unnecessary personnel away. Wear appropriate protective equipment and clothing during clean-up. Avoid inhalation of dust from the spilled material. Use a NIOSH/MSHA approved respirator if there is a risk of exposure to dust at levels exceeding the exposure limits. Do not touch damaged containers or spilled material unless wearing appropriate protective clothing.

**Environmental precautions** Prevent further leakage or spillage if safe to do so.

**Methods for containment** 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. Prevent entry into waterways, sewers, basements or confined areas.

**Methods for cleaning up** For a dry material spill, use a HEPA (high efficiency particle air) vacuum to collect material and place in a sealable container for disposal. Avoid dust formation. For a wet spill, absorb or cover with dry earth, sand or other non-combustible material and transfer to containers for disposal. Neutralize the spill area. Use materials that can withstand the potentially corrosive nature of this product. Do not get water inside containers.

**Other information** Clean up in accordance with all applicable regulations.

## 7. Handling and Storage

### Handling

Wear personal protective equipment. Handle and open container with care. Minimize dust generation and accumulation. Do not breathe dust. Do not get in eyes, on skin, on clothing. Avoid prolonged exposure. Use only with adequate ventilation. Wash thoroughly after handling. See Section 8 of the MSDS for Personal Protective Equipment.

### Storage

Keep container tightly closed in a dry and well-ventilated place. Avoid contact with water and moisture. Keep away from food, drink and animal feedingstuffs. Keep out of the reach of children.

## 8. Exposure Controls / Personal Protection

### Occupational exposure limits

#### US. ACGIH Threshold Limit Values

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Calcium sulfate dihydrate (CAS 13397-24-5)	TWA	10 mg/m3	Inhalable fraction.
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.
Portland cement (CAS 65997-15-1)	TWA	1 mg/m3	Respirable fraction.
Quartz (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable fraction.

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

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	PEL	5 mg/m3	
Calcium sulfate dihydrate (CAS 13397-24-5)	PEL	5 mg/m3	Respirable fraction.
Limestone (CAS 1317-65-3)	PEL	15 mg/m3	Total dust.
		5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.
Magnesium oxide (CAS 1309-48-4)	PEL	15 mg/m3	Total particulate.
Portland cement (CAS 65997-15-1)	PEL	5 mg/m3	Respirable fraction.
		15 mg/m3	Total dust.

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

Components	Type	Value	Form
Portland cement (CAS 65997-15-1)	TWA	50 mppcf	
Quartz (CAS 14808-60-7)	TWA	0.3 mg/m3	Total dust.
		0.1 mg/m3	Respirable.
		2.4 mppcf	Respirable.

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

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Calcium sulfate dihydrate (CAS 13397-24-5)	TWA	10 mg/m3	
Limestone (CAS 1317-65-3)	TWA	10 mg/m3	
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Fume.
Portland cement (CAS 65997-15-1)	TWA	10 mg/m3	
Quartz (CAS 14808-60-7)	TWA	0.025 mg/m3	Respirable particles.

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

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Calcium sulfate dihydrate (CAS 13397-24-5)	STEL	20 mg/m3	Total dust.
Limestone (CAS 1317-65-3)	TWA	10 mg/m3	Inhalable
	STEL	20 mg/m3	Total dust.
	TWA	3 mg/m3	Respirable fraction.
		10 mg/m3	Total dust.
Magnesium oxide (CAS 1309-48-4)	STEL	10 mg/m3	Respirable dust and/or fume.
	TWA	3 mg/m3	Respirable dust and/or fume.
Portland cement (CAS 65997-15-1)		10 mg/m3	Inhalable fume.
	TWA	3 mg/m3	Respirable fraction.
Quartz (CAS 14808-60-7)		10 mg/m3	Total dust.
	TWA	0.025 mg/m3	Respirable fraction.

**Canada. Ontario OELs. (Control of Exposure to Biological or Chemical Agents)**

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Calcium sulfate dihydrate (CAS 13397-24-5)	TWA	10 mg/m3	Inhalable fraction.
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Inhalable fraction.
Portland cement (CAS 65997-15-1)	TWA	10 mg/m3	
Quartz (CAS 14808-60-7)	TWA	0.1 mg/m3	Respirable.

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

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Calcium sulfate dihydrate (CAS 13397-24-5)	TWA	5 mg/m3	Respirable dust.
Limestone (CAS 1317-65-3)		10 mg/m3	Total dust.
	TWA	10 mg/m3	Total dust.
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Fume.
Portland cement (CAS 65997-15-1)	TWA	5 mg/m3	Respirable dust.
Quartz (CAS 14808-60-7)		10 mg/m3	Total dust.
	TWA	0.1 mg/m3	Respirable dust.

**Mexico. Occupational Exposure Limit Values**

Components	Type	Value	Form
Calcium oxide (CAS 1305-78-8)	TWA	2 mg/m3	
Calcium sulfate dihydrate (CAS 13397-24-5)	TWA	10 mg/m3	
Limestone (CAS 1317-65-3)	STEL	20 mg/m3	
	TWA	10 mg/m3	
Magnesium oxide (CAS 1309-48-4)	TWA	10 mg/m3	Fume.
Portland cement (CAS 65997-15-1)	STEL	20 mg/m3	
Quartz (CAS 14808-60-7)	TWA	10 mg/m3	
	TWA	0.1 mg/m3	

<b>Exposure guidelines</b>	Occupational exposure to nuisance dust (total and respirable) and respirable crystalline silica should be monitored and controlled.
<b>Engineering controls</b>	Use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. 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. If material is ground, cut, or used in any operation which may generate dusts, use appropriate local exhaust ventilation to keep exposures below the recommended exposure limits.
<b>Personal protective equipment</b>	
<b>Eye / face protection</b>	In situations where there is potential splash or puff exposure of cement products, wear safety glasses with side shields or goggles. In extremely dusty or unpredictable environments wear unvented or indirectly vented goggles. Contact lenses should not be worn when working with cement or cement products.
<b>Skin protection</b>	Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened wet Portland cement products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened Portland cement products might occur, wear impervious clothing and gloves to prevent skin contact. Wear sturdy boots that are impervious to water and eliminate foot and ankle exposure. Do not rely on barrier crèmes; barrier crèmes should not be used in place of gloves.
<b>Respiratory protection</b>	Avoid tasks which cause dust to become airborne. Use local or general ventilation to control exposure below applicable exposure limits. Use NIOSH/MSHA approved (30 CFR 11) or NIOSH approved (42 CFR 84) respirators in poorly ventilated areas, or if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation.
<b>General hygiene considerations</b>	Periodically wash affected areas contacted by dry or wet cement products with a pH neutral soap. When using, do not eat, drink, or smoke. Wash again at the end of work. If clothing becomes saturated with wet cement products, it should be removed and replaced with clean dry clothing.

## 9. Physical & Chemical Properties

<b>Appearance</b>	Gray, off-white or white powder.
<b>Physical state</b>	Solid.
<b>Form</b>	Solid.
<b>Color</b>	Gray, off-white, and white.
<b>Odor</b>	Odorless.
<b>Odor threshold</b>	Not available.
<b>pH</b>	12 - 13 In water.
<b>Vapor pressure</b>	Not available.
<b>Vapor density</b>	Not available.
<b>Boiling point</b>	> 1832 °F (> 1000 °C)
<b>Melting point/Freezing point</b>	Not available.
<b>Solubility (water)</b>	Slight (0.1-1%)
<b>Specific gravity</b>	3.15
<b>Flash point</b>	Not available.
<b>Flammability limits in air, upper, % by volume</b>	Not available.
<b>Flammability limits in air, lower, % by volume</b>	Not available.
<b>Auto-ignition temperature</b>	Not available.

## 10. Chemical Stability & Reactivity Information

<b>Chemical stability</b>	The product is stable under normal conditions of use, storage and transport.
<b>Conditions to avoid</b>	Contact with incompatible materials. Exposure to moisture may affect product quality.
<b>Incompatible materials</b>	Wet material is alkaline and will react with acids, ammonium salts, aluminum and other reactive metals. Hardened material is attacked by hydrofluoric acid releasing toxic silicon tetrafluoride gas.
<b>Hazardous decomposition products</b>	None expected under normal conditions of use.
<b>Possibility of hazardous reactions</b>	Reacts with incompatible materials.

## 11. Toxicological Information

<b>Sensitization</b>	The product may contain chromates, which may cause an allergic skin sensitization reaction.	
<b>Acute effects</b>	Product becomes alkaline when exposed to moisture. Contact with wet concrete can burn skin and eyes. Dust from the dry material can cause irritation and possible burns to the eyes and respiratory tract. Symptoms can be delayed.	
<b>Chronic effects</b>	Respirable crystalline silica (quartz) can cause silicosis, a fibrosis (scarring) of the lungs. Some studies show excess numbers of cases of scleroderma, connective tissue disorders, lupus, rheumatoid arthritis, chronic kidney diseases and end-stage kidney disease in workers exposed to respirable crystalline silica. Occupational exposure to respirable dust and respirable crystalline silica should be monitored and controlled. Prolonged or repeated skin contact may produce severe irritation or dermatitis. Inhalation of powder/dust may cause lung edema. Danger of serious damage to health by prolonged exposure.	
<b>Carcinogenicity</b>	Cement may contain trace amounts of respirable crystalline silica and hexavalent chromium which are classified by NTP and IARC as known human carcinogens.	
<b>ACGIH Carcinogens</b>		
	Magnesium oxide (CAS 1309-48-4)	A4 Not classifiable as a human carcinogen.
	Portland cement (CAS 65997-15-1)	A4 Not classifiable as a human carcinogen.
	Quartz (CAS 14808-60-7)	A2 Suspected human carcinogen.
<b>IARC Monographs. Overall Evaluation of Carcinogenicity</b>		
	Hexavalent chromium compounds (CAS -)	1 Carcinogenic to humans.
	Quartz (CAS 14808-60-7)	1 Carcinogenic to humans.
<b>US NTP Report on Carcinogens: Known carcinogen</b>		
	Hexavalent chromium compounds (CAS -)	Known To Be Human Carcinogen.
	Quartz (CAS 14808-60-7)	Known To Be Human Carcinogen.
<b>US. OSHA Specifically Regulated Substances (29 CFR 1910.1001-1050)</b>		
	Hexavalent chromium compounds (CAS -)	Cancer hazard.

## 12. Ecological Information

### Ecotoxicological data

Product	Species		Test Results
Portland Cement (cement) (CAS Mixture)			
Aquatic			
Crustacea	EC50	Daphnia	350 mg/l, 48 hours, estimated
Components	Species		Test Results
Calcium sulfate dihydrate (CAS 13397-24-5)			
Aquatic			
Fish	LC50	Fathead minnow (Pimephales promelas)	> 1970 mg/l, 96 hours
Ecotoxicity	Not available.		
Environmental effects	An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.		
	Not available.		
Persistence and degradability	Not available.		
Bioaccumulation / Accumulation	Not available.		

## 13. Disposal Considerations

<b>Disposal instructions</b>	Dispose in accordance with applicable federal, state, and local regulations. Empty containers may contain product residues. Do not dispose of waste into sewer. This material and its container must be disposed of as hazardous waste.
<b>Waste from residues / unused products</b>	Not applicable.

## 14. Transport Information

### DOT

Not regulated as a hazardous material by DOT.

### IATA

Not regulated as dangerous goods.

**IMDG**

Not regulated as dangerous goods.

**TDG**

Not regulated as dangerous goods.

**15. Regulatory Information****US federal regulations**

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

All components are on the U.S. EPA TSCA Inventory List.

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

Hexavalent chromium compounds (CAS -) 0.1 % Annual Export Notification required.

**Clean Air Act (CAA) Section 112 Hazardous Air Pollutants (HAPs) List**

Hexavalent chromium compounds (CAS -)

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

Hexavalent chromium compounds (CAS -) 0.1 % N090

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

None

**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

**Section 311/312 (40 CFR 370)**

No

**Drug Enforcement Administration (DEA) (21 CFR 1308.11-15)**

Not controlled

**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.

**WHMIS status**

Controlled

**WHMIS classification**

D2A - Other Toxic Effects-VERY TOXIC  
E - Corrosive

**WHMIS labeling****Inventory status****Country(s) or region****Inventory name****On inventory (yes/no)\***

Australia	Australian Inventory of Chemical Substances (AICS)	Yes
Canada	Domestic Substances List (DSL)	No
Canada	Non-Domestic Substances List (NDSL)	Yes
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)	No
Korea	Existing Chemicals List (ECL)	Yes
New Zealand	New Zealand Inventory	Yes

Country(s) or region	Inventory name	On inventory (yes/no)*
Philippines	Philippine Inventory of Chemicals and Chemical Substances (PICCS)	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)

**State regulations** WARNING: This product may contain 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**

Calcium oxide (CAS 1305-78-8)	Listed.
Hexavalent chromium compounds (CAS -)	Listed.
Magnesium oxide (CAS 1309-48-4)	Listed.

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

Hexavalent chromium compounds (CAS -)	Listed.
Quartz (CAS 14808-60-7)	Listed.

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

Hexavalent chromium compounds (CAS -)	Listed: February 27, 1987 Carcinogenic.
Quartz (CAS 14808-60-7)	Listed: October 1, 1988 Carcinogenic.

**US - California Proposition 65 - CRT: Listed date/Developmental toxin**

Hexavalent chromium compounds (CAS -)	Listed: December 19, 2008 Developmental toxin.
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**US - California Proposition 65 - CRT: Listed date/Female reproductive toxin**

Hexavalent chromium compounds (CAS -)	Listed: December 19, 2008 Female reproductive toxin.
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**US - California Proposition 65 - CRT: Listed date/Male reproductive toxin**

Hexavalent chromium compounds (CAS -)	Listed: December 19, 2008 Male reproductive toxin.
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**US - New Jersey RTK - Substances: Listed substance**

Calcium oxide (CAS 1305-78-8)	Listed.
Calcium sulfate dihydrate (CAS 13397-24-5)	Listed.
Hexavalent chromium compounds (CAS -)	Listed.
Limestone (CAS 1317-65-3)	Listed.
Magnesium oxide (CAS 1309-48-4)	Listed.
Portland cement (CAS 65997-15-1)	Listed.
Quartz (CAS 14808-60-7)	Listed.

**US - Pennsylvania RTK - Hazardous Substances: Special hazard**

Hexavalent chromium compounds (CAS -)	Special hazard.
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**US. Massachusetts RTK - Substance List**

Calcium oxide (CAS 1305-78-8)	Listed.
Calcium sulfate dihydrate (CAS 13397-24-5)	Listed.
Limestone (CAS 1317-65-3)	Listed.
Magnesium oxide (CAS 1309-48-4)	Listed.
Portland cement (CAS 65997-15-1)	Listed.
Quartz (CAS 14808-60-7)	Listed.

**US. New Jersey Worker and Community Right-to-Know Act**

Hexavalent chromium compounds (CAS -)	500 LBS
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**US. Pennsylvania RTK - Hazardous Substances**

Calcium oxide (CAS 1305-78-8)	Listed.
Calcium sulfate dihydrate (CAS 13397-24-5)	Listed.
Hexavalent chromium compounds (CAS -)	Listed.
Limestone (CAS 1317-65-3)	Listed.
Magnesium oxide (CAS 1309-48-4)	Listed.
Portland cement (CAS 65997-15-1)	Listed.
Quartz (CAS 14808-60-7)	Listed.

## 16. Other Information

**Further information** A HMIS® Health rating including an \* indicates a chronic hazard.

**HMIS® ratings**  
Health: 3\*  
Flammability: 0  
Physical hazard: 1

**NFPA ratings**  
Health: 3  
Flammability: 0  
Instability: 1

**Disclaimer**

The information in the sheet was written based on the best knowledge and experience currently available.





## SAFETY DATA SHEET (SDS): LIMESTONE

### SECTION I – IDENTIFICATION

PRODUCT IDENTIFIER	TRADE NAME	OTHER SYNONYMS
Limestone	Crushed Stone	Sweet Rock, Aggregate, Aglime, Barn Lime, Coverstone, Fluing Agent, Flexible Base, Manufactured Sand, Mineral Filler, Screenings, Limestone CTB

#### 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

Martin Marietta Materials  
2710 Wycliff Road  
Raleigh, North Carolina 27607  
Phone: 919-781-4550

For additional health, safety or regulatory information and other emergency situations, call 919-781-4550

### 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 2 Skin Irritant



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 skin irritation 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 on skin: Rinse skin after manually handling and wash contaminated clothing if there is potential for direct skin contact before reuse.

If swallowed: If gastrointestinal discomfort occurs and if person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit.

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)
Limestone	1317-65-3	80-99
Silicon Dioxide <sup>(1)</sup> , SiO <sub>2</sub>	7631-86-9	0-10
Aluminum Oxide, Al <sub>2</sub> O <sub>3</sub>	1344-28-1	<1
Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	1309-37-1	<1
Magnesium Oxide, MgO	1309-48-4	0-8
Calcium Oxide, CaO	1305-78-8	0-43
Sodium Oxide, Na <sub>2</sub> O	1313-59-3	<1
Potassium Oxide, K <sub>2</sub> O	12136-45-7	<1
Calcium Carbonate, CaCO <sub>3</sub>	471-34-1	40-100

(1): The composition of SiO<sub>2</sub> may be up to 100% crystalline silica

**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 gastrointestinal discomfort occurs and if person is conscious, give a large quantity of water and induce vomiting; however, never attempt to make an unconscious person drink or vomit. 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. 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 limestone.

**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](http://www.osha.gov/dts/hazardalerts/hydraulic_frac_hazard_alert.pdf)

**SECTION VIII – EXPOSURE CONTROLS/PERSONAL PROTECTION****Airborne OELs for Components of Limestone:**

COMPONENT(S) CHEMICAL NAME	MSHA/OSHA PEL	ACGIH TLV-TWA	NIOSH REL
Limestone	(T) 15 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>	-	(T) 10 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>
Silicon Dioxide, SiO <sub>2</sub>	(R) 10 mg/m <sup>3</sup> / (% SiO <sub>2</sub> + 2) §	(R) 0.025 mg/m <sup>3</sup> #	(R) 0.05 mg/m <sup>3</sup> #
Aluminum Oxide, Al <sub>2</sub> O <sub>3</sub>	(T) 15 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>	(1) (R) 1 mg/m <sup>3</sup>	-
Ferric Oxide, Fe <sub>2</sub> O <sub>3</sub>	(2) 10 mg/m <sup>3</sup>	(R) 5 mg/m <sup>3</sup>	(3) 5 mg/m <sup>3</sup>
Magnesium Oxide, MgO	(4) 15 mg/m <sup>3</sup>	(I) 10 mg/m <sup>3</sup>	-
Calcium Oxide, CaO	5 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>	2 mg/m <sup>3</sup>
Sodium Oxide, Na <sub>2</sub> O (5)	2 mg/m <sup>3</sup>	(C) 2 mg/m <sup>3</sup>	(C) 2 mg/m <sup>3</sup>
Potassium Oxide, K <sub>2</sub> O	-	(6) (C) 2 mg/m <sup>3</sup>	(6) (C) 2 mg/m <sup>3</sup>
Calcium Carbonate, CaCO <sub>3</sub>	(T) 15 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>	-	(T) 10 mg/m <sup>3</sup> , (R) 5 mg/m <sup>3</sup>

§: 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/m<sup>3</sup> / (% SiO<sub>2</sub> + 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 <sup>3</sup>	15 mg/m <sup>3</sup>
ACGIH TLV (as Particles Not Otherwise Specified)	3 mg/m <sup>3</sup>	*10 mg/m <sup>3</sup>
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 include:

**Up to 0.5 mg/m<sup>3</sup>:**

(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/m<sup>3</sup>:**

(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/m<sup>3</sup>:**

(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/m<sup>3</sup>:**

(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/m<sup>3</sup> 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**

<b>APPEARANCE</b> Limestone is a mixture of fine to coarse angular white to gray particles ranging in size from powder to small stones	<b>ODOR AND ODOR THRESHOLD</b> Odorless to musty odor and not applicable
<b>pH AND VISCOSITY</b> Not applicable	<b>MELTING POINT/FREEZING POINT</b> Not applicable
<b>BOILING POINT AND RANGE</b> Not applicable	<b>FLASH POINT AND FLAMMABILITY</b> Not applicable
<b>FLAMMABILITY/EXPLOSIVE LIMITS AND AUTOIGNITION TEMPERATURE</b> Not applicable	<b>EVAPORATION RATE AND DECOMPOSITION TEMPERATURE</b> Not applicable
<b>VAPOR PRESSURE AND VAPOR DENSITY IN AIR</b> Not applicable	<b>SPECIFIC GRAVITY.</b> 2.5-2.75
<b>SOLUBILITY IN WATER</b> Insoluble	<b>PARTITION COEFFICIENT: N-OCTANOL/WATER</b> Not applicable

**SECTION X – STABILITY AND REACTIVITY**

<b>STABILITY</b> Stable	<b>CONDITIONS TO AVOID</b> Contact with incompatible materials (see below).
<b>THERMAL STABILITY</b> 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.	
<b>INCOMPATIBILITY (Materials to avoid)</b> 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 limestone may react vigorously with water.	
<b>HAZARDOUS DECOMPOSITION PRODUCTS</b> Silica dissolves in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.	
<b>HAZARDOUS POLYMERIZATION</b> Not known to polymerize	

**SECTION XI – TOXICOLOGICAL INFORMATION**

<b>Health Effects:</b> The information below represents an overview of health effects caused by overexposure to one or more components in limestone.			
<b>Primary routes(s) of exposure:</b>	<input checked="" type="checkbox"/> Inhalation	<input type="checkbox"/> Skin	<input checked="" type="checkbox"/> Ingestion
<b>EYE CONTACT:</b> Direct contact with dust may cause irritation by mechanical abrasion or corrosive action. Conjunctivitis may occur.			
<b>SKIN CONTACT:</b> Direct contact may cause irritation by mechanical abrasion. Some components of material are also known to cause corrosive effects to skin and mucous membranes.			
<b>SKIN ABSORPTION:</b> Not expected to be a significant route of exposure.			
<b>INGESTION:</b> 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.			
<b>INHALATION:</b> Dust may irritate nose, throat, mucous membranes and respiratory tract by mechanical abrasion. 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:

**Silicon Dioxide:** It is comprised of amorphous and crystalline forms of silica. In some batches, crystalline silica may represent up to 100% of silicon dioxide.

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 occupational exposure limits 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: (Ferric Oxide)**

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.

**Calcium Carbonate:**

Exposure route: Inhalation, skin/eye contact.

Target organs: Eyes, skin, respiratory system.

Acute effect: Irritation of the eyes, skin and respiratory system and cough. It has been reported that there may be a silicosis risk when using impure limestone containing in excess of 3% quartz. However, it is claimed that pure calcium carbonate does not cause pneumoconiosis. Adverse health effects have generally not been reported in literature among workers using CaCO<sub>3</sub>.

Chronic effect/carcinogenicity: Not classifiable as human carcinogen

Acute Toxicity Estimates for Limestone – 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 Martin Marietta Materials 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: 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: Crystalline silica (quartz) is not classified as a hazardous substance under regulations of the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 40 CFR §302.4

EPCRA (Emergency Planning and Community Right to Know Act): Crystalline silica (quartz) 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 Martin Marietta Materials 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 (quartz) is classified as a substance known to the state of California to be a carcinogen.

Massachusetts Toxic Use Reduction Act: Respirable crystalline silica is considered toxic per the Massachusetts Toxic Use Reduction Act when used in abrasive blasting and molding.

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

**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 Martin Marietta Materials 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, Martin Marietta Materials, 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.martinmarietta.com](http://www.martinmarietta.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 3/2015 (Combines Martin Marietta Materials MSDS for Limestone and TXI MSDS for Limestone)  
REPLACES 11/2007 (MMM MSDS) and 02/2014 (TXI MSDS)

NO WARRANTY, EXPRESSED OR IMPLIED, OF MERCHANTABILITY, FITNESS FOR A PARTICULAR PURPOSE OR OTHERWISE IS MADE



# Sequatchie Concrete Service, Inc


## SAFETY DATA SHEET (SDS)

Sand – Sand Switch Mine- Sewanee TN

### Section 1. Identification

Product identifier:	Natural sand from sandstone
Other means of identification:	Crushed stone, Construction Aggregate, Sand, Masonry Sand
Identified uses:	Used in a variety of construction applications, such as but not limited to the manufacturing of ready mix concrete, concrete block and mortar mix
Supplier's details:	Sequatchie Concrete Service, Inc. 406 Cedar Avenue South Pittsburg, TN 37380
Emergency telephone number:	423-837-7913 or 1800-824-7913 7am-5pm M-F

### Section 2. Hazards Identification

Classification of mixture:	Repeated exposure Skin Corrosion/Irritation: Category 2 Eye Damage/Irritation: Category 2a Specific Target Organ Toxicity: Category 2 Carcinogenicity: Category 1a
Signal word:	Danger
Pictograms:	
Hazard statements:	May cause eye, skin and respiratory tract irritation. May cause respiratory irritation.
Precautionary statements:	Wear eye and/or face protection. Avoid breathing dust. Stockpiles may present risk of engulfment. Medical conditions may be aggravated by exposure. Contact to the skin, eyes and respiratory tract may be irritating. Avoid contact with the eyes and wear appropriate skin and eye protection when necessary. See Section 7 for additional details.
Hazards not otherwise classified:	Not applicable.

### Section 3. Composition/Information on Ingredients

<b>Substance/mixture:</b>	Crushed Sand Stone- (silica quartz)	
<b>CAS number:</b>	14808-60-7	
<b>Product code:</b>	Not applicable.	
<b>Ingredient name :</b>	%	CAS Number
Silica Quartz	<99	14808-60-7
<p>Any concentration shown as a range is to protect confidentiality or is due to natural variations. Nothing is added to the product during the manufacturing process. This product is mined from the earth, crushed and separated for size based on construction need.</p> <p>There may be trace elements found naturally in the crushed stone. These elements can be found with a chemical analysis. 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.</p> <p>Occupational exposure limits, if available, are listed in Section 8.</p>		

### Section 4. First-aid Measures

<b>Inhalation:</b>	Move to fresh air. Get medical attention if any symptoms develop or persist.
<b>Skin contact:</b>	Wash exposed area with soap and water. Get medical attention if irritation persists.
<b>Eye contact:</b>	Immediately flush eyes with plenty of water, for at least 15 minutes. Occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Do not attempt to remove debris yourself. Get medical attention if irritation persists.
<b>Ingestion:</b>	Get medical attention. Rinse mouth thoroughly with water. Do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. This product contains crystalline silica. Prolonged inhalation may cause silicosis and may cause cancer.
<b>Important symptoms/effects, acute and delayed:</b>	
<b>Inhalation:</b>	May cause respiratory irritation, shortness of breath and coughing. Prolonged inhalation may cause chronic health effects.
<b>Indication of immediate medical attention and special treatment, if necessary:</b>	
<b>Notes to physician:</b>	Treat symptomatically. Continue to monitor as symptoms may be delayed.
<b>Protection of first-aiders:</b>	No action shall be taken involving any personal risk or without suitable training. They should take note of the material and relay that information to the treating physician.
See toxicological information listed in Section 11.	

### Section 5. Fire-fighting Measures

<b>Suitable extinguishing media:</b>	Use an extinguishing agent suitable for the surrounding fire.
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<b>Unsuitable extinguishing media:</b>	None known.
<b>Specific hazards arising from the product:</b>	No specific fire or explosion hazard.
<b>Hazardous thermal decomposition products may include:</b>	None known
<b>Special protective equipment and precautions for fire-fighters:</b>	Fire-fighters should wear appropriate protective equipment for surrounding materials.

## Section 6. Accidental Release Measures

<b>Personal precautions, personal protective equipment and emergency procedures for non-emergency responders.</b>	Personnel involved with handling the spilled material should wear appropriate personal protective equipment and clothing. Measures should be taken to contain or reduce dust while cleanup is performed, such as wetting the material with water. Respirable dust can cause adverse health effects due to the respirable crystallized silica.
<b>Methods and materials for containment and cleaning up spills:</b>	Spilled material should be managed in such a way that it does not enter into any drains, waterways or environmentally protected areas.
USDOT Class: Uncontaminated natural sand does not meet any hazardous material class definition found in Title 49 Code of Federal Regulations Part 173.	

## Section 7. Handling and Storage

<b>Precautions for safe handling:</b>	Do not handle until all safety precautions have been read and understood. Provide proper ventilation if material is being stored or used indoors. Reduce dust exposure, do not breath dust and avoid prolonged exposure to dust. Wear proper protective equipment.
<b>Conditions for safe storage, including any incompatibilities:</b>	Avoid airborne dust or the accumulation of it.
<b>General occupational hygiene :</b>	Launder dusty clothing before wearing again. If respiratory personal protective equipment is used make sure that the proper OSHA standards are followed.

## Section 8. Exposure Controls/Personal Protection

<b>Ingredient name:</b>	<b>Exposure limits:</b>			
	<b>OSHA PEL:</b>	<b>ACGIH TLV:</b>	<b>NIOSH REL:</b>	<b>MSHA PEL:</b>
Quartz*	TWA: 10 mg/m <sup>3</sup> / (%SiO <sub>2</sub> +2) 8 hours. Form: Respirable	TWA: 0.025 mg/m <sup>3</sup> 8 hours. Form: Respirable fraction	TWA: 0.05 mg/m <sup>3</sup> 10 hours. Form: respirable dust	10mg/m <sup>3</sup>
Continued...	TWA: 250 MPPCF / (%SiO <sub>2</sub> +5) 8 hours. Form: Respirable			
* The percent of silica varies greatly from product to product and also within the same product. Silica exposure may occur when respirable dust is present.				

<b>Appropriate engineering controls:</b>	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. Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.
<b>Biological limit values:</b>	There are no biological exposure limits for any of the ingredient(s)
<b>Individual protection measures (including Personal Protective Equipment):</b>	<p>Clean water should always be readily available. Wash hands after handling, before eating or drinking. To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields especially if dust is present. Wash work clothing and protective equipment frequently.</p> <p>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 the safe working limits of the selected respirator. (See OSHA Respiratory Protection Standard 29 CFR 1910.134)</p>

## Section 9. Physical and Chemical Properties

<b>Appearance (physical state, color, etc.)</b>	Solid, granular, various colors including: tan, white, gray and translucent particles.	<b>Upper/lower flammability or explosive limits:</b>	N/A
<b>Odor:</b>	Odorless	<b>Vapor pressure:</b>	N/A
<b>Odor threshold:</b>	N/A	<b>Vapor density:</b>	N/A
<b>pH:</b>	N/A	<b>Relative density:</b>	N/A
<b>Melting point/freezing point:</b>	N/A	<b>Solubility:</b>	Non soluble
<b>Initial boiling and boiling range:</b>	N/A	<b>Partition coefficient: n-octanol/water:</b>	N/A
<b>Flash point:</b>	Not flammable. Not combustible.	<b>Auto-ignition temperature:</b>	N/A
<b>Evaporation rate:</b>	N/A	<b>Decomposition temperature:</b>	N/A
<b>Flammability (solid, gas):</b>	N/A	<b>Viscosity:</b>	N/A

## Section 10. Stability and Reactivity

<b>Reactivity:</b>	This material is stable and does not react in normal conditions of use, transportation or storage.
<b>Chemical stability:</b>	The product is stable under normal conditions.
<b>Possibility of hazardous reactions:</b>	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid:</b>	Avoid contact with strong oxidizing agents. When heated to extremely high temperatures (> 1580 °F) quartz gradually converts to tridymite or cristobalite – forms of crystalline silica which are considered to be more hazardous than quartz
<b>Incompatible materials:</b>	Crystalline silica may react violently with strong oxidizing agents, causing fire and explosions.



<b>Hazardous decomposition products:</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced. But if the silica is dissolved in hydrofluoric acid it will produce a corrosive gas-silicon tetrafluoride.
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## Section 11. Toxicological Information

Likely routes of exposure:	Dermal contact. Eye contact. Inhalation. Ingestion.						
Symptoms:							
Inhalation:	Repeated inhalation of respirable crystalline silica (quartz) may cause silicosis. 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 cancer.						
Skin contact:	It may be abrasive to the skin.						
Eye contact:	May cause adverse symptoms if direct contact is made such as: pain, watering and redness.						
Ingestion:	Although unlikely if ingestion does occur it should cause discomfort.						
Delayed and immediate effects:	Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation.						
Numerical measures of toxicity:	No data available.						
Ingredient name:	NPT	IARC	OSHA	MSHA	NIOSH	EPA	ACGIH
Quartz	Known to be a human carcinogen.	1	N/A	N/A	N/A	N/A	A2

## Section 12. Ecological Information

<b>Ecotoxicity:</b>	If dust and fine material should enter a waterway it could raise Total Solids and potentially have adverse effects on aquatic life.
<b>Persistence and degradability:</b>	No data available.
<b>Bioaccumulative potential :</b>	No data available.
<b>Mobility in soil:</b>	No data available.
<b>Other adverse effects:</b>	No known significant effects or hazards.

## Section 13. Disposal Considerations

The generation of waste should be avoided or minimized wherever possible. If disposal is necessary it must be done according to local and state laws or whatever governing body regulates the disposal thereof. It should never be dumped in sewers, drains, waterways, lakes or streams.

If the material is stored in a container that is empty with only residual residue it should also be disposed of in a manner that protects the environment and follows any laws that in place from local/state or federal agencies.

## Section 14. Transport Information

<b>UN number:</b>	Not regulated.
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<b>UN proper shipping name:</b>	N/A
<b>Transport hazard class(es):</b>	N/A
<b>Packing group:</b>	N/A
<b>Environmental hazards:</b>	N/A
<b>Transport in bulk:</b>	Annex II of MARPOL 73/78 and the IBC Code
<b>Special precautions:</b>	Ensure that persons transporting the product know what to do in the event of an accident or spillage.

## Section 15. Regulatory Information

OSHA Hazard Communication: This product is considered by OSHA to be a hazardous material and should be included in the employer's hazard communication program.

CERCLA/SUPERFUND: This product is not listed as a CERCLA hazardous substance.

EPCRA SARA Title III: 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 and is considered a hazardous and a delayed health hazard.

Name	%	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard	Fire Hazard
Crystalline Silica (Quartz) CAS 14808-60-7	>1	NO	NO	NO	YES	NO

EPCRA SARA Section 313: This product is not subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.

RCRA: If discarded in its natural form, this product would not be a hazardous waste either by listing 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.

TSCA: Crystalline silica is exempted from reporting under the inventory update rule.

California Proposition 65: Crystalline silica (airborne particulates of respirable size) and Chromium (hexavalent compounds) are substances known by the State of California to cause cancer.

WHMIS/DSL: Products containing crystalline silica are classified as D2A, E and are subject to WHMIS requirements.

## Section 16. Other Information

<b>Date of last revision:</b>	February 2016
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### **\*NOTICE TO READER/PRODUCT USER:**

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of product as it is commonly used, this safety data sheet cannot anticipate and provide all of the information which might be needed in every situation. Inexperienced product users should obtain proper training before handling or using this product. In particular, the data furnished in this safety data sheet does not address hazards which may be posed by other materials mixed with this product to produce other products. Users should review any other relevant safety data sheets before working with this particular product or working on or with other associated products.

If product user has purchased the product from Sequatchie Concrete Service, Inc. ("SCS"), then user acknowledges that any such purchase is subject to SCS Standard Terms and Conditions of Sale. Without limiting the generality of the foregoing, SCS makes no warranty, either express or implied, of any kind or of any nature whatsoever concerning this product or the merchantability or fitness thereof for any particular purpose or concerning the accuracy of any information provided by SCS, except that the product shall conform to any applicable contracted specifications. The information provided herein was believed by SCS to be accurate at the time of preparation, or was prepared from sources believed to be reliable, but it is the responsibility of the user to investigate, consult and understand any other pertinent sources of information to comply with all laws and procedures applicable to the safe handling, processing and use of the product and to determine the suitability of the product for its intended use. SCS's maximum obligation to user for the product shall be limited only to replacement or allowance of credit for any nonconforming product. Accordingly, user expressly agrees that SCS shall have no liability for loss or damage in excess of the price received for nonconforming or defective product or for losses or damages of any nature whatsoever, whether based on contract, breach of warranty, negligence, or otherwise, incurred or suffered by user or any other person or entity and user expressly releases SCS from any liability for any amounts in excess of the replacement of any such nonconforming (including defective) materials. In no event will SCS be liable for incidental or consequential damages. User must give SCS written notice within forty-eight (48) hours after delivery of any claim against SCS as a result of any alleged nonconforming materials or any other cause whatsoever, time being of the essence. SCS will be given reasonable opportunity to investigate all claims. Any failure by User to give written notice within such forty-eight (48) hour period will be deemed a conclusive waiver by User of all such claims against SCS.



CEMENT &amp; CONCRETE PRODUCTS™

## C4: Portland Cement Based Concrete 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

Revision: Jun-15  
SDS C4

<b>QUIKRETE® Product Name</b>	<b>Item #(s)</b>
MORTAR MIX	1102
VIEUX CARRE MORTAR MIX	1102-86
ALL-STAR MORTAR MIX	1122
MASON MIX	1136
ALL-STAR MASON MIX	1136
QUIKRETE® PRO-FINISH BLENDED MASON MIX	1136-58
ALL-STAR VENEER STONE MORTAR	1137
ROOF TILE MORTAR	1140
VENEER STONE MORTAR	1137
POLYMER MODIFIED VENEER STONE MORTAR	1137-85
CSC-4	1191-84
TUCKPOINTING MORTAR – ZIP AND MIX	1251-15
GLASS BLOCK MORTAR	1610
K-1 Mortar	210280
HANDICRETE MORTAR MIX	
NATURAL STONE MORTAR	
RED-E-CRETE MORTAR	
BULK MASONRY MORTARS: MIX 101M, 102 S, 104 N, 112 M, 112 N, 112 S, 122 M, 122 N, 122 S, 132 S, 142, 201 M, 202 PLN, 202 S, 203 PLS, 203 S, 203 N, 204 N, 205 P/L type O, 203 M, 212 M, 212 N, 212 S, 222 M, 222 S, 253 S, 294 N	

**Product Use:** Masonry Mortars for construction with block, brick, veneer stones, etc.

#### SECTION II - HAZARD IDENTIFICATION

**Hazard-determining components of labeling:** Silica, Portland cement

##### 2.1 Classification of the substance or mixture

Carcinogen – Category 1A

Skin Corrosion – Category 1B

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Skin Sensitization – Category 1B

Specific Target Organ Toxicity Repeat Exposure – Category 1

Specific Target Organ Toxicity: Single Exposure – Category 3

## 2.2a Signal word DANGER!

### 2.2b Hazard Statements

May cause cancer through chronic inhalation

Causes severe skin burns and serious eye damage

May cause an allergic skin reaction

Causes damage to lungs through prolonged or repeated inhalation

May cause respiratory irritation

### 2.2c Pictograms



### 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.

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

Wash thoroughly after handling.

Use only in a well-ventilated area.

Do not breathe dust.

If swallowed: Rinse mouth. Do NOT induce vomiting.

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 (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.

If significant skin irritation or rash occurs: get medical advice or attention.

**Immediately seek medical advice or attention if symptoms are significant or persist.**

Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/containers in accordance with all regulations.

**2.3 Additional Information** Precautions must be observed because burns occur with little warning -- little heat is sensed.



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**2.3a HNOC – Hazards not otherwise classified:** Not applicable

**2.3b Unknown Acute Toxicity:** None

**2.3C WHMIS Classification**

Class D2B – Skin/Eye Irritant

Class D2A – Chronic Toxic Effects – Carcinogen

Class E – Corrosive Material

**2.3d Label Elements According To WHMIS**

**Hazard Symbols**



**Signal Word**

DANGER!

**SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION**

<b><u>Hazardous Components</u></b>	<b><u>CAS No.</u></b>	<b><u>% by Weight</u></b>
Sand, Silica, Quartz	14808-60-7	40-70*
Portland Cement	65997 15 1	10-30*
Lime	01305-62-0	5-10%
Pulverized Limestone	01317-65-3	5-10%

\*The concentrations ranges are provided due to batch-to-batch variability.

None of the constituents of this material are of unknown toxicity.

**SECTION IV – FIRST AID MEASURES**

**4.1 Description of the first-aid measures**

**General information:**

**After inhalation:** Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation.

**After skin contact:** Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical advice or attention.

**After eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**After swallowing:** Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person.



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**4.2 Most important symptoms/effects, acute and delayed**

**Inhalation:** May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.

**Skin contact:** Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes. Precautions must be observed because burns occur with little warning -- little heat is sensed.

**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.

**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:**

Immediately seek medical advice or attention if symptoms are significant or persist.

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**SECTION V - FIRE FIGHTING MEASURES**

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**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

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**SECTION VI – ACCIDENTAL RELEASE MEASURES**

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**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.

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**SECTION VII - PRECAUTIONS FOR SAFE HANDLING AND STORAGE**

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## 7.1 Handling

**Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. 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

**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 <sup>3</sup>	TLV (ACGIH) mg/M <sup>3</sup>
Silica Sand, crystalline	14808-60-7	0.1	0.025 (resp)
Portland Cement	65997-15-1	5 (resp) 15 (total)	10 (resp)
Lime	01305-62-0	5	5
Pulverized Limestone	01317-65-3	5 (resp) 15 (total)	10 (resp)

### 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 splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Precautions must be observed because burns occur with little warning -- little heat is sensed.

##### Eye protection:

Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses).

##### Respiratory protection:





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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).

## SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS

### General Information

<b>Appearance</b>	Form: Granular Solid Color: Gray to gray-brown colored Odor: None
<b>pH-value at 20°C (68 °F):</b>	13 (10%)
<b>Boiling point/Boiling range:</b>	Not applicable
<b>Flash point:</b>	Not applicable
<b>Auto igniting:</b>	Product is not self-igniting
<b>Vapor pressure at 21°C (70°F)</b>	Not available
<b>Density at 25°C (77 °F):</b>	2.6 to 3.15

### Solubility in / Miscibility with

<b>Water:</b>	Insoluble
<b>VOC content:</b>	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

Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires

### 10.6 Hazardous Decomposition or By-products

Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

## SECTION XI – TOXICOLOGICAL INFORMATION

**11.1 Exposure Routes:** Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

**CEMENT & CONCRETE PRODUCTS™****11.2 Symptoms related to physical/chemical/toxicological characteristics:**

**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 silica from this product can cause silicosis.

**Skin contact:** Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

**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.

**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**

Skin Corrosion/Irritation: Causes severe skin burns.

Serious Eye Damage/Irritation: Causes severe eye damage.

Respiratory Sensitization: Not available

Skin Sensitization: May cause an allergic skin reaction.

Specific Target Organ Toxicity-Single Exposure: (Category 3) May cause respiratory irritation.

Aspiration Hazard: Not available

**Long Term**

Carcinogenicity: May cause cancer through chronic inhalation.

Germ Cell Mutagenicity: Not available

Reproductive Toxicity: Not available

Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure

Synergistic/Antagonistic Effects: Not available.

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**SECTION XII – ECOLOGICAL INFORMATION**

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**12.1 Ecotoxicity**

May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

**12.2 Persistence and degradability**

No further relevant information available.



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**12.3 Bioaccumulative potential:**

No further relevant information available.

**12.4 Mobility in soil**

No further relevant information available.

**12.5 Other Adverse Effects**

No further relevant information available.

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**SECTION XIII – DISPOSAL CONSIDERATIONS**


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**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.

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**SECTION XIV – TRANSPORT INFORMATION**


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	<b>DOT (U.S.)</b>	<b>TDG (Canada)</b>
<b>UN-Number</b>	Not Regulated	Not Regulated
<b>UN proper shipping name</b>	Not Regulated	Not Regulated
<b>Transport Hazard Class(es)</b>	Not Regulated	Not Regulated
<b>Packing Group (if applicable)</b>	Not Regulated	Not Regulated

**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.

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**SECTION XV – OTHER REGULATORY INFORMATION**


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**15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical**

**Canada**

**WHMIS Classification:** Considered to be a 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.

**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:** 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):** 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.

**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, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

**OSHA Carcinogen:** Crystalline silica (quartz) is not listed.

**15.3 State Right to Know Laws****California Prop. 65 Components**

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

**California Inhalation Reference Exposure Level (REL):** California established a chronic REL of 3 µg 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.

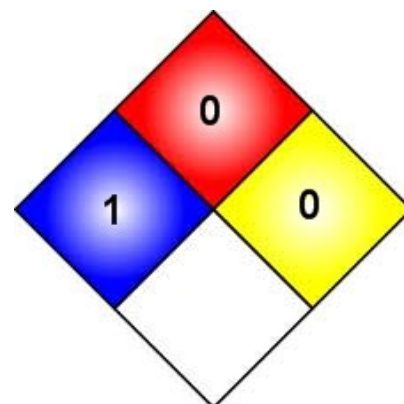
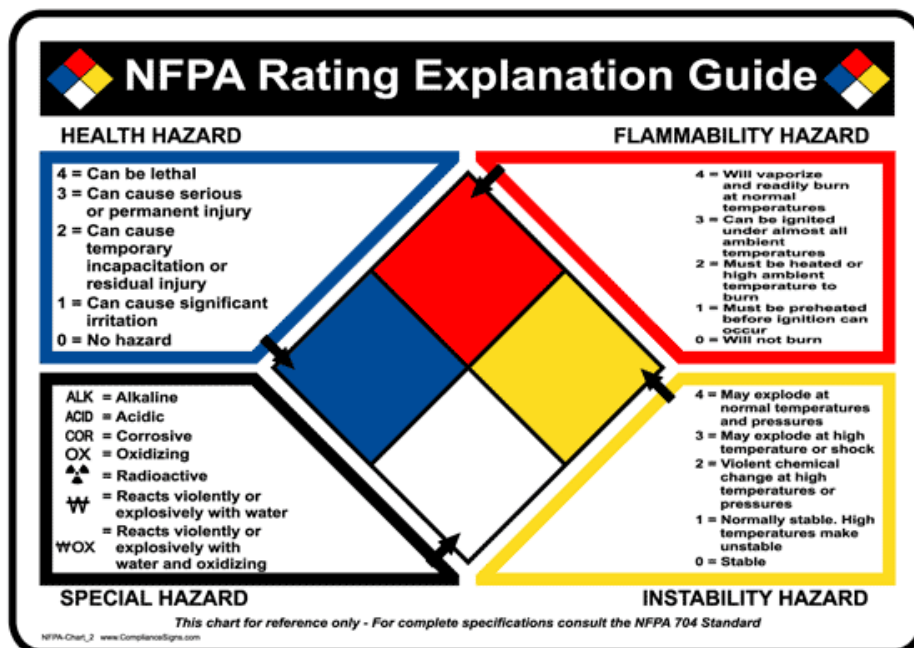
**Massachusetts Toxic Use Reduction Act:** Silica, crystalline (respirable size, <10 microns) is "toxic" for purposes of the Massachusetts Toxic Use Reduction Act.

**15.4 Global Inventories**

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

**TSCA No.:** Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.

## 15.5 NFPA Ratings



## SECTION XVI – OTHER INFORMATION

**Last Updated: June 11, 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](http://www.QUIKRETE.com)

**End of SDS**



**CEMENT & CONCRETE PRODUCTS™**



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## C3: Portland Cement Based Concrete 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 C3

<b>QUIKRETE® Product Name</b>	<b>Item #(s)</b>
GROUT TYPE A	1585-04
SELF-CONSOLIDATING CORE FILL GROUT	1585-06
COARSE CORE FILL MASONRY GROUT	1585-07
FINE CORE FILL MASONRY GROUT	1585-08
MUDJACKING GROUT	1585-11
ALL-STAR CORE FILL GROUT FINE	1585
GEO THERMAL WELL GROUT	1590-55
BACK FILL GROUT	NR30312
BULK CORE FILL GROUTS: MIX 300, 300 NS, 302 F, 303 F, 304 F, 305 F, 307 F, 320 C, 330 C, 340 C, 350 C	

**Product Use:** Portland cement-based, masonry grouts for filling the cores of concrete masonry units or for backfilling voids

#### SECTION II - HAZARD IDENTIFICATION

**Hazard-determining components of labeling:** Silica, Portland cement

##### 2.1 Classification of the substance or mixture

Carcinogen – Category 1A

Skin Corrosion – Category 1B

Skin Sensitization – Category 1B

Specific Target Organ Toxicity Repeat Exposure – Category 1

Specific Target Organ Toxicity: Single Exposure – Category 3

##### 2.2a Signal word DANGER!

##### 2.2b Hazard Statements

May cause cancer through chronic inhalation

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Causes severe skin burns and serious eye damage  
May cause an allergic skin reaction  
Causes damage to lungs through prolonged or repeated inhalation  
May cause respiratory irritation

## 2.2c Pictograms



## 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.  
Do not eat, drink or smoke when using this product.  
Wash thoroughly after handling.  
Use only in a well-ventilated area.  
Do not breathe dust.

If swallowed: Rinse mouth. Do NOT induce vomiting.

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 (or hair): Remove immediately all contaminated clothing and wash before re-use. Rinse skin or hair with water.

If significant skin irritation or rash occurs: get medical advice or attention.

**Immediately seek medical advice or attention if symptoms are significant or persist.**

Store in a well-ventilated place. Keep container tightly closed.

Dispose of contents/containers in accordance with all regulations.

**2.3 Additional Information** Precautions must be observed because burns occur with little warning -- little heat is sensed.

**2.3a HNOX – Hazards not otherwise classified:** Not applicable

**2.3b Unknown Acute Toxicity:** None

### 2.3C WHMIS Classification

Class D2B – Skin/Eye Irritant

Class D2A – Chronic Toxic Effects – Carcinogen

Class E – Corrosive Material



## 2.3d Label Elements According To WHMIS

### Hazard Symbols



### Signal Word

DANGER!

## SECTION III - HAZARDOUS INGREDIENTS/IDENTITY INFORMATION

<u>Hazardous Components</u>	<u>CAS No.</u>	<u>% by Weight</u>
Sand, Silica, Quartz	14808-60-7	40-70*
Portland Cement	65997 15 1	10-30*
Fly Ash	68131-74-8	5-10*

\*The concentrations ranges are provided due to batch-to-batch variability.  
None of the constituents of this material are of unknown toxicity.

## SECTION IV – FIRST AID MEASURES

### 4.1 Description of the first-aid measures

#### General information:

**After inhalation:** Remove person to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration. In case of unconsciousness, place patient stably in side position for transportation.

**After skin contact:** Wash skin with cool water and pH-neutral soap or a mild detergent. If significant skin irritation or rash occurs: get medical advice or attention.

**After eye contact:** Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

**After swallowing:** Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately. Never give anything by mouth to an unconscious person.

### 4.2 Most important symptoms/effects, acute and delayed

**Inhalation:** May cause respiratory tract irritation. Causes damage to organs through prolonged or repeated inhalation. This product contains crystalline silica. Prolonged or repeated inhalation of respirable silica from this product can cause silicosis.



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**Skin contact:** Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes. Precautions must be observed because burns occur with little warning -- little heat is sensed.

**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.

**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:**  
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

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**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

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### 7.1 Handling

**Precautions for safe handling:** Ensure good ventilation/exhaustion at the workplace. DO NOT BREATHE DUST. In dusty environments, the use of an OSHA, MSHA or NIOSH approved respirator and tight fitting goggles is recommended. 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.



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## 7.2 Storage

**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 <sup>3</sup>	TLV (ACGIH) mg/M <sup>3</sup>
Silica Sand, crystalline	14808-60-7	0.1	0.025 (resp)
Portland Cement	65997-15-1	5 (resp) 15 (total)	10 (resp)
Fly Ash	68131-74-8	N/A	N/A

### 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 splashes. Nitrile, Butyl and PVC gloves have been found to offer adequate protection for incidental contact. Precautions must be observed because burns occur with little warning -- little heat is sensed.

##### Eye protection:

Wear approved eye protection (properly fitted dust- or splash-proof chemical safety glasses).

##### 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).

## SECTION IX - PHYSICAL/CHEMICAL CHARACTERISTICS



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**General Information**

<b>Appearance</b>	Form: Granular Solid Color: Gray to gray-brown colored Odor: None
<b>pH-value at 20°C (68 °F):</b>	13 (10%)
<b>Boiling point/Boiling range:</b>	Not applicable
<b>Flash point:</b>	Not applicable
<b>Auto igniting:</b>	Product is not self-igniting
<b>Vapor pressure at 21°C (70°F)</b>	Not available
<b>Density at 25°C (77 °F):</b>	2.6 to 3.15

**Solubility in / Miscibility with**

<b>Water:</b>	Insoluble
<b>VOC content:</b>	0 g/L VOC

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**SECTION X – STABILITY AND REACTIVITY**


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**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**

Contact of silica with powerful oxidizing agents such as fluorine, chlorine trifluoride, manganese trioxide, or oxygen difluoride may cause fires

**10.6 Hazardous Decomposition or By-products**

Silica will dissolve in Hydrofluoric Acid and produce a corrosive gas – silicon tetrafluoride.

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**SECTION XI – TOXICOLOGICAL INFORMATION**


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**11.1 Exposure Routes:** Skin contact, skin adsorption, eye contact, inhalation, or ingestion.

**11.2 Symptoms related to physical/chemical/toxicological characteristics:**

**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 silica from this product can cause silicosis.

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**Skin contact:** Causes skin irritation. Handling can cause dry skin, discomfort, irritation, and dermatitis. May cause sensitization by skin contact. Product becomes extremely alkaline when exposed to moisture, and can cause alkali burns and affect the mucous membranes.

**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.

**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**

Skin Corrosion/Irritation: Causes severe skin burns.

Serious Eye Damage/Irritation: Causes severe eye damage.

Respiratory Sensitization: Not available

Skin Sensitization: May cause an allergic skin reaction.

Specific Target Organ Toxicity-Single Exposure: (Category 3) May cause respiratory irritation.

Aspiration Hazard: Not available

**Long Term**

Carcinogenicity: May cause cancer through chronic inhalation.

Germ Cell Mutagenicity: Not available

Reproductive Toxicity: Not available

Specific Target Organ Toxicity- Repeated Exposure: (Category 1) Causes damage to lungs through prolonged/repeated exposure

Synergistic/Antagonistic Effects: Not available.

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**SECTION XII – ECOLOGICAL INFORMATION**

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**12.1 Ecotoxicity**

May cause long-term adverse effects to the aquatic environment. Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system. Must not reach bodies of water or drainage ditch undiluted or un-neutralized

**12.2 Persistence and degradability**

No further relevant information available.

**12.3 Bioaccumulative potential:**

No further relevant information available.

**12.4 Mobility in soil**

No further relevant information available.



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**12.5 Other Adverse Effects**

No further relevant information available.

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**SECTION XIII – DISPOSAL CONSIDERATIONS**


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**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.

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**SECTION XIV – TRANSPORT INFORMATION**


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	<b>DOT (U.S.)</b>	<b>TDG (Canada)</b>
<b>UN-Number</b>	Not Regulated	Not Regulated
<b>UN proper shipping name</b>	Not Regulated	Not Regulated
<b>Transport Hazard Class(es)</b>	Not Regulated	Not Regulated
<b>Packing Group (if applicable)</b>	Not Regulated	Not Regulated

**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.

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**SECTION XV – OTHER REGULATORY INFORMATION**


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**15.1 Safety, Health and Environmental Regulations/Legislations specific for the chemical****Canada**

**WHMIS Classification:** Considered to be a 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.

**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:** 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):** 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.

**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, primarily quartz dusts occurring in industrial and occupational settings, is classified as Known to be a Human Carcinogen.

**OSHA Carcinogen:** Crystalline silica (quartz) is not listed.

## 15.3 State Right to Know Laws

### **California Prop. 65 Components**

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

**California Inhalation Reference Exposure Level (REL):** California established a chronic REL of 3 µg 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.

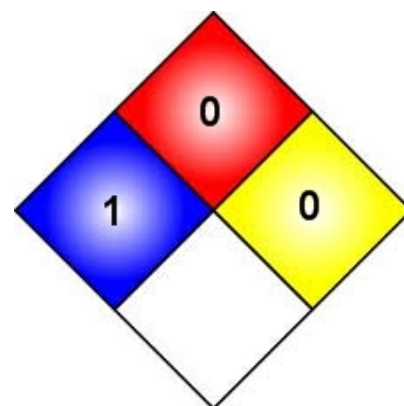
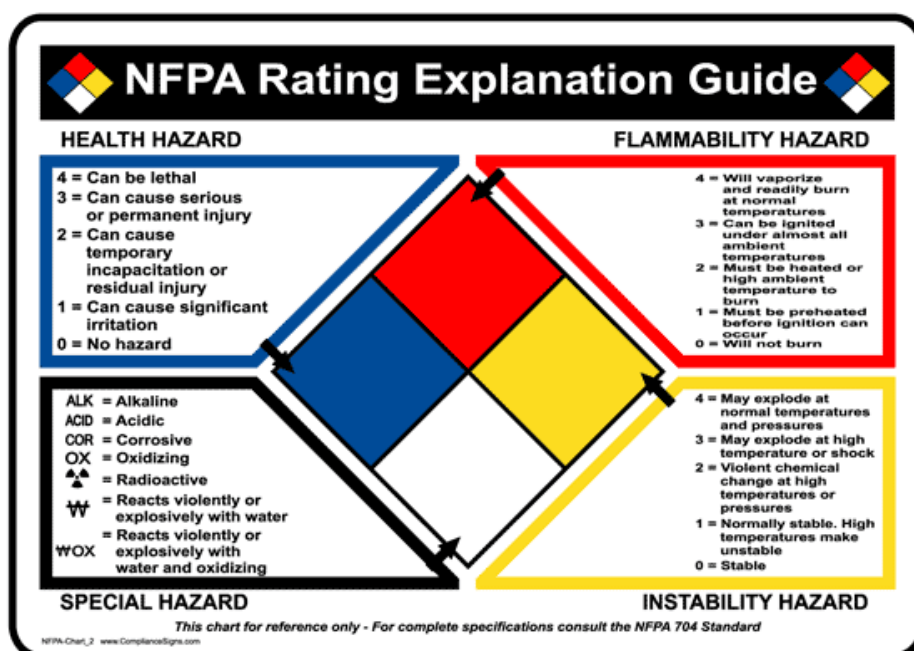
## 15.4 Global Inventories

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

**TSCA No.:** Crystalline silica (quartz) appears on the EPA TSCA inventory under the CAS No. 14808-60-7. All constituents are listed in the TSCA inventory.



## 15.5 NFPA Ratings



## SECTION XVI – OTHER INFORMATION

Last Updated: June 11, 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





**CEMENT & CONCRETE PRODUCTS™**

[www.QUIKRETE.com](http://www.QUIKRETE.com)

**End of SDS**



## 1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND THE COMPANY/UNDERTAKING

**Product Identifier**

**Material Name:** BRICK

**Trade Name:** Brick

**Chemical Family:** Predominately Aluminum Silicates

**Formula:** Mixture

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

**Intended Use:** Building material used for structural support.

**Supplier of the Safety Data Sheet**

Glen-Gery Corporation  
1166 Spring Street  
Wyomissing, PA 19610-6001  
Product Support/Technical Services Phone: (610) 562-3076

**Emergency telephone number:**  
**Corporate Office:** (610) 374-4011  
**Technical Services:** (610) 562-3076  
**Contact E-Mail:** GGtech01@oldcastle.com

## 2. HAZARDS IDENTIFICATION

**Appearance:** Granular brick-shaped solid; comes in wide range of colors

**Hazard Classification of the Substance or Mixture:**

Skin irritation 2  
Eye irritation 2A  
Skin sensitization 1B  
Carcinogenicity 1A  
Specific target organ toxicity - Single exposure 3  
Specific target organ toxicity - Repeated exposure 1

**Signal Word:** Danger

**Hazard Statement:** Brick dust may contain crystalline silica, a chemical that has been determined by certain agencies to cause cancer. See Section 11 for more information on health hazards.

**Pictograms:**

## SAFETY DATA SHEET

Material Name: Brick

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### 2. HAZARDS IDENTIFICATION

**Precautionary Statements:**

Do not eat, drink or smoke when using this product. Wash hands 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. Use only outdoors or in a well-ventilated area. Do not breathe dust.

**Response:**

If exposed or concerned: Get medical advice/attention. 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 brick dust is inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center/doctor if you feel unwell.

**Storage:**

Not Applicable

**Disposal:**

Dispose of unused or unwanted brick products in accordance with all local, regional, national and international regulations.

### 3. COMPOSITION/INFORMATION ON INGREDIENTS

Ingredient	CAS Number	% Weight
Aluminum Silicates	Various	50 – 85
Quartz	14808-60-7	Varies
Chromium compounds	Various	0 – 3
Manganese compounds	Various	0 – 3
Iron Compounds as granular body additives	Various	0 – 3
Calcium compounds	Various	0 – 3

**Additional Information:**

The above chemistries are provided for industrial hygiene and environmental purposes and are not intended to represent product specifications. This information has been compiled from data believed to be reliable. Elements such as aluminum, arsenic, boron, calcium, chromium, cobalt, copper, lead, molybdenum, nickel, tin, titanium, vanadium, and zirconium may be present in trace amounts. Brick products as shipped do not present an exposure hazard.

### 4. FIRST AID MEASURES

**Description of First Aid Measures**

**Eye Contact:**

Flush with running water. Obtain medical assistance if irritation continues.

## SAFETY DATA SHEET

Material Name: Brick

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**Skin Contact:** Wash with soap and water. If an allergic reaction causes a rash that does not heal within a few days consult a physician. Treat abrasions as any other scrape or cut with disinfectants and bandages.

**Ingestion:** None (no known acute effects).

**Inhalation:** Remove from exposure to airborne particulates. Consult a physician if breathing does not return to normal.

### Most Important Symptoms and Effects, Both Acute and Delayed

**Symptoms and Effects of Exposure:** For information on potential signs and symptoms of exposure, See Section 2 - Hazards Identification and/or Section 11 - Toxicological Information.

**Medical Conditions Aggravated by Exposure:** Excessive dust exposure may aggravate any existing respiratory disorders or diseases. Possible complications or allergies resulting in irritation to skin, eyes, and respiratory tract may occur from excessive exposure to dusts.

### Recommendations for Immediate Medical Attention and Special Treatment Needed

**Notes to Physician:** Symptoms may not appear immediately.

**Specific Treatments:** In case of accident or if you feel unwell, seek medical advice immediately.

## 5. FIRE-FIGHTING MEASURES

**Extinguishing Media:** Not applicable

### Special Hazards Arising from the Substance or Mixture

**Hazardous Combustion Products:** No data available

**Fire / Explosion Hazards:** Bricks as shipped do not pose a fire or explosion hazard.

### Advice for Fire-Fighters

None

## 6. ACCIDENTAL RELEASE MEASURES

### Personal Precautions and Protective Equipment

Use personal protection recommended in Section 8.

### Emergency Procedures

Not applicable.

### Methods and Material for Containment and Cleaning Up

Not applicable.

### Cleanup Procedures

Not applicable.

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Material Name: Brick

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## 7. HANDLING AND STORAGE

### Precautions for Safe Handling

Minimize dust generation and accumulation. Avoid breathing dust. Use wet methods, especially when cutting brick to reduce the generation of dust.

### Conditions for Safe Storage, Including any Incompatibilities

**Storage Conditions:** Always stack and store bricks in a stable manner to avoid falling hazards.

## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Aluminum Silicates

OSHA PEL

15 mg/m<sup>3</sup>

ACGIH TLV

10 mg/m<sup>3</sup>

### Quartz

OSHA PEL

10 / %SiO<sub>2</sub> + 2 mg/m<sup>3</sup>

ACGIH TLV

0.025 mg/m<sup>3</sup> (respirable)

### Chromium Compounds

OSHA PEL

Not available

ACGIH TLV

Not available

### Manganese Compounds

OSHA PEL

Not available

ACGIH TLV

Not available

### Iron Compounds as granular body additives

OSHA PEL

Not available

ACGIH TLV

Not available

### Calcium Compounds

OSHA PEL

Not available

ACGIH TLV

Not available

### Exposure Controls

#### Engineering Controls:

Provide adequate ventilation to maintain exposures below the OSHA PEL and ACGIH TLV for quartz and other substances.

#### Personal Protective Equipment:

Refer to applicable national standards and regulations in the selection and use of personal protective equipment (PPE).

#### Feet:

Use of steel toe shoes is recommended when handling brick.

#### Eyes and Face:

Face shields should be used when sawing brick.

#### Skin:

Use gloves and or protective clothing if abrasions or allergic reactions are experienced.

#### Respiratory protection:

For airborne concentration exceeding the OSHA PEL or ACGIH TLV use a NIOSH and/or MSHA approved respirator.

#### Other:

Use of wet sawing methods is recommended anytime that bricks must be cut.

Material Name: Brick

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Granular solid	<b>Color:</b>	Bricks come in a wide range of colors
<b>Odor:</b>	Essentially odorless	<b>Odor Threshold:</b>	No data available
<b>Molecular Formula:</b>	Mixture	<b>Molecular Weight:</b>	Mixture
<b>Solvent Solubility:</b>	No data available		
<b>Water Solubility:</b>	Negligible		
<b>pH:</b>	No data available.		
<b>Melting/Freezing Point (°C):</b>	No data available		
<b>Boiling Point (°C):</b>	No data available		
<b>Partition Coefficient: (Method, pH, Endpoint, Value)</b>	No data available		
<b>Decomposition Temperature (°C):</b>	No data available.		
<b>Evaporation Rate (Gram/s):</b>	No data available		
<b>Vapor Pressure (kPa):</b>	No data available		
<b>Vapor Density (g/ml):</b>	No data available		
<b>Relative Density:</b>	No data available		
<b>Viscosity:</b>	No data available		
<b>Flammability:</b>			
<b>Autoignition Temperature (Solid) (°C):</b>	No data available		
<b>Flammability (Solids):</b>	No data available		
<b>Flash Point (Liquid) (°C):</b>	No data available		
<b>Upper Explosive Limits (Liquid) (% by Vol.):</b>	No data available		
<b>Lower Explosive Limits (Liquid) (% by Vol.):</b>	No data available		

## 10. STABILITY AND REACTIVITY

<b>Reactivity:</b>	Bricks as shipped are not reactive
<b>Chemical Stability:</b>	Stable under normal conditions of use
<b>Possibility of Hazardous Reactions:</b>	
<b>Oxidizing Properties:</b>	No data available
<b>Incompatible Materials:</b>	No data available
<b>Hazardous Decomposition Products:</b>	No data available

## 11. TOXICOLOGICAL INFORMATION

### Effects of Short Term and Long Term Exposure:

#### Short Term

Bricks as shipped do not present an inhalation, ingestion or contact hazard. However, operations such as sawing and grinding may result in the following effects.

**Eye:** May cause irritation by abrasion with dust or chips.

Material Name: Brick

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## 11. TOXICOLOGICAL INFORMATION

**Skin:** Brick dust or chips may cause allergic reactions in hypersensitive individuals; May cause cuts and skin abrasions.

**Inhalation:** Brick dust or chips may cause congestion and irritation in nasal and respiratory passages.

**Ingestion:** No known acute effects.

### Long Term

Excessive exposures to respirable particulates (dust) over an extended period of time may result in the development of pulmonary diseases such as silicosis.

### Information on Toxicological Effects

**General Information:** Toxicological properties of the formulation have not been investigated. The information in this section describes the potential hazards of crystalline silica. Brick dust may contain crystalline silica, a chemical that has been determined by certain agencies to cause cancer and other chemicals known to cause cancer, birth defects and other reproductive harm. Inhalation of brick dust above established or recommended exposure levels should be avoided by use of wet sawing or shaping and/or use of a NIOSH and/or MSHA approved respirator.

**Carcinogen Status:** The following carcinogenicity classifications for crystalline silica have been established by the following agencies:

**OSHA:** Not regulated as a carcinogen

**IARC:** Group 1 carcinogenic in humans

**NIOSH:** Carcinogen, with no further categorization

**NTP:** Known carcinogen

## 12. ECOLOGICAL INFORMATION

There are no known environmental impacts. No ecological consideration when used according to directions.

## 13. DISPOSAL CONSIDERATIONS

**Waste Treatment Methods:** Dispose of waste in accordance with all applicable laws and regulations. State specific and Community specific provisions must be considered. It is recommended that waste minimization be practiced.

## 14. TRANSPORT INFORMATION

**This material is not regulated for transportation as a hazardous material/dangerous good.**

DOT: Bricks as shipped are not hazardous materials per DOT regulations.

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## SAFETY DATA SHEET

Material Name: Brick

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### 15. REGULATORY INFORMATION

#### Safety, Health and Environmental Regulations/Legislation Specific for the Substance or Mixture

**RCRA**

Brick in its solid form is typically considered a non-hazardous waste for disposal, but local regulation may vary, therefore all waste must be disposed/recycled/reclaimed in accordance with federal, state, and local environmental control regulations. Water containing brick solids, such as from wet sawing operations, should also be disposed of in accordance with federal, state and local environmental regulation. Brick waste should not be used as a blasting agent.

**EPCRA Section 311/312:**

Bricks as shipped are not a Section 311/312 reportable product.

**EPCRA Section 313:**

Bricks as shipped are not subject to the Section 313, Toxic Chemical Release Inventory reporting requirements.

**DOT:**

Bricks as shipped are not hazardous materials per DOT regulations.

**California Proposition 65:**

This product contains crystalline silica, a substance known to the State of California to cause cancer. This product may contain trace amounts of heavy metals known to the State of California to cause cancer, birth defects, or other reproductive harm.

### 16. OTHER INFORMATION

Glen-Gery Corporation considers our product an "article" as defined in 30 CFR 1200(b)(g)(iv) and 40 CFR 372.38. As an article, an SDS is not required and the product is exempt from all other requirements of the hazard communication standard. OSHA requires an SDS for brick because it is occasionally dry sawed. We recommend only wet sawing of brick.

**Data Sources:**

The data contained in this SDS may have been gathered from confidential internal sources, raw material suppliers, or from the published literature.

**Reasons for Revision:**

Converted MSDS to SDS.

**Prepared by:**

The Glen-Gery Corporation

This SDS was prepared with information believed accurate at the time of preparation and was prepared and provided in good faith. However, the Glen-Gery Corporation assumes no responsibility as to the accuracy or suitability of such information and no warranty expressed or implied is made.

**End of Safety Data Sheet**



# MATERIAL SAFETY DATA SHEET

For

## CONCRETE/CONCRETE PRODUCTS

(Wet unhardened concrete and dry hardened concrete products such as block, pipe, and precast concrete)

**Sequatchie Concrete Service, Inc.**

**Sequatchie Con**

### Section 1: PRODUCT AND COMPANY INFORMATION

Product Name(s):	Ready Mixed Concrete (Concrete)
Product Identifiers:	Ready Mixed Concrete, Concrete Ready Mix, Portland Cement Concrete, Ready Mix Grout, Permeable Concrete, Shotcrete, Gunit, Colored Concrete, Flowable Fill, Roller-Compacted Concrete, Fiber Reinforced Concrete
Manufacturer:	Information Telephone Number:
Sequatchie Concrete Service, Inc.	(423) 837-7913
210 Ash Avenue	Emergency Telephone Number:
South Pittsburg, Tennessee 37380	(800) 824-0824
Product Use:	Concrete is widely used as a structural component in construction applications.
Note:	This MSDS covers many types of Concrete. Individual composition of hazardous constituents may vary between types of Concrete.

### Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

Hazardous Components (Chemical Identity / Common Names)	CAS No.	OSHA PEL	ACGIH TLV	MSHA PEL	%
Portland Cement	65997-15-1	15mg m3 (Total) 5mg/m <sup>3</sup> (Respirable)	10mg m3 (Total)	10mg m3 (Total)	10-30%
Granite	None	NA	NA	N/A	0-65%
Limestone (CaCO <sub>3</sub> ) (Calcium carbonate, present, if limestone aggregates are used)	1317-653	15 mg m3 (Total)	10 mg/m <sup>3</sup> (Total)	10 mg/m <sup>3</sup>	0-65%
Crystalline Silica (Quartz) (Concrete aggregates may contain silica)	14808-60-7	30 (%SiO <sub>2</sub> +2)mg m3 (Total Particulate) 10(%SiO <sub>2</sub> +2)mg m3 (Respirable Particulate)	0.1mg m3 (Total) (Respirable quartz)	30 (%SiO <sub>2</sub> +2)mg m3 (Total) 10(%SiO <sub>2</sub> +2)mg m3 (Respirable)	0.5-80%
Water	N/A	N/A	N/A	N/A	15-25%
Fly Ash which contains:	68131-74-8	NA	N/A	N/A	1-4%
Aluminum Oxide (Al <sub>2</sub> O <sub>3</sub> )	1344-28-1	15mg m3 (Total) 5mg/m <sup>3</sup> (Respirable)	10mg m3	10mg m3	0.1-2%
Amorphous Silica	61790-53-2	80mg/m <sup>3</sup> (%SiO <sub>2</sub> )	10mg m3 (Total) 3mg m <sup>3</sup> (Respirable)	20mppcf	0.01-3%
Calcium Oxide (CaO)	1305-78-8	5mg/m <sup>3</sup>	2mg m <sup>3</sup>	5mg/m <sup>3</sup>	0-1%
Iron Oxide (as Fe <sub>2</sub> O <sub>3</sub> )	1309-37-1	10mg m3	10mg m3	10mg m3	0.1-2%

Note: Chemical admixtures may be present in quantities less than 1%. Information on specific aggregates, cementitious materials and admixtures will be provided by the supplier upon request.

### Section 3: HAZARD IDENTIFICATION

<p style="text-align: center;"><b>WARNING</b></p> <p style="text-align: center;"><b>Corrosive-Causes severe burns.</b></p> <p style="text-align: center;">Toxic-Harmful by inhalation. (Contains crystalline silica)</p> <p style="text-align: center;">Use proper engineering controls, work practices, and personal protective equipment to prevent exposure to wet or dry product. Read MSDS for details.</p>	
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Emergency Overview:	Unhardened concrete is an odorless semi-fluid, flowable, granular paste of varying color and texture. It is not combustible or explosive. Exposure of sufficient duration to wet concrete can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree burns.
Potential Health Effects:	
Eye Contact (acute):	Concrete may cause immediate or delayed irritation or inflammation. Eye contact with wet concrete 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. Direct contact can cause irritation before mechanical abrasion.
Skin contact (acute):	Wet unhardened concrete and concrete dust may cause dry skin, discomfort, irritation, severe burns, and dermatitis.
Burns:	Exposure of sufficient duration to wet unhardened concrete can cause serious, potential 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.
Dermatitis:	Wet unhardened concrete is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as redness, itching, rash, scaling, and cracking.
Sensitization:	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. Persons already sensitized may react to the first contact with wet unhardened concrete. Others may develop allergic dermatitis after years of repeated contact with wet concrete.
Ingestion:	Expected to be practically non-toxic. Ingestion of large amounts may cause gastrointestinal irritation and blockage.
Inhalation (general):	May result, depending on the degree of the exposure, from exposure to dust generated from cutting, grinding, crushing, or driving hardened concrete.
Inhalation (acute):	Breathing dust may cause nose, throat lung or mucous membrane irritation, including choking. Inhalation of high levels of dust can cause chemical burns to the nose, throat and lungs.
Inhalation (chronic):	Risk of injury depends on duration and level of exposure.
Silicosis:	This product contains crystalline silica. Prolonged or repeated inhalation of respirable crystalline silica from this product can cause silicosis, and other seriously disabling and fatal diseases.
Carcinogenicity:	Concrete is not listed as a carcinogen by IARC or NTP; however, concrete contains trace amounts of crystalline silica and hexavalent chromium which are classified by IARC and NTP as known human carcinogens.
Autoimmune Disease:	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 skin), systemic lupus erythematosus, rheumatoid arthritis and diseases affecting the kidneys.
Medical conditions Aggravated by Exposure:	Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure to concrete dust.

#### Section 4: FIRST AID MEASURES

Eye Contact:	Rinse eyes thoroughly with water for at least 15 minutes, including under lids, to remove all particles. Seek medical attention for abrasions and burns.
Skin Contact:	Wash with cool water and a pH neutral soap or a mild skin detergent. Seek medical attention for rash, burns, irritation, dermatitis, and prolonged unprotected exposures to wet concrete.
Inhalation:	Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.
Ingestion:	Do not induce vomiting. If conscious, have person drink plenty of water. Seek medical attention or contact poison control center immediately.

#### Section 5: FIREFIGHTING MEASURES

Flash point & Method:	Non-combustible, concrete poses no fire related hazard.
Combustion Products:	None.

#### Section 6: ACCIDENTAL RELEASE MEASURES

General:	Place spilled material into a contained area and then allow material to dry or solidify before disposal. Avoid contact with skin. Wear appropriate protective equipment as described in Section 8. Do not wash concrete down sewage and drainage systems or into bodies of water (e.g. lakes, streams, wetlands, etc.).
Waste Disposal Method:	Dispose of concrete according to Federal, State, Provincial and Local regulations.

#### Section 7: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Handling:	When cutting, grinding, crushing or drilling hardened concrete, use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits.
Engineering Controls:	Supplemental controls are not required when working with wet/unhardened concrete.
<b>Personal Protective Equipment (PPE):</b>	
<u>Respiratory Protection:</u>	When working with wet, unhardened concrete under ordinary conditions, no respiratory protection is required. When working with hardened concrete, wear a NIOSH approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.
<u>Eye Protection:</u>	Wear ANSI approved glasses with side shields or safety goggles when handling concrete to prevent contact with eyes. Wearing contact lenses is not recommended.
<u>Skin Protection:</u>	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.
Clothing:	Remove clothing and protective equipment that becomes saturated with wet concrete and immediately wash exposed areas.

#### Section 8: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Semi-fluid, Flowable, granular substance	Evaporation Rate:	NA.
Appearance:	Variety of Color (usually gray)	PH (in water):	12-13
Odor:	Slight to none	Boiling Point:	NA
Vapor Pressure:	NA.	Freezing Point:	<32°F (unhardened)
Vapor Density:	NA.	Viscosity:	Varies.
Specific Gravity:	1.9-2.4	Solubility in Water:	Slightly (0.1-1.0%)

#### Section 9: STABILITY AND REACTIVITY

Stability:	Hardened concrete is stable. Wet unhardened concrete is alkaline
Incompatibility:	Wet unhardened concrete is alkaline and is incompatible with acids, ammonium salts and aluminum, copper and some other metals (verify compatibility prior to incorporating with product). Concrete dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement in concrete reacts with water to form silicates and calcium hydroxide. These silicates react with powerful oxidizers.
Hazardous Polymerization:	Hazardous Decomposition: None.

#### Section 10 and 11: TOXICOLOGICAL AND ECOLOGICAL INFORMATION

For questions regarding toxicological and ecological information refer to contact information in Section 1.

#### Section 12: DISPOSAL CONSIDERATIONS

Dispose of excess material in compliance with applicable Federal, State, Provincial and Local regulations.

#### Section 13: TRANSPORT INFORMATION

This product is not classified as a Hazardous Material under U.S. DOT or Canadian TDG regulations.

#### Section 14: REGULATORY INFORMATION

OSHA/MSHA Hazard Communication:	This product is considered by OSHA/MSHA to be a hazardous material and should be included in the employer's hazard communication program.
CERCLA/SUPERFUND:	This product is not listed as a CERCLA hazardous substance.
EPCRA SARA Title III:	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 and is considered a hazardous and a delayed health hazard.
EPCRA SARA Section 313:	This product contains none of the substances subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372.
RCRA	If discarded in its hardened form, this product would not be a hazardous waste either by listing 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.
TSCA:	Portland Cement and crystalline silica are exempt from reporting under the inventory update rule.
California Proposition 65:	Crystalline silica (airborne particulates of respirable size) and Chromium (hexavalent compounds) are substances known by the State of California to cause cancer.
WHMIS/DSL:	Products containing crystalline silica and calcium carbonate are classified as D2A, E and are subject to WHMIS requirements.

## Section 15: OTHER INFORMATION

### Abbreviations:

<	Less than	NFPA	National Fire Protection Association
ACGIH	American Conference of Governmental Industrial Hygienists	NIOSH	National Institute for Occupational Safety and Health
CAS no	Chemical Abstract Service number	NTP	National Toxicology Program
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act	OSHA	Occupational Safety and Health Administration
CFR	Code for Federal Regulations	PEL	Permissible Exposure Limit
CL	Ceiling Limit	pH	Negative log of hydrogen ion
DOT	US Department of Transportation	PPE	Personal Protective Equipment
EST	Eastern Standard Time	RCRA	Resource Conservation and Recovery Act
HEPA	High-Efficiency Particulate Air	SARA	Superfund Amendments and Reauthorization Act
HMIS	Hazardous Materials Identification System	TDG	Transportation of Dangerous Goods
IARC	International Agency for Research on Cancer	TLV	Threshold Limit Value
MG/M <sup>3</sup>	Milligrams per cubic meter	TWA	Time Weighted Average (8 hour)
MSHA	Mine Safety and Health Administration	WHMIS	Workplace Hazardous Materials Information System
NA	Not Applicable		

This MSDS (Sections 1-15) was Revised on 03/01/2012

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