

Product	70% SiC Briquettes	Date Revised	July 23, 2013	

Miller and Company LLC 9700 West Higgins Road Suite 1000 Rosemont, Illinois 60018

Emergency Telephone Number: Chemtrec 800-262-8200

Other Information Calls: 847-696-2400

The subject product is a mechanical blend of the following ingredients:

Component	% in Mixture
90% SiC Grain	60 – 90 %
SiC Low Grade	0 – 20 %
SiC Mid Grade	0 – 40 %
Portland Cement	7 – 12%

Custom blended per chemical analysis of specific ingredients inventoried at time of blending so as to meet customer specifications.

Since the mixture presents no greater hazard than any of the individual components, and since the burden of information lies with the primary producer, the data sheets for the individual components are attached and will satisfy the requirements of the standard for a data sheet for the mixture. This interpretation comes from an OSHA field directive to compliance officers, "Appendix A, Clarifications and Interpretations of the Hazard Communication Standard (HCS)," OSHA CPL 2-2.38B, 15 August 1988.

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME : Silicon Carbide

TRADE NAME(S) : Silicon Carbide / De Oxo Sil CAS #409-21-2

CHEMICAL FORMULA : SiC

SUPPLIER'S NAME : Miller and Company LLC

ADDRESS: Miller and Company LLC

9700 W. Higgins Road, Suite 1000

Rosemont, IL 60018

EMERGENCY TELEPHONE NO : 800-424-9300 (Chemtrec)

TELEPHONE NO FOR INFORMATION : 847-696-2400

DATE PREPARED: September 10, 1997 REVIEWED AND UPDATED 10-01-03

BY SUDHIR GUPTA - VICE PRESIDENT

PRODUCT/MARKET GROUP

SECTION II: HAZARDOUS INGREDIENTS INFORMATION

PERCENT HAZARDOUS COMPONENTS CAS OSHA PEL* ACGIH TLV

80%-100% Silicon Carbide (409-21-2) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

< 4% Graphite (Synthetic) (None) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

< 1% Free Si (7440-21-3) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

< 7%***Free SiO₂ (14808-60-7) 0.1 MG/M3 0.1 MG/M3 **

* O.S.H.A. Final PEL limits effective 06/03/93.

** As quartz - To the best of our knowledge the SiO₂ present is in the form of alpha quartz.

*** The percent of respirable dust fraction has not been determined. This should be

measured using established industrial hygiene methods.

SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT : Decomposes at 2972 degrees C

Sublimes at 2700 degrees C

VAPOR PRESSURE : NA VAPOR DENSITY : NA PH : NA

SPECIFIC GRAVITY $(H_2O = 1)$: 3.217

MELTING POINT : See Boiling Point

EVAPORATION RATE : NA SOLUBILITY IN WATER : Insoluble

APPEARANCE AND ODOR : Dull Grey Crystal - No odor

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT : NA
FLAMMABLE LIMITS : NA
LEL : NA
OEL : NA
EXTINGUISHING MEDIA : NA
SPECIAL FIRE FIGHTING PROCEDURES : NA

UNUSUAL FIRE AND EXPLOSION HAZARDS : None (material is NOT combustible)

SECTION V: REACTIVITY DATA

STABILITY : Stable
CONDITIONS TO AVOID : None
INCOMPATIBILITY : NA
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS : None
HAZARDOUS POLYMERIZATION : Will not occur
CONDITIONS TO AVOID : None

SECTION VI: HEALTH HAZARD DATA

ROUTE(S) OF ENTRY : Inhalation

HEALTH HAZARDS : Physical irritation may lead to extensive

fibrosis and progressive lung disease

CARCINOGENICITY:

NPT? No IARC MONOGRAPHS? No OSHA REGULATED? No

SIGNS AND SYMPTOMS OF EXPOSURE: Respiratory Distress coughing

and shortness of breath

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Any respiratory condition

EMERGENCY AND FIRST-AID PROCEDURES: Remove from area of dust exposure.

If dust gets in eyes, flush immediately with large quantities of clean cool water.

SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

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

Sweep, shovel or vacuum material. Avoid excessive exposure to dust.

WASTE DISPOSAL METHOD: May be landfilled in accordance with state,

federal and local regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Minimize generation of dust.

OTHER PRECAUTIONS: Particles may be sharp and cause cuts and abrasions

to skin and eyes.

Use gloves and security glasses.

SECTION VIII: CONTROL MEASURES

RESPIRATORY PROTECTION : NIDSM approved dust respirator

recommended-required above PEL concentr.

VENTILATION : Local exhaust recommended

PROTECTIVE GLOVES : Recommended EYE PROTECTION : Recommended

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: None

WORK/HYGIENIC PRACTICES :

SECTION IX: SARA TITLE III REPORTING

To the best of our knowledge this product does not contain any substances requiring reporting on the SARA. Title III. Section 313 list.

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME : Silicon Carbide(Low-Grade)

TRADE NAME(S) : CAS #409-21-2

CHEMICAL FORMULA : SiC

SUPPLIER'S NAME : Miller and Company LLC

ADDRESS: Miller and Company LLC

9700 W. Higgins Road, Suite 1000

Rosemont, IL 60018

EMERGENCY TELEPHONE NO : 800-424-9300 (Chemtrec)

TELEPHONE NO FOR INFORMATION : 847-696-2400

DATE PREPARED: September 19, 1994 REVIEWED AND UPDATED 10-01-02

BY SUDHIR GUPTA – VICE PRESIDENT

PRODUCT/MARKET GROUP

<u>SECTION II: HAZARDOUS INGREDIENTS INFORMATION</u>

PERCENT HAZARDOUS COMPONENTS CAS OSHA PEL* ACGIH TLV

10% - 30% Silicon Carbide (409-21-2) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

10%-60% Graphite (Synthetic) (None) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

> .01% Free Si (7440-21-3) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

> 1% ***Free SiO₂ (14808-60-7) 0.1 MG/M3 0.1 MG/M3 **

> .2% CaO (1305-78-8) 5 MG/M3 2 MG/M3

> 1% Al₂O₃ (1344-28-1) 10 MG/M3 10 MG/M3

^{*} O.S.H.A. Final PEL limits effective 06/03/93.

^{**} As quartz - To the best of our knowledge the SiO₂ present is in the form of alpha quartz.

^{***} The percent of respirable dust fraction has not been determined. This should be measured using established industrial hygiene methods.

SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT : Decomposes at 2972 degrees C

Sublimes at 2700 degrees C

VAPOR PRESSURE : NA VAPOR DENSITY : NA PH : NA

SPECIFIC GRAVITY $(H_2O = 1)$: 3.217

MELTING POINT : See Boiling Point

EVAPORATION RATE : NA SOLUBILITY IN WATER : Insoluble

APPEARANCE AND ODOR : Dull Grey Crystal - No odor

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT : NA
FLAMMABLE LIMITS : NA
LEL : NA
OEL : NA
EXTINGUISHING MEDIA : NA
SPECIAL FIRE FIGHTING PROCEDURES : NA

UNUSUAL FIRE AND EXPLOSION HAZARDS : None (material is NOT combustible)

SECTION V: REACTIVITY DATA

STABILITY : Stable
CONDITIONS TO AVOID : None
INCOMPATIBILITY : NA
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS : None
HAZARDOUS POLYMERIZATION : Will not occur
CONDITIONS TO AVOID : None

SECTION VI: HEALTH HAZARD DATA

ROUTE(S) OF ENTRY : Inhalation

HEALTH HAZARDS : Physical irritation may lead to extensive

fibrosis and progressive lung disease

CARCINOGENICITY:

NPT? No IARC MONOGRAPHS? No OSHA REGULATED? No

SIGNS AND SYMPTOMS OF EXPOSURE: Respiratory Distress coughing

and shortness of breath

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Any respiratory condition

EMERGENCY AND FIRST-AID PROCEDURES: Remove from area of dust exposure.

If dust gets in eyes, flush immediately with large quantities of clean cool water.

SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

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

Sweep, shovel or vacuum material. Avoid excessive exposure to dust.

WASTE DISPOSAL METHOD: May be landfilled in accordance with state,

federal and local regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Minimize generation of dust.

OTHER PRECAUTIONS: Particles may be sharp and cause cuts and abrasions

to skin and eyes.

Use gloves and security glasses.

SECTION VIII: CONTROL MEASURES

RESPIRATORY PROTECTION : NIDSM approved dust respirator

recommended-required above PEL concentr.

VENTILATION : Local exhaust recommended

PROTECTIVE GLOVES : Recommended EYE PROTECTION : Recommended

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: None

WORK/HYGIENIC PRACTICES :

<u>SECTION IX: SARA TITLE III REPORTING</u>

To the best of our knowledge this product does not contain any substances requiring reporting on the SARA. Title III. Section 313 list.

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME : Silicon Carbide(Mid-Grade)

TRADE NAME(S) : CAS #409-21-2

CHEMICAL FORMULA : SiC

SUPPLIER'S NAME : Miller and Company LLC

ADDRESS: Miller and Company LLC

9700 W. Higgins Road, Suite 1000

Rosemont, IL 60018

EMERGENCY TELEPHONE NO : 800-424-9300 (Chemtrec)

TELEPHONE NO FOR INFORMATION : 847-696-2400

DATE PREPARED: September 19, 1994 REVIEWED AND UPDATED 10-01-02

BY SUDHIR GUPTA – VICE PRESIDENT

PRODUCT/MARKET GROUP

SECTION II: HAZARDOUS INGREDIENTS INFORMATION

PERCENT HAZARDOUS COMPONENTS CAS OSHA PEL* ACGIH TLV

30% - 70% Silicon Carbide (409-21-2) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

10%-30% Graphite (Synthetic) (None) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

> .1% Free Si (7440-21-3) 10 MG/M3 10 MG/M3

(5 MG/M3 Respirable dust fraction)

> 1% ***Free SiO₂ (14808-60-7) 0.1 MG/M3 0.1 MG/M3 **

> .1% CaO (1305-78-8) 5 MG/M3 2 MG/M3

> 1% Al₂O₃ (1344-28-1) 10 MG/M3 10 MG/M3

^{*} O.S.H.A. Final PEL limits effective 06/03/93.

^{**} As quartz - To the best of our knowledge the SiO₂ present is in the form of alpha quartz.

^{***} The percent of respirable dust fraction has not been determined. This should be measured using established industrial hygiene methods.

SECTION III: PHYSICAL/CHEMICAL CHARACTERISTICS

BOILING POINT : Decomposes at 2972 degrees C

Sublimes at 2700 degrees C

VAPOR PRESSURE : NA VAPOR DENSITY : NA PH : NA

SPECIFIC GRAVITY $(H_2O = 1)$: 3.217

MELTING POINT : See Boiling Point

EVAPORATION RATE : NA SOLUBILITY IN WATER : Insoluble

APPEARANCE AND ODOR : Dull Grey Crystal - No odor

SECTION IV: FIRE AND EXPLOSION HAZARD DATA

FLASH POINT : NA
FLAMMABLE LIMITS : NA
LEL : NA
OEL : NA
EXTINGUISHING MEDIA : NA
SPECIAL FIRE FIGHTING PROCEDURES : NA

UNUSUAL FIRE AND EXPLOSION HAZARDS : None (material is NOT combustible)

SECTION V: REACTIVITY DATA

STABILITY : Stable
CONDITIONS TO AVOID : None
INCOMPATIBILITY : NA
HAZARDOUS DECOMPOSITION OR BY-PRODUCTS : None
HAZARDOUS POLYMERIZATION : Will not occur
CONDITIONS TO AVOID : None

SECTION VI: HEALTH HAZARD DATA

ROUTE(S) OF ENTRY : Inhalation

HEALTH HAZARDS : Physical irritation may lead to extensive

fibrosis and progressive lung disease

CARCINOGENICITY:

NPT? No IARC MONOGRAPHS? No OSHA REGULATED? No

SIGNS AND SYMPTOMS OF EXPOSURE: Respiratory Distress coughing

and shortness of breath

MEDICAL CONDITIONS GENERALLY AGGRAVATED BY EXPOSURE:

Any respiratory condition

EMERGENCY AND FIRST-AID PROCEDURES: Remove from area of dust exposure.

If dust gets in eyes, flush immediately with large quantities of clean cool water.

SECTION VII: PRECAUTIONS FOR SAFE HANDLING AND USE

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

Sweep, shovel or vacuum material. Avoid excessive exposure to dust.

WASTE DISPOSAL METHOD: May be landfilled in accordance with state,

federal and local regulations.

PRECAUTIONS TO BE TAKEN IN HANDLING AND STORING:

Minimize generation of dust.

OTHER PRECAUTIONS: Particles may be sharp and cause cuts and abrasions

to skin and eyes.

Use gloves and security glasses.

SECTION VIII: CONTROL MEASURES

RESPIRATORY PROTECTION : NIDSM approved dust respirator

recommended-required above PEL concentr.

VENTILATION : Local exhaust recommended

PROTECTIVE GLOVES : Recommended EYE PROTECTION : Recommended

OTHER PROTECTIVE CLOTHING OR EQUIPMENT: None

WORK/HYGIENIC PRACTICES :

<u>SECTION IX: SARA TITLE III REPORTING</u>

To the best of our knowledge this product does not contain any substances requiring reporting on the SARA. Title III. Section 313 list.





Material Safety Data Sheet

Section 1: PRODUCT AND COMPANY INFORMATION

Product Name(s):

Lafarge Portland Cement (cement)

Product Identifiers:

Cement, Portland Cement, Hydraulic Cement, Oil Well Cement, Trinity® White Cement, Antique White Cement, Portland Cement Type I, IA, IE, II, I/II, IIA, II L.A., III, IIIA, IV, IVA, V, VA, 10, 20, 30, 40, 50, GU, MS, MH, HE, LH, HS, OWH, OWG

Cement, OW Class G HSR

Manufacturer:

Information Telephone Number:

Lafarge North America Inc.

703-480-3600 (9am to 5pm EST)

12950 Worldgate Drive, Suite 500

Emergency Telephone Number:

Herndon, VA 20170

1-800-451-8346 (3E Hotline)

Product Use:

Cement is used as a binder in concrete and mortars that are widely used in

construction. Cement is distributed in bags, totes and bulk shipment.

Note:

This MSDS covers many types of Portland cement. Individual composition of

hazardous constituents will vary between types of Portland cement.

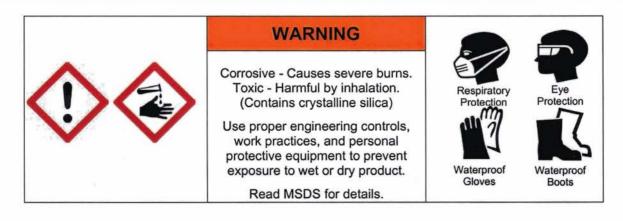
Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

Component	Percent (By Weight)	CAS Number	OSHA PEL -TWA (mg/m³)	ACGIH TLV- TWA (mg/m³)	LD ₅₀ (mouse, intraperitoneal)	LC ₅₀
Portland Cement*	100	65997-15-1	15 (T); 5 (R)	10 (R)	NA	NA
Calcium Sulfate*	2-10	13397-24-5	15 (T); 5 (R)	10 (T)	NA	NA
Calcium Carbonate*	0-5	1317-65-3	15 (T); 5 (R)	10 (T)	NA	NA
Calcium Oxide	0-5	1305-78-8	5 (T)	2 (T)	3059 mg/kg	NA
Magnesium Oxide	0-4	1309-48-4	15 (T)	10 (T)	NA	NA
Crystalline Silica	0-0.2	14808-60-7	[(10) / (%SiO ₂ +2)] (R); [(30) / (%SiO ₂ +2)] (T)	0.05 (R)	NA	NA

Note: Exposure limits for components noted with an * contain no asbestos and <1% crystalline silica

Cement is made from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of chemicals may be detected during chemical analysis. For example, cement may contain trace amounts of calcium oxide (also known as free lime or quick lime), free magnesium oxide, potassium and sodium sulfate compounds, chromium compounds, nickel compounds, and other trace compounds.

Section 3: HAZARD IDENTIFICATION







Section 3: HAZARD IDENTIFICATION (continued)

Cement is a solid, grey, off white, or white odorless powder. It is not combustible or Emergency Overview:

> explosive. A single, short-term exposure to the dry powder presents little or no hazard. Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the body, can cause serious, potentially irreversible tissue (skin, eye, respiratory tract) damage due to chemical (caustic) burns, including third degree

burns.

Potential Health Effects:

Eye Contact: Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact

> with large amounts of dry powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid

and medical attention to prevent significant damage to the eye.

Skin Contact: Cement may cause dry skin, discomfort, irritation, severe burns, and dermatitis.

Exposure of sufficient duration to wet cement, or to dry cement on moist areas of the Burns:

> body, can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin

exposure may be hazardous even if there is no pain or discomfort.

Dermatitis: Cement is capable of causing dermatitis by irritation and allergy. Skin affected by

dermatitis may include symptoms such as, redness, itching, rash, scaling, and

cracking.

Irritant dermatitis is caused by the physical properties of cement including alkalinity

and abrasion.

Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) present in cement. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with cement. Others

may develop allergic dermatitis after years of repeated contact with cement.

Inhalation (acute): Breathing dust may cause nose, throat or lung irritation, including choking, depending

on the degree of exposure. 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, a seriously disabling and fatal

lung disease. See Note to Physicians in Section 4 for further information.

Carcinogenicity: Cement is not listed as a carcinogen by IARC or NTP; however, cement 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 the skin), systemic lupus

erythematosus, rheumatoid arthritis and diseases affecting the kidneys.

Silicosis increases the risk of tuberculosis. Tuberculosis:

Some studies show an increased incidence of chronic kidney disease and end-stage Renal Disease:

renal disease in workers exposed to respirable crystalline silica.



Section 3: HAZARD IDENTIFICATION (continued)

Ingestion: Do not ingest cement. Although ingestion of small quantities of cement is not known

to be harmful, large quantities can cause chemical burns in the mouth, throat,

stomach, and digestive tract.

Medical Conditions

Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary Aggravated by Exposure: disease) or sensitivity to hexavalent chromium can be aggravated by exposure.

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 cement, cement mixtures or liquids from wet cement.

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.

Note to Physician: The three types of silicosis include:

> Simple chronic silicosis - which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD).

> Accelerated silicosis - occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years). Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis.

> Acute silicosis - results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels.

Progressive massive fibrosis may occur in simple or accelerated silicosis, but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures.

Section 5: FIREFIGHTING MEASURES

Flashpoint & Method: Non-combustible

Firefighting Equipment:

Cement poses no firerelated hazard. A SCBA is recommended to limit exposures to combustion

Revised: 3/3/05

MSDS: Lafarge Portland Cement

products when fighting any

fire.

Extinguishing Media: Use extinguishing

media appropriate for

Avoid breathing dust.

Wet cement is caustic.

surrounding fire.

Combustion Products:

None.

General Hazard:





Section 6: ACCIDENTAL RELEASE MEASURES

General: Place spilled material into a container. Avoid actions that cause the cement to

become airborne. Avoid inhalation of cement and contact with skin. Wear appropriate protective equipment as described in Section 8. Scrape wet cement and place in container. Allow material to dry or solidify before disposal. Do not wash cement down sewage and drainage systems or into bodies of water (e.g. streams).

Waste Disposal Method: Dispose of cement according to Federal, State, Provincial and Local regulations.

Section 7: HANDLING AND STORAGE

General: Keep bulk and bagged cement dry until used. Stack bagged material in a secure

manner to prevent falling. Bagged cement is heavy and poses risks such as sprains and strains to the back, arms, shoulders and legs during lifting and mixing. Handle

with care and use appropriate control measures.

Engulfment hazard. To prevent burial or suffocation, do not enter a confined space, such as a silo, bin, bulk truck, or other storage container or vessel that stores or contains cement. Cement can buildup or adhere to the walls of a confined space.

The cement can release, collapse or fall unexpectedly.

Properly ground all pneumatic conveyance systems. The potential exists for static build-up and static discharge when moving cement powders through a plastic, non-conductive, or non-grounded pneumatic conveyance system. The static discharge

may result in damage to equipment and injury to workers.

Usage: Cutting, crushing or grinding hardened cement, concrete or other crystalline silica-

bearing materials will release respirable crystalline silica. Use all appropriate measures of dust control or suppression, and Personal Protective Equipment (PPE)

described in Section 8 below.

Housekeeping: Avoid actions that cause the cement to become airborne during clean-up such as dry

sweeping or using compressed air. Use HEPA vacuum or thoroughly wet with water

to clean-up dust. Use PPE described in Section 8 below.

Storage Temperature: Unlimited. Storage Pressure: Unlimited.

Clothing: Promptly remove and launder clothing that is dusty or wet with cement. Thoroughly

wash skin after exposure to dust or wet cement.

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Engineering Controls: Use local exhaust or general dilution ventilation or other suppression methods to

maintain dust levels below exposure limits.

Personal Protective Equipment (PPE):

Respiratory Under ordinary conditions no respiratory protection is required. Wear a NIOSH

Protection: approved respirator that is properly fitted and is in good condition when exposed to

dust above exposure limits.

Eye Protection: Wear ANSI approved glasses or safety goggles when handling dust or wet cement to

prevent contact with eyes. Wearing contact lenses when using cement, under dusty

conditions, is not recommended.



MSDS: Lafarge Portland Cement

Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION (continued)

Skin Protection:

Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Do not rely on barrier creams, in place of impervious gloves. Remove clothing and protective equipment that becomes saturated with wet cement and

immediately wash exposed areas.

Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:

Solid (powder).

Evaporation Rate:

NA

Appearance:

Gray, off white or white

pH (in water):

12 - 13

Odor:

powder. None.

Boiling Point:

>1000° C

Vapor Pressure:

NA. NA. Freezing Point:

Viscosity:

None, solid. None, solid.

Vapor Density: Specific Gravity:

3.15

Solubility in Water:

Slightly (0.1 - 1.0%)

Section 10: STABILITY AND REACTIVITY

Stability:

Stable. Keep dry until use. Avoid contact with incompatible materials.

Incompatibility:

Wet cement is alkaline and is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid, producing corrosive silicon tetrafluoride gas. Cement reacts with water to form silicates and calcium hydroxide. Silicates react with powerful oxidizers such as fluorine, boron trifluoride, chlorine

trifluoride, manganese trifluoride, and oxygen difluoride.

Hazardous Polymerization:

None.

Hazardous Decomposition:

None.

Section 11 and 12: TOXICOLOGICAL AND ECOLOGICAL INFORMATION

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

Section 13: DISPOSAL CONSIDERATIONS

Dispose of waste and containers in compliance with applicable Federal, State, Provincial and Local regulations.

Section 14: TRANSPORT INFORMATION

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

Section 15: REGULATORY INFORMATION

OSHA/MSHA Hazard

Communication:

This product is considered by OSHA/MSHA to be a hazardous chemical and should

be included in the employer's hazard communication program.

CERCLA/SUPERFUND:

This product is not listed as a CERCLA hazardous substance.

EPCRA

This product has been reviewed according to the EPA Hazard Categories

SARA Title III:

promulgated under Sections 311 and 312 of the Superfund Amendment and Reauthorization Act of 1986 and is considered a hazardous chemical and a delayed

health hazard.

EPRCA

This product contains none of the substances subject to the reporting requirements of

SARA Section 313:

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of

1986 and 40 CFR Part 372.



Section 15: REGULATORY INFORMATION (continued)

RCRA: If discarded in its purchased form, this product would not be a hazardous waste

either by listing or characteristic. However, under RCRA, it is the responsibility of the product user to determine at the time of disposal, whether a material containing the

product or derived from the product should be classified as a hazardous waste.

TSCA: Portland cement and crystalline silica are exempt from reporting under the inventory

update rule.

California Crystalline silica (airborne particulates of respirable size) and Chromium (hexavalent

Proposition 65: 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 16: OTHER INFORMATION

Abbreviations:

>	Greater than	NA	Not Applicable
ACGIH	American Conference of Governmental Industrial Hygienists	NFPA	National Fire Protection Association
CAS No	Chemical Abstract Service number	NIOSH	National Institute for Occupational Safety and Health
CERCLA	Comprehensive Environmental	NTP	National Toxicology Program
	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	U.S. Department of Transportation	PPE	Personal Protective Equipment
EST	Eastern Standard Time	R	Respirable Particulate
HEPA	High-Efficiency Particulate Air	RCRA	Resource Conservation and Recovery Act
HMIS	Hazardous Materials Identification System	SARA	Superfund Amendments and Reauthorization Act
IARC	International Agency for Research on Cancer	T	Total Particulate
		TDG	Transportation of Dangerous Goods
LC ₅₀	Lethal Concentration	TLV	Threshold Limit Value
LD ₅₀	Lethal Dose	TWA	Time Weighted Average (8 hour)
mg/m ³	Milligrams per cubic meter	VACHATIC	Workplace Hazardous Materials
MSHA	Mine Safety and Health Administration	WHMIS	Information System

This MSDS (Sections 1-16) was revised on March 3, 2005.

An electronic version of this MSDS is available at: www.lafarge-na.com under the Products section.

Lafarge North America Inc. (LNA) believes the information contained herein is accurate; however, LNA makes no guarantees with respect to such accuracy and assumes no liability in connection with the use of the information contained herein which is not intended to be and should not be construed as legal advice or as insuring compliance with any federal, state or local laws or regulations. Any party using this product should review all such laws, rules, or regulations prior to use, including but not limited to US and Canada Federal, Provincial and State regulations.

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

Page 6 of 6 Revised: 3/3/05