

### SECTION 1: IDENTIFICATION

#### 1.1. Product Identifier

**Product Form:** Mixture

**Product Name:** Portland Cement Clinker

#### 1.2. Intended Use of the Product

Cement clinker is produced by heating to high temperature a mixture of substances such as limestone and shale. When cement clinker is ground with a specified amount of gypsum, it will produce Portland cement or when ground with specified amounts of gypsum and other pozzolanic materials it will produce blended cements.

#### 1.3. Name, Address, and Telephone of the Responsible Party

##### Company

Lafarge North America Inc.

8700 West Bryn Mawr Avenue, Suite 300

Chicago, IL 60631

Information: 773-372-1000 (9am to 5pm CST)

email: [SDSinfo@Lafarge.com](mailto:SDSinfo@Lafarge.com)

Website: [www.lafarge-na.com](http://www.lafarge-na.com)

#### 1.4. Emergency Telephone Number

**Emergency Number** : 1-800-451-8346 (3E Hotline)

### SECTION 2: HAZARDS IDENTIFICATION

#### 2.1. Classification of the Substance or Mixture

##### Classification (GHS-US)

Skin Irrit. 2 H315

Eye Dam. 1 H318

Skin Sens. 1 H317

Carc. 1A H350

STOT SE 3 H335

Full text of H-phrases: see section 16

#### 2.2. Label Elements

##### GHS-US Labeling

##### Hazard Pictograms (GHS-US)



##### Signal Word (GHS-US)

: Danger

##### Hazard Statements (GHS-US)

: H315 - Causes skin irritation.  
H317 - May cause an allergic skin reaction.  
H318 - Causes serious eye damage.  
H335 - May cause respiratory irritation.  
H350 - May cause cancer.

##### Precautionary Statements (GHS-US)

: P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P261 - Avoid breathing dust.  
P264 - Wash hands, forearms, exposed areas thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P272 - Contaminated work clothing must not be allowed out of the workplace.  
P280 - Wear protective gloves, protective clothing, eye protection.  
P302+P352 - IF ON SKIN: Wash with plenty of water.  
P304+P340 - IF INHALED: Remove person to fresh air and keep at rest in a position comfortable for breathing.

# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

P305+P351+P338 - IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P310 - Immediately call a POISON CENTER/doctor.  
P332+P313 - If skin irritation occurs: Get medical advice/attention.  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
P362 - Take off contaminated clothing and wash before reuse.  
P362+P364 - Take off contaminated clothing and wash it before reuse.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.  
P501 - Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

### 2.3. Other Hazards

Individuals with lung disease (e.g. bronchitis, emphysema, COPD, pulmonary disease) can be aggravated by exposure.

### 2.4. Unknown Acute Toxicity (GHS-US) Not available

## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1. Substances

Not applicable

### 3.2. Mixture

| Name                        | Product Identifier  | % (w/w)          | Classification (GHS-US)  |
|-----------------------------|---------------------|------------------|--|
| Cement, portland, chemicals | (CAS No) 65997-15-1 | 100              | Skin Irrit. 2, H315<br>Eye Dam. 1, H318<br>Skin Sens. 1, H317<br>STOT SE 3, H335 |
| Contains                    | Product Identifier  | % (w/w)          | Classification (GHS-US)  |
| Limestone                   | (CAS No) 1317-65-3  | 0.1 - 1<br>1 - 5 | Not classified   |
| Magnesium oxide (MgO)       | (CAS No) 1309-48-4  | 0.1 - 1<br>1 - 5 | Not classified   |
| Quartz                      | (CAS No) 14808-60-7 | 0.1 - 1          | Carc. 1A, H350<br>STOT SE 3, H335<br>STOT RE 1, H372                             |

Multiple WHMIS ranges have been utilized to account for varying concentration.

Full text of H-phrases: see section 16

## SECTION 4: FIRST AID MEASURES

### 4.1. Description of First Aid Measures

**General:** Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label if possible).

**Inhalation:** Move person to fresh air. Seek medical attention for discomfort or if coughing or other symptoms do not subside.

**Skin Contact:** Wash with cool water and a pH neutral soap or a mild skin detergent for at least 15 minutes. Seek medical attention for rash, irritation, dermatitis, and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement.

**Eye Contact:** Rinse eyes thoroughly with water for at least 60 minutes, including under lids, to remove all particles. Seek medical attention for abrasions or burns.

**Ingestion:** Do NOT induce vomiting. Drink plenty of water. Rinse mouth. Call a POISON CENTER/doctor if you feel unwell.

### 4.2. Most Important Symptoms and Effects Both Acute and Delayed

**General:** Corrosive, causes burns to eyes.

# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

**Inhalation:** 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. 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 clinker and cement are not listed as a carcinogen by IARC or NTP; however, clinker dust and 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.

**Skin Contact:** Cement clinker and cement may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Burns: Exposure of sufficient duration to wet cement, or to clinker dust or dry cement on moist areas of the body, can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort. Dermatitis: Cement and clinker dust are 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 clinker dust and 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 clinker dust or cement.

**Eye Contact:** Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of clinker dust, dry cement powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

**Ingestion:** Ingestion of the dusts of this product may cause irritation of the mucus membranes.

**Chronic Symptoms:** If dust is generated, repeated exposure through inhalation may cause cancer or lung disease.

**4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed** No additional information available

## SECTION 5: FIRE-FIGHTING MEASURES

### 5.1. Extinguishing Media

**Suitable Extinguishing Media:** Use extinguishing media appropriate for surrounding fire.

**Unsuitable Extinguishing Media:** Do not use a heavy water stream. Use of heavy stream of water may spread fire.

### 5.2. Special Hazards Arising From the Substance or Mixture

**Fire Hazard:** Not flammable.

**Explosion Hazard:** Product is not explosive.

**Reactivity:** Wet cement clinker and cement is caustic.

### 5.3. Advice for Firefighters

**Precautionary Measures Fire:** Exercise caution when fighting any chemical fire.

**Protection During Firefighting:** Do not enter fire area without proper protective equipment, including respiratory protection.

**Hazardous Combustion Products:** None known.

### Reference to Other Sections

Refer to section 9 for flammability properties.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

### 6.1. Personal Precautions, Protective Equipment and Emergency Procedures

**General Measures:** Do not breathe dust. Do not get in eyes, on skin, or on clothing.

#### 6.1.1. For Non-Emergency Personnel

**Protective Equipment:** Use appropriate personal protection equipment (PPE).

**Emergency Procedures:** Evacuate unnecessary personnel.

#### 6.1.2. For Emergency Personnel

**Protective Equipment:** Equip cleanup crew with proper protection.

**Emergency Procedures:** Ventilate area.

### 6.2. Environmental Precautions

Prevent entry to sewers and public waters.

# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

### 6.3. Methods and Material for Containment and Cleaning Up

**For Containment:** Place spilled material into a container. Avoid actions that cause the cement clinker dust or cement to become airborne. Avoid inhalation of clinker dust or cement and contact with skin. Wear appropriate protective equipment as described in Section 8.

**Methods for Cleaning Up:** Scrape wet cement and place in container. Allow material to dry or solidify before disposal. Do not wash cement clinker or cement down sewage and drainage systems or into bodies of water (e.g. streams).

### 6.4. Reference to Other Sections

See heading 8, Exposure Controls and Personal Protection. For further information refer to section 13.

## SECTION 7: HANDLING AND STORAGE

### 7.1. Precautions for Safe Handling

**Additional Hazards When Processed:** Cutting, crushing or grinding cement clinker, 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.

**Handling Temperature:** Unlimited

**Hygiene Measures:** Handle in accordance with good industrial hygiene and safety procedures. Wash hands and other exposed areas with mild soap and water before eating, drinking, or smoking and again when leaving work.

### 7.2. Conditions for Safe Storage, Including Any Incompatibilities

**Storage Conditions:** Store tightly closed in a dry, cool and well-ventilated place. Keep container closed when not in use.

### 7.3. Specific End Use(s)

Cement clinker is produced by heating to high temperature a mixture of substances such as limestone and shale. When cement clinker is ground with a specified amount of gypsum, it will produce Portland cement or when ground with specified amounts of gypsum and other pozzolanic materials it will produce blended cements.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

### 8.1. Control Parameters

For substances listed in section 3 that are not listed here, there are no established Exposure limits from the manufacturer, supplier, importer, or the appropriate advisory agency including: ACGIH (TLV), NIOSH (REL), OSHA (PEL), Canadian provincial governments, or the Mexican government.

| Cement, portland, chemicals (65997-15-1) |                                      |   |
|--|--------------------------------------|---|
| Mexico                                   | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup>  |
| Mexico                                   | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup>  |
| USA ACGIH                                | ACGIH TWA (mg/m <sup>3</sup> )       | 1 mg/m <sup>3</sup> (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)     |
| USA OSHA                                 | OSHA PEL (TWA) (mg/m <sup>3</sup> )  | 15 mg/m <sup>3</sup> (total dust)<br>5 mg/m <sup>3</sup> (respirable fraction)                                      |
| USA NIOSH                                | NIOSH REL (TWA) (mg/m <sup>3</sup> ) | 10 mg/m <sup>3</sup> (total dust)<br>5 mg/m <sup>3</sup> (respirable dust)  |
| USA IDLH                                 | US IDLH (mg/m <sup>3</sup> )         | 5000 mg/m <sup>3</sup>  |
| Alberta                                  | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup>  |
| British Columbia                         | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (total particulate matter containing no Asbestos and <1% Crystalline silica-total particulate) |
| Manitoba                                 | OEL TWA (mg/m <sup>3</sup> )         | 1 mg/m <sup>3</sup> (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)      |
| New Brunswick                            | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (particulate matter containing no Asbestos and <1% Crystalline silica)                         |
| Newfoundland & Labrador                  | OEL TWA (mg/m <sup>3</sup> )         | 1 mg/m <sup>3</sup> (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)      |
| Nova Scotia                              | OEL TWA (mg/m <sup>3</sup> )         | 1 mg/m <sup>3</sup> (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction)      |
| Nunavut                                  | OEL TWA (mg/m <sup>3</sup> )         | 5 mg/m <sup>3</sup> (respirable mass)   |
| Northwest Territories                    | OEL TWA (mg/m <sup>3</sup> )         | 5 mg/m <sup>3</sup> (respirable mass)   |
| Ontario                                  | OEL TWA (mg/m <sup>3</sup> )         | 1 mg/m <sup>3</sup> (containing no Asbestos and <1% Crystalline silica-respirable)                                  |

# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

|  |                                      |  |
|--|--------------------------------------|--|
| <b>Prince Edward Island</b>              | OEL TWA (mg/m <sup>3</sup> )         | 1 mg/m <sup>3</sup> (particulate matter containing no Asbestos and <1% Crystalline silica-respirable fraction) |
| <b>Québec</b>                            | VEMP (mg/m <sup>3</sup> )            | 10 mg/m <sup>3</sup> (containing no Asbestos and <1% Crystalline silica-total dust)                            |
| <b>Saskatchewan</b>                      | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup>   |
| <b>Saskatchewan</b>                      | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup>   |
| <b>Yukon</b>                             | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup>   |
| <b>Yukon</b>                             | OEL TWA (mg/m <sup>3</sup> )         | 30 mppcf   |
| <b>Limestone (1317-65-3)</b>             |                                      |  |
| <b>Mexico</b>                            | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup>   |
| <b>Mexico</b>                            | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup>   |
| <b>USA OSHA</b>                          | OSHA PEL (TWA) (mg/m <sup>3</sup> )  | 15 mg/m <sup>3</sup> (total dust)<br>5 mg/m <sup>3</sup> (respirable fraction)                                 |
| <b>USA NIOSH</b>                         | NIOSH REL (TWA) (mg/m <sup>3</sup> ) | 10 mg/m <sup>3</sup> (total dust)<br>5 mg/m <sup>3</sup> (respirable dust)                                     |
| <b>Alberta</b>                           | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup>   |
| <b>British Columbia</b>                  | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup> (total dust)  |
| <b>British Columbia</b>                  | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (total dust)  |
| <b>New Brunswick</b>                     | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (particulate matter containing no Asbestos and <1% Crystalline silica)                    |
| <b>Nunavut</b>                           | OEL TWA (mg/m <sup>3</sup> )         | 5 mg/m <sup>3</sup> (respirable mass)  |
| <b>Northwest Territories</b>             | OEL TWA (mg/m <sup>3</sup> )         | 5 mg/m <sup>3</sup> (respirable mass)  |
| <b>Québec</b>                            | VEMP (mg/m <sup>3</sup> )            | 10 mg/m <sup>3</sup> (Limestone, containing no Asbestos and <1% Crystalline silica-total dust)                 |
| <b>Saskatchewan</b>                      | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup>   |
| <b>Saskatchewan</b>                      | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup>   |
| <b>Yukon</b>                             | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup>   |
| <b>Yukon</b>                             | OEL TWA (mg/m <sup>3</sup> )         | 30 mppcf   |
| <b>Magnesium oxide (MgO) (1309-48-4)</b> |                                      |  |
| <b>Mexico</b>                            | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (fume)  |
| <b>USA ACGIH</b>                         | ACGIH TWA (mg/m <sup>3</sup> )       | 10 mg/m <sup>3</sup> (inhalable fraction)  |
| <b>USA OSHA</b>                          | OSHA PEL (TWA) (mg/m <sup>3</sup> )  | 15 mg/m <sup>3</sup> (fume, total particulate)   |
| <b>USA IDLH</b>                          | US IDLH (mg/m <sup>3</sup> )         | 750 mg/m <sup>3</sup> (fume)   |
| <b>Alberta</b>                           | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (fume)  |
| <b>British Columbia</b>                  | OEL STEL (mg/m <sup>3</sup> )        | 10 mg/m <sup>3</sup> (respirable dust and fume)  |
| <b>British Columbia</b>                  | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (fume, inhalable)   |
| <b>Manitoba</b>                          | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (inhalable fraction)  |
| <b>New Brunswick</b>                     | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (fume)  |
| <b>Newfoundland &amp; Labrador</b>       | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (inhalable fraction)  |
| <b>Nova Scotia</b>                       | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (inhalable fraction)  |
| <b>Nunavut</b>                           | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup> (fume)  |
| <b>Nunavut</b>                           | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (fume)  |
| <b>Northwest Territories</b>             | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup> (fume)  |
| <b>Northwest Territories</b>             | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (fume)  |
| <b>Ontario</b>                           | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (inhalable)   |
| <b>Prince Edward Island</b>              | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (inhalable fraction)  |
| <b>Québec</b>                            | VEMP (mg/m <sup>3</sup> )            | 10 mg/m <sup>3</sup> (fume)  |
| <b>Saskatchewan</b>                      | OEL STEL (mg/m <sup>3</sup> )        | 20 mg/m <sup>3</sup> (inhalable fraction)  |
| <b>Saskatchewan</b>                      | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (inhalable fraction)  |
| <b>Yukon</b>                             | OEL STEL (mg/m <sup>3</sup> )        | 10 mg/m <sup>3</sup> (fume)  |
| <b>Yukon</b>                             | OEL TWA (mg/m <sup>3</sup> )         | 10 mg/m <sup>3</sup> (fume)  |

# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

| Quartz (14808-60-7)     |                                      |   |
|-------------------------|--------------------------------------|---|
| Mexico                  | OEL TWA (mg/m <sup>3</sup> )         | 0.1 mg/m <sup>3</sup> (respirable fraction)                               |
| USA ACGIH               | ACGIH TWA (mg/m <sup>3</sup> )       | 0.025 mg/m <sup>3</sup> (respirable fraction)                             |
| USA OSHA                | OSHA PEL (STEL) (mg/m <sup>3</sup> ) | 250 mppcf/%SiO <sub>2</sub> +5, 10mg/m <sup>3</sup> /%SiO <sub>2</sub> +2 |
| USA NIOSH               | NIOSH REL (TWA) (mg/m <sup>3</sup> ) | 0.05 mg/m <sup>3</sup> (respirable dust)                                  |
| USA IDLH                | US IDLH (mg/m <sup>3</sup> )         | 50 mg/m <sup>3</sup> (respirable dust)                                    |
| Alberta                 | OEL TWA (mg/m <sup>3</sup> )         | 0.025 mg/m <sup>3</sup> (respirable particulate)                          |
| British Columbia        | OEL TWA (mg/m <sup>3</sup> )         | 0.025 mg/m <sup>3</sup> (respirable)                                      |
| Manitoba                | OEL TWA (mg/m <sup>3</sup> )         | 0.025 mg/m <sup>3</sup> (respirable fraction)                             |
| New Brunswick           | OEL TWA (mg/m <sup>3</sup> )         | 0.1 mg/m <sup>3</sup> (respirable fraction)                               |
| Newfoundland & Labrador | OEL TWA (mg/m <sup>3</sup> )         | 0.025 mg/m <sup>3</sup> (respirable fraction)                             |
| Nova Scotia             | OEL TWA (mg/m <sup>3</sup> )         | 0.025 mg/m <sup>3</sup> (respirable fraction)                             |
| Nunavut                 | OEL TWA (mg/m <sup>3</sup> )         | 0.1 mg/m <sup>3</sup> (respirable mass)                                   |
| Northwest Territories   | OEL TWA (mg/m <sup>3</sup> )         | 0.1 mg/m <sup>3</sup> (respirable mass)                                   |
| Ontario                 | OEL TWA (mg/m <sup>3</sup> )         | 0.10 mg/m <sup>3</sup> (designated substances regulation-respirable)      |
| Prince Edward Island    | OEL TWA (mg/m <sup>3</sup> )         | 0.025 mg/m <sup>3</sup> (respirable fraction)                             |
| Québec                  | VEMP (mg/m <sup>3</sup> )            | 0.1 mg/m <sup>3</sup> (respirable dust)                                   |
| Saskatchewan            | OEL TWA (mg/m <sup>3</sup> )         | 0.05 mg/m <sup>3</sup> (respirable fraction)                              |
| Yukon                   | OEL TWA (mg/m <sup>3</sup> )         | 300 particle/mL   |

### 8.2. Exposure Controls

**Appropriate Engineering Controls:** Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Use local exhaust or general dilution ventilation or other suppression methods to maintain dust levels below exposure limits. Power equipment should be equipped with proper dust collection devices.

**Personal Protective Equipment:** Dust formation: dust mask. In case of dust production: protective goggles. Gloves.



**Materials for Protective Clothing:** Chemically resistant materials and fabrics.

**Hand Protection:** Protective Gloves.

**Eye Protection:** Wear ANSI approved glasses or safety goggles when handling dust or wet cement to prevent contact with eyes. Wearing contact lenses when using cement, under dusty conditions, is not recommended.

**Skin and Body Protection:** Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact.

**Respiratory Protection:** Wear an approved respirator that is properly fitted and is in good condition when exposed to dust above exposure limits.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

### 9.1. Information on Basic Physical and Chemical Properties

|                           |                              |
|---------------------------|------------------------------|
| Physical State            | : Solid (Nodular, rock-like) |
| Appearance                | : Gray                       |
| Odor                      | : None                       |
| Odor Threshold            | : Not available              |
| pH                        | : 12 – 13 (in water)         |
| Evaporation Rate          | : Not available              |
| Melting Point             | : Not available              |
| Freezing Point            | : Not available              |
| Boiling Point             | : > 1000 °C (> 1832 °F)      |
| Flash Point               | : Not available              |
| Auto-ignition Temperature | : Not available              |
| Decomposition Temperature | : Not available              |
| Flammability (solid, gas) | : Not available              |

# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

|  |   |
|--|---|
| <b>Lower Flammable Limit</b>                             | : Not available   |
| <b>Upper Flammable Limit</b>                             | : Not available   |
| <b>Vapor Pressure</b>                                    | : Not available   |
| <b>Relative Vapor Density at 20 °C</b>                   | : Not available   |
| <b>Relative Density</b>                                  | : Not available   |
| <b>Specific Gravity</b>                                  | : 3.15  |
| <b>Solubility</b>  | : Slightly (0.1 – 1.0% in water)  |
| <b>Partition Coefficient: N-Octanol/Water</b>            | : Not available   |
| <b>Viscosity</b>   | : Not available   |
| <b>Explosion Data – Sensitivity to Mechanical Impact</b> | : Not expected to present an explosion hazard due to mechanical impact. |
| <b>Explosion Data – Sensitivity to Static Discharge</b>  | : Not expected to present an explosion hazard due to static discharge.  |

### SECTION 10: STABILITY AND REACTIVITY

- 10.1. Reactivity:** Wet cement clinker and cement is caustic.
- 10.2. Chemical Stability:** Stable. Keep dry until use. Avoid contact with incompatible materials.
- 10.3. Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4. Conditions to Avoid:** Extremely high or low temperatures. Incompatible materials.
- 10.5. Incompatible Materials:** Wet cement and cement clinker 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.
- 10.6. Hazardous Decomposition Products:** None known.

### SECTION 11: TOXICOLOGICAL INFORMATION

#### 11.1. Information on Toxicological Effects - Product

**Acute Toxicity:** Not classified

**LD50 and LC50 Data:** Not available

**Skin Corrosion/Irritation:** Causes skin irritation.

**pH:** 12 - 13

**Serious Eye Damage/Irritation:** Causes serious eye damage.

**pH:** 12 - 13

**Respiratory or Skin Sensitization:** May cause an allergic skin reaction.

**Germ Cell Mutagenicity:** Not classified

**Teratogenicity:** Not available

**Carcinogenicity:** May cause cancer.

**Specific Target Organ Toxicity (Repeated Exposure):** Not classified

**Reproductive Toxicity:** Not classified

**Specific Target Organ Toxicity (Single Exposure):** May cause respiratory irritation.

**Aspiration Hazard:** Not classified

**Symptoms/Injuries After Inhalation:** 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. 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 clinker and cement are not listed as a carcinogen by IARC or NTP; however, clinker dust and 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.

**Symptoms/Injuries After Skin Contact:** Cement clinker and cement may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Burns: Exposure of sufficient duration to wet cement, or to clinker dust or dry cement on moist areas of the body, can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort. Dermatitis: Cement and clinker dust are

# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

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 clinker dust and 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 clinker dust or cement.

**Symptoms/Injuries After Eye Contact:** Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of clinker dust, dry cement powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye.

**Symptoms/Injuries After Ingestion:** Ingestion of the dusts of this product may cause irritation of the mucus membranes.

**Chronic Symptoms:** If dust is generated, repeated exposure through inhalation may cause cancer or lung disease.

### 11.2. Information on Toxicological Effects - Ingredient(s)

LD50 and LC50 Data:

| Quartz (14808-60-7)                      |                          |
|--|--------------------------|
| LD50 Oral Rat                            | > 5000 mg/kg             |
| LD50 Dermal Rat                          | > 5000 mg/kg             |
| Quartz (14808-60-7)                      |                          |
| IARC Group                               | 1                        |
| National Toxicology Program (NTP) Status | Known Human Carcinogens. |

## SECTION 12: ECOLOGICAL INFORMATION

- 12.1. **Toxicity** No additional information available
- 12.2. **Persistence and Degradability** Not available
- 12.3. **Bioaccumulative Potential** Not available
- 12.4. **Mobility in Soil** Not available
- 12.5. **Other Adverse Effects** Not available

## SECTION 13: DISPOSAL CONSIDERATIONS

### 13.1. Waste treatment methods

**Waste Disposal Recommendations:** Dispose of waste material in accordance with all local, regional, state, national, provincial, territorial and international regulations.

**Additional Information:** If discarded in its purchased form, this product would not be a hazardous waste either by listing or characteristic.

## SECTION 14: TRANSPORT INFORMATION

- 14.1. **In Accordance with DOT** Not regulated for transport
- 14.2. **In Accordance with IMDG** Not regulated for transport
- 14.3. **In Accordance with IATA** Not regulated for transport
- 14.4. **In Accordance with TDG** Not regulated for transport

## SECTION 15: REGULATORY INFORMATION

### 15.1. US Federal Regulations

| Portland Cement Clinker   |  |
|---|--|
| SARA Section 313 - Emission Reporting                                     | This product may contain constituents listed under SARA (Title III) Section 313, but not in amounts requiring supplier notification under 40 CFR Part 372 Subpart C. |
| Cement, portland, chemicals (65997-15-1)                                  |  |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |  |
| Limestone (1317-65-3)   |  |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |  |
| Magnesium oxide (MgO) (1309-48-4)   |  |
| Listed on the United States TSCA (Toxic Substances Control Act) inventory |  |



# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

### Quartz (14808-60-7)

Listed on the United States TSCA (Toxic Substances Control Act) inventory

### 15.2. US State Regulations

#### Quartz (14808-60-7)

U.S. - California - Proposition 65 - Carcinogens List

WARNING: This product contains chemicals known to the State of California to cause cancer.

#### Cement, portland, chemicals (65997-15-1)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

#### Limestone (1317-65-3)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

#### Magnesium oxide (MgO) (1309-48-4)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

U.S. - Pennsylvania - RTK (Right to Know) List

#### Quartz (14808-60-7)

U.S. - Massachusetts - Right To Know List

U.S. - New Jersey - Right to Know Hazardous Substance List

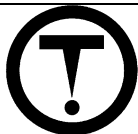
U.S. - Pennsylvania - RTK (Right to Know) List

### 15.3. Canadian Regulations

#### Portland Cement Clinker

WHMIS Classification

Class D Division 2 Subdivision A - Very toxic material causing other toxic effects  
Class D Division 2 Subdivision B - Toxic material causing other toxic effects  
Class E - Corrosive Material



#### Cement, portland, chemicals (65997-15-1)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

WHMIS Classification

Class E - Corrosive Material  
Class D Division 2 Subdivision B - Toxic material causing other toxic effects

#### Limestone (1317-65-3)

Listed on the Canadian NDSL (Non-Domestic Substances List)

WHMIS Classification

Uncontrolled product according to WHMIS classification criteria

#### Magnesium oxide (MgO) (1309-48-4)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification

Uncontrolled product according to WHMIS classification criteria

#### Quartz (14808-60-7)

Listed on the Canadian DSL (Domestic Substances List)

Listed on the Canadian IDL (Ingredient Disclosure List)

IDL Concentration 1 %

WHMIS Classification

Class D Division 2 Subdivision A - Very toxic material causing other toxic effects

# Portland Cement Clinker

## Safety Data Sheet

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules And Regulations

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations (CPR) and the SDS contains all of the information required by CPR.

### SECTION 16: OTHER INFORMATION, INCLUDING DATE OF PREPARATION OR LAST REVISION

**Revision Date** : 04/16/2015

**Other Information** : This document has been prepared in accordance with the SDS requirements of the OSHA Hazard Communication Standard 29 CFR 1910.1200.

#### GHS Full Text Phrases:

|               |  |
|---------------|--|
| Carc. 1A      | Carcinogenicity Category 1A                                    |
| Eye Dam. 1    | Serious eye damage/eye irritation Category 1                   |
| Skin Irrit. 2 | Skin corrosion/irritation Category 2                           |
| Skin Sens. 1  | Skin sensitization Category 1                                  |
| STOT RE 1     | Specific target organ toxicity (repeated exposure) Category 1  |
| STOT SE 3     | Specific target organ toxicity (single exposure) Category 3    |
| H315          | Causes skin irritation   |
| H317          | May cause an allergic skin reaction                            |
| H318          | Causes serious eye damage                                      |
| H335          | May cause respiratory irritation                               |
| H350          | May cause cancer   |
| H372          | Causes damage to organs through prolonged or repeated exposure |

#### Party Responsible for the Preparation of This Document

Lafarge North America Inc.  
+1 773-372-1000 (9am to 5pm CST)

An electronic version of this SDS is available at: [www.lafarge-na.com](http://www.lafarge-na.com) under the Sustainability and Products sections. Please direct any inquiries regarding the content of this SDS to [SDSinfo@Lafarge.com](mailto:SDSinfo@Lafarge.com).

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.**

North America GHS US 2012 & WHMIS 2