



# **Material Safety Data Sheet**

## **Section 1: PRODUCT AND COMPANY INFORMATION**

**Product Name(s):** Lafarge Ready Mix Concrete (Concrete)

**Product Identifiers:** Ready Mix Concrete, Concrete Ready Mix, Portland Cement Concrete, Ready Mix

> Stucco, Ready Mix Grout, Ready Mix, Concrete, Freshly Mixed Concrete, Colloidal Concrete, Permeable Concrete, Shotcrete, Gunite, Polymer-Portland Cement Concrete, Colored Concrete, Flowable Fill, Roller-Compacted Concrete, Fiber Weathermix, UltraCurb<sup>™</sup>, UltraDrive<sup>™</sup>, aFooting<sup>™</sup>, UltraPatio<sup>™</sup>, UltraStamp<sup>™</sup> UltraFlo-Fil<sup>™</sup>, Reinforced Concrete, UltraStamp<sup>TM</sup>, UltraTilt<sup>™</sup>. UltraHorizontal<sup>™</sup>, UltraFooting<sup>™</sup>, UltraVertical<sup>™</sup>, Agrifarge<sup>™</sup> Plus, Agrifarge<sup>™</sup> RP, Agrifarge<sup>™</sup> 20, 25, 30, 32,

ArteviaColor<sup>™</sup>, Chronolia<sup>™</sup>, Extensia<sup>™</sup>, Agilia<sup>®</sup> Screed C.

Manufacturer: **Information Telephone Number:** 

703-480-3600 (9am to 5pm EST) Lafarge North America Inc.

12018 Sunrise Valley Drive, Suite 500 **Emergency Telephone Number:** Reston, VA 20191 1-800-451-8346 (3E Hotline)

**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 will vary between types of Concrete.

#### Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

	Percent (By		OSHA PEL -TWA	ACGIH TLV-		
Component	Weight)	CAS Number	(mg/m <sup>3</sup> )	TWA (mg/m <sup>3</sup> )	LD <sub>50</sub> (mouse)	LC <sub>50</sub>
Crystalline Silica	0-90	14808-60-7	[(10) / (%SiO <sub>2</sub> +2)] (R); [(30) / (%SiO <sub>2</sub> +2)] (T)			NA
Calcium Carbonate*	25-65	1317-65-3	15 (T); 5 (R)	15 (T); 5 (R) 3 (R); 10 (T)		NA
Portland Cement*	10-30	65997-15-1	15 (T); 5 (R)	1 (R)	NA	NA
Calcium Hydroxide	15-25	1305-62-0	15 (T); 5 (R)	5 (T)	7300 mg/kg (oral)	NA
Fly Ash	0-20	68131-74-8	NA	NA	NA	NA
Calcium Oxide	0-5	1305-78-8	5 (T)	2 (T)	3059 mg/kg (intraperitoneal)	NA
Magnesium Oxide	0-4	1309-48-4	15 (T)	10 (I)	NA	NA
Calcium Sulfate*	0-2	13397-24-5	15 (T); 5 (R)	10 (I)	NA	NA
Particulate Not Otherwise Regulated	-	NA	15 (T); 5 (R)	10 (T); 3 (R)	NA	NA

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

Concrete contains cement which is manufactured from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of chemicals may be detected during chemical analysis such as: potassium and sodium sulfate compounds, chromium compounds, nickel compounds, and other trace compounds.

#### Section 3: HAZARD IDENTIFICATION



## WARNING

Corrosive - Causes severe burns. Toxic - Harmful by inhalation. (Contains crystalline silica)

Use proper engineering controls, work practices, and personal protective equipment to prevent exposure to wet or dry product.

Read MSDS for details.





Waterproof

Gloves

**Boots** 

Revised: 03/01/11 Page 1 of 6



# Section 3: HAZARD IDENTIFICATION (continued)

**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.

Skin Contact (acute): Concrete may cause dry skin, discomfort, irritation, severe burns, and dermatitis.

Burns: Exposure of sufficient duration to wet concrete 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: 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.

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

and abrasion.

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 concrete. Others may develop allergic dermatitis after years of repeated contact with

wet concrete.

Inhalation (acute): Breathing dust may cause nose, throat lung or mucous membrane 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: 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.

<u>Autoimmune</u>

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 Disease:

autoimmune disorders such as scleroderma (thickening of the skin), systemic lupus

erythematosus, rheumatoid arthritis and diseases affecting the kidneys.

Tuberculosis: Silicosis increases the risk of tuberculosis.

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

renal disease in workers exposed to respirable crystalline silica.

Revised: 03/01/11 Page 2 of 6





# **Section 3: HAZARD IDENTIFICATION (continued)**

**Ingestion:** Do not ingest concrete. Although ingestion of small quantities of concrete 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 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.

**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**

**Extinguishing Media:** 

Flashpoint & Method: Non-combustible Firefighting Equipment: Concrete poses no fire-related hazard. A SCBA is

General Hazard: Avoid breathing dust. recommended to limit
Wet concrete is caustic. exposures to combustion

products when fighting any

Use extinguishing fire.

surrounding fire. Combustion Products: None.

Page 3 of 6 Revised: 03/01/11



## Section 6: ACCIDENTAL RELEASE MEASURES

General: Place spilled material into a container. Avoid contact with skin. Wear appropriate

protective equipment as described in Section 8. Scrape wet concrete and place in container. Allow material to dry or solidify before disposal. Do not wash concrete

down sewage and drainage systems or into bodies of water (e.g. streams).

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

#### Section 7: HANDLING AND STORAGE

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.

Storage Temperature: Unlimited. Storage Pressure: Unlimited.

**Clothing:** Promptly remove and launder clothing that is wet with concrete. Thoroughly wash

skin after exposure to wet concrete.

## 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):** 

Protection:

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

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 wet concrete to

prevent contact with eyes. Wearing contact lenses, when using concrete, is not

recommended.

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: Semi-fluid, Flowable, granular Evaporation Rate: NA.

paste.

Appearance: Variety of color (usually gray) pH (in water): 12 – 13

Odor:None.Boiling Point:NAVapor Pressure:NA.Freezing Point:NA.Vapor Density:NA.Viscosity:Varies.

Specific Gravity: 1.9 – 2.4 Solubility in Water: Slightly (0.1 - 1.0%)

Page 4 of 6 Revised: 03/01/11



## **Section 10: STABILITY AND REACTIVITY**

**Stability:** Hardened concrete is stable. Avoid contact with incompatible materials.

Incompatibility: Wet concrete 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** 

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 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

WHMIS/DSL:

**Proposition 65:** 

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

Products containing crystalline silica and calcium carbonate are classified as D2A, E

and are subject to WHMIS requirements.

Page 5 of 6 Revised: 03/01/11



## **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	
	Comprehensive Environmental	NTP	National Toxicology Program	
CERCLA	Response, Compensation and Liability Act	OSHA	Occupational Safety and Health Administration	
CFR	Code for Federal Regulations	PEL	Permissible Exposure Limit	
CL	Ceiling Limit	pН	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	Т	Total Particulate	
	Cancer	TDG	Transportation of Dangerous Goods	
LC <sub>50</sub>	Lethal Concentration	TLV	Threshold Limit Value	
LD <sub>50</sub>	Lethal Dose	TWA	Time Weighted Average (8 hour)	
mg/m <sup>3</sup>	Milligrams per cubic meter	VAZLINALO	Workplace Hazardous Materials	
MSHA	Mine Safety and Health Administration	WHMIS	Information System	

This MSDS (Section 1) was revised on March 1, 2011.

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

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Page 6 of 6 Revised: 03/01/11