

# Safety Data Sheet    Portland Cement

## Section 1. Product Identification

<b>GHS product identifier:</b>	Portland Cement
<b>Product Name:</b>	Portland Cement Type I, II, I/II, III, V, I/II/V, Blended Hydraulic Cement Type IP, IL, IS, IT, Hydraulic Cement Type GU, MS, HE, MH, LH, HS, CSA GU, MS, HE, HS, CSA GUL, MSL, HEL, HSL, Masonry Cement Type N, S, M, Soil Cement, Soil Stabilization Cement
<b>Synonyms:</b>	Portland Cement, Blended Hydraulic Cement, Hydraulic Cement, Oil Well Cement, Portland Limestone Cement, PLC, Portland Pozzolan Cement, Portland Slag Cement, Portland Blast-Furnace Slag Cement, Ternary Blended Cement, Type I, II, I/II, III, V, I/II/V, Type IP, IL, IS, IT, Type GU, MS, HE, MH, LH, HS, CSA GU, MS, HE, HS, CSA GUL, MSL, HEL, HSL, OWG, Oil Well Class G, Oil Well Class H, Oil Well Class C, Soil Cement, Soil Stabilization Cement
<b>Chemical name:</b>	Calcium compounds, calcium silicate compounds, and other calcium compounds containing iron and aluminum make up the majority of this product.
<b>Other means of identification:</b>	Cement, hydraulic cement, Portland cement silicate
<b>Intended Use of Product:</b>	Portland cement is the binder used in concrete and mortars for construction purposes. Portland cement is a basic ingredient of concrete.
<b>Responsible Party:</b>	GCC 600 South Cherry Street, Suite 1000 Glendale, CO 80246 (303) 369-5900 www.gcc.com
<b>Emergency telephone No:</b>	For Hazardous Materials [or Dangerous Goods] Incident Spill, Leak, Fire, Exposure, or Accident Call CHEMTREC Day or Night Within USA and Canada: 1-800-424-9300 Outside USA and Canada: +1 703-527-3887 (collect calls accepted)

## Section 2. Hazards Identification

### Section 2, Hazard(s) identification

Overexposure to Portland cement can cause serious, potentially irreversible skin or eye damage in the form of chemical (caustic) burns, including third degree burns. The same serious injury can occur if wet or moist skin has prolonged contact exposure to dry Portland cement.

Portland cement is not classifiable as human carcinogen.

<b>OSHA/HCS status:</b>	This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200.)		
<b>Classification of the substance or mixture:</b>	SKIN CORROSION/IRRITATION	Category 1C	H314
	SERIOUS EYE DAMAGE/ EYE IRRITATION	Category 1	H318
	SKIN SENSITIZATION	Category 1B	H317
	SPECIFIC TARGET ORGNA TOXICITY [Respiratory tract infection]	Category 3	H335

**GHS label elements****Hazard pictograms:****Signal word:**

Danger

**Hazard statements:**

H314 - Causes severe skin burns and eye damage.

H317 - May cause an allergic skin reaction.

H335 - May cause respiratory irritation.

H318 - Causes serious eye damage

**Precautionary Statements****Prevention:**

Wear protective gloves. Wear eye or face protection. Use only outdoors or in a well-ventilated area. Avoid breathing dust. Wash hands thoroughly after handling. Contaminated work clothing should not be allowed out of the workplace. Causes eye and skin burns. See Section 4 for additional details. May present risk of engulfment. See Section 7 for additional details. Overexposure to wet cement can cause severe skin damage in the form of chemical burns, including third degree burns. The same severe injury can occur if wet or moist skin is exposed to dry Portland cement. Clothing wet with moisture from cement can transmit the caustic effects to the skin, causing chemical burns. Portland cement causes skin burns with little warning; discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure.

**MEDICAL CONDITIONS WHICH MAY BE AGGRAVATED BY EXPOSURE:** Contact with wet cement may aggravate existing skin conditions. Sensitivity to hexavalent chromium can be aggravated by exposure.

**Response:**

IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, fibrosis or scar tissue formations in the lungs. Call a POISON CENTER or physician if you feel unwell. IF ON SKIN: Wash with plenty of pH neutral soap and water. Take off contaminated clothing. Wash contaminated clothing before reuse. If skin irritation or rash occurs: get medical attention. Portland cement may contain trace amounts of hexavalent chromium. Hexavalent chromium is associated with allergic skin reactions which may appear as contact dermatitis and skin ulcerations. Persons already sensitized may react to their first exposure to cement. Other individuals may develop allergic dermatitis after repeated exposure to cement. The symptoms of allergic reactions may include reddening of the skin, rash, and irritation. Symptoms of chronic exposure to wet cement may include reddening, irritation, and eczematous rashes. Drying, thickening, and cracking of the skin and nails may also occur. IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Exposure to dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amount of dry powder or splashes of wet Portland cement may cause effects ranging from moderate eye irritation to chemical burns or blindness. Immediately call a POISON CENTER or physician. IF INGESTED: Irritating to mouth, throat and stomach. Ingestion of large quantities may cause severe irritation and chemical burns of the mouth, throat, stomach and digestive tract. Do not ingest Portland cement. Get immediate medical attention.

**Storage:**

Keep container tightly closed in a dry and well-ventilated area.

**Disposal:**

Dispose of contents and container in accordance with all local, regional national and international regulations.

**Hazards not otherwise classified:**

Not applicable.

**Section 3. Composition/information on ingredients****Substance/mixture:**

Mixture

**Chemical name:**

Portland cement, anhydrite, fluorite, gypsum

**Other means of identification:**

## CAS number/other identifiers

**CAS number:** 65997-15-1 (Portland Cement)

Component / Ingredient	CAS #	Percent Present (Range)
Portland Cement	65997-15-1	100
Tricalcium Silicate	12168-85-3	20 - 70
Dicalcium Silicate	10034-77-2	10 - 60
Tetracalcium Aluminoferrite	12068-35-8	5 - 15
Gypsum (Calcium Sulfate)	13397-24-5	2 - 10
Tri-Calcium Aluminate	12042-78-3	1 - 15
Limestone (Calcium Carbonate)	1317-65-3	0 - 20
Fly Ash	329065-12-5	0 - 40
Natural Pozzolan	NA	0 - 40
Slag	65996-69-2	0 - 70
Gypsum (Calcium Sulfate Dihydrate)	13397-24-5	0 - 15
Calcium Sulfate Hemihydrate (Bassanite)	10034-76-1	0 - 15
Anhydrite	14798-04-0	0 - 15
Magnesium Oxide	1309-48-4	<1 - 4
Nuisance Dust (Particles not otherwise regulated)	NA	<1 - 5
Crystalline Silica (Quartz)	14808-60-7	0 - < 1

Occupational exposure limits, if available, are listed in Section 8.

### Other Components:

Portland Cements are manufactured from a combination of mined materials and fuels. Chemical analysis may show trace amounts of naturally occurring but potentially harmful compounds such as crystalline silica, heavy metals including cadmium, chromium, nickel and lead. Organic compounds from grinding aids such as amine acetate salts and glycols.

## Section 4. First aid measures

### Description of necessary first aid measures

**Eye contact:** Get medical attention immediately. Call a poison center or physician. Immediately flush eyes with plenty of water, occasionally lifting the upper and lower eyelids. Check for and remove any contact lenses. Continue to rinse for at least 20 minutes. Chemical burns must be treated promptly by a physician.

**Inhalation:** Seek medical help if coughing or other symptoms persist. Inhalation of large amounts of Portland cement requires immediate medical attention. Call a poison center or physician. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If the individual is not breathing, if breathing is irregular or if respiratory arrest occurs, provide artificial respiration or oxygen by trained personnel. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

**Skin Contact:** Get medical attention immediately. Heavy exposure to Portland cement dust, wet concrete or associated water requires prompt attention. Quickly remove contaminated clothing, shoes, and leather goods such as watchbands and belts. Quickly and gently blot or brush away excess Portland cement. Immediately wash thoroughly with lukewarm, gently flowing water and non-abrasive pH neutral soap. Seek medical attention for rashes, burns, irritation, dermatitis and prolonged unprotected exposures to wet cement, cement mixtures or liquids from wet cement. Burns should be treated as caustic burns. Portland cement causes skin burns

with little warning. Discomfort or pain cannot be relied upon to alert a person to a serious injury. You may not feel pain or the severity of the burn until hours after the exposure. Chemical burns must be treated promptly by a physician. In the event of any complaints or symptoms, avoid further exposure.

**Ingestion:** Get medical attention immediately. Call a poison center or physician. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING unless directed to do so by medical personnel. Remove victim to fresh air and keep at rest in a position comfortable for breathing. If material has been swallowed and the exposed person is conscious, give small quantities of water to drink. Have victim drink 60 to 240 mL (2 to 8 oz.) of water. Stop giving water if the exposed person feels sick as vomiting may be dangerous. If vomiting occurs, the head should be kept low so that vomit does not enter the lungs. Chemical burns must be treated promptly by a physician. Never give anything by mouth to an unconscious person. If unconscious, place in recovery position and get medical attention immediately. Maintain an open airway.

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### Most important symptoms/effects, acute and delayed potential acute health effects

**Eye contact:** Causes serious eye damage.  
**Inhalation:** May cause respiratory irritation.  
**Skin contact:** Causes severe burns. May cause an allergic skin reaction.  
**Ingestion:** May cause burns to mouth, throat and stomach.

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### Over-exposure signs/symptoms

**Eye contact:** Adverse symptoms may include the following: pain, watering and redness  
**Inhalation:** Adverse symptoms may include the following: respiratory tract irritation and coughing  
**Skin contact:** Adverse symptoms may include the following: pain or irritation, redness and blistering may occur, skin burns, ulceration and necrosis may occur  
**Ingestion:** Adverse symptoms may include the following: stomach pains

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### Indication of immediate medical attention and special treatment needed, if necessary

**Notes to physician:** Treat symptomatically. Contact poison treatment specialist immediate if large quantities have been ingested or inhaled.  
**Specific treatments:** Not applicable.  
**Protection of first-aiders:** No action shall be taken involving any personal risk without suitable training. It may be dangerous to the person providing aid to give mouth-to-mouth resuscitation. Wash contaminated clothing thoroughly with water before removing it, or wear gloves.

See toxicological information (Section 11)

## Section 5. Fire-fighting measures

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### Extinguishing media

**Suitable extinguishing media:** Use an extinguishing agent suitable for the surrounding fire.  
**Unsuitable extinguishing media:** Do not use water jet or heavy stream of water-based extinguishers. This may spread fire.  
**Specific hazards arising from the chemical:** No specific fire or explosion hazard.  
**Hazardous thermal decomposition products:** Decomposition products may include the following materials: carbon dioxide, carbon monoxide, sulfur oxides and metal oxide/oxides.  
**Special protective actions for fire-fighters:** Move containers from fire area if this can be done without risk. Use water spray to keep fire-exposed containers cool.  
**Special protective equipment** Fire-fighters should wear appropriate protective equipment and self-contained breathing apparatus (SCBA)

**for fire-fighters:** with a full face-piece operated in positive pressure mode.

## Section 6. Accidental release measures

### Personal precautions, protective equipment and emergency procedures

**For non-emergency personnel:** No action shall be taken involving any personal risk or without suitable training. Evacuate surrounding areas. Keep unnecessary and unprotected personnel from entering. Do not touch or walk through spilled material. Do not breathe dust. Provide adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Put on appropriate personal protective equipment.

**For emergency responders:** For personal protective clothing requirements, please see Section 8.

**Environmental precautions:** Avoid dispersal of spilled material and runoff and contact with soil, waterways, drains and sewers. Avoid creating dust. Inform the relevant authorities if the product has entered the environment, including waterways, soil or air. Materials can enter waterways through drainage systems.

### Methods and materials for containment and cleaning up

**Small spill:** Move containers from spill area. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place in a closed, labeled waste container. Place spilled material in a designated, labeled waste container. Dispose of waste material by using a licensed waste disposal contractor.

**Large spill:** Move containers from spill area. Approach release from upwind. Prevent entry into sewers, water courses, basements or confined areas. Avoid dust generation. Do not dry sweep. Vacuum dust with equipment fitted with a HEPA filter and place dust in a closed, labeled waste container. Avoid creating dusty conditions and prevent wind dispersal. Large spills to waterways may be hazardous due to alkalinity of the product. Dispose of waste material using a licensed waste disposal contractor. Note: see Section 1 for emergency contact information and Section 13 for waste disposal.

## Section 7. Handling and storage

### Precautions for safe handling

**Protective measures:** Put on appropriate personal protective equipment (see Section 8). Persons with a history of skin sensitization problems should not be employed in any process in which this product is used. Avoid exposure by obtaining and following special instructions before use. Do not handle until all safety precautions have been read and understood. Do not get in eyes or on skin or clothing. Do not breathe dust. Do not ingest. Use only with adequate ventilation. Wear appropriate respirator when ventilation is inadequate. Keep in the original container or an approved alternative made from a compatible material and keep the container tightly closed when not in use. Empty containers retain product residue and can be hazardous. Do not reuse container.

**Advice on general occupational hygiene:** Eating, drinking and smoking should be prohibited in areas where this material is handled, stored and processed. Workers should wash hands and face before eating, drinking and smoking. Remove contaminated clothing and protective equipment before entering eating areas. See also Section 8 for additional information on hygiene measures.

**Conditions for safe storage, including any incompatibilities:** A key to using the product safely requires the user to recognize that Portland cement reacts chemically with water to produce calcium hydroxide which can cause severe chemical burns. Every attempt should be made to avoid skin and eye contact with cement. Do not get Portland cement inside boots, shoes or gloves. Do not allow wet, saturated clothing to remain against the skin. Promptly remove clothing and shoes that are dusty or wet with cement mixtures. Launder/clean clothing and shoes before reuse. Do not enter a confined space that stores or contains Portland cement unless appropriate procedures and protection are available. Portland cement can build up or adhere to the walls of a confined space and then release or fall suddenly (engulfment).

## Section 8. Exposure controls/personal protection

Component	OSHA PEL	ACGIH TLV	NIOSH REL
Portland cement	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	1 mg/m <sup>3</sup> (R)	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Tricalcium Silicate	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	Not listed	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Dicalcium Silicate	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	Not listed	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Tetracalcium Aluminoferrite	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	Not listed	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Gypsum (Calcium Sulfate)	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	10 mg/m <sup>3</sup> (T)	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Tricalcium Aluminate	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	Not listed	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Magnesium Oxide	15 mg/m <sup>3</sup> (T)	10 mg/m <sup>3</sup>	NA
Limestone (Calcium Carbonate)	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	10 mg/m <sup>3</sup>	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Crystalline Silica	0.05 mg/m <sup>3</sup> (R)	0.025 mg/m <sup>3</sup> (R)	0.05 mg/m <sup>3</sup> (R)
Fly Ash	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	10 mg/m <sup>3</sup> (T); 3 mg/m <sup>3</sup> (R)	10 mg/m <sup>3</sup> (T)
Natural Pozzolan	Not listed	Not listed	Not listed
Slag	Not listed	Not listed	Not listed
Gypsum (Calcium Sulfate Dihydrate)	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	5 mg/m <sup>3</sup> (T)	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Plaster of Paris (Calcium Sulfate Hemihydrate)	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	Not listed	10 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)
Anhydrite	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	5 mg/m <sup>3</sup> (T)	10 mg/m <sup>3</sup> (T)
Nuisance Dust	15 mg/m <sup>3</sup> (T); 5 mg/m <sup>3</sup> (R)	10 mg/m <sup>3</sup> (T)	NA

T = Total Respirable, R = Respirable Fraction

**Appropriate engineering controls:** Use only with adequate ventilation. If user operations generate dust, use process enclosures, local exhaust ventilation or other engineering controls to keep worker exposure to airborne contaminants below any recommended or statutory limits.

**Environmental exposure controls:** Emissions from ventilation or work process equipment should be checked to ensure they comply with the requirements of environmental protection legislation.

### Individual protection measures

**Hygiene measures:** Clean water should always be readily available for skin and (emergency) eye washing. Periodically wash areas contacted by Portland cement with a pH neutral soap and clean, uncontaminated water. If clothing becomes saturated with Portland cement, garments should be removed and replaced with clean, dry clothing.

**Eye/face protection:** To prevent eye contact, wear safety glasses with side shields, safety goggles or face shields when handling dust or wet cement. Wearing contact lenses when working with cement is not recommended.

### Skin protection

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

**Body protection:** Use impervious, waterproof, abrasion and alkali-resistant boots and protective long-sleeved and long-legged clothing to protect the skin from contact with wet Portland cement. To reduce foot and ankle exposure, wear impervious boots that are high enough to prevent Portland cement from getting inside them. Do not get Portland cement inside boots, shoes, or gloves. Remove clothing and protective equipment that becomes saturated with cement and immediately wash exposed areas of the body.

**Other skin protection:** Appropriate footwear and any additional skin protection measures should be selected based on the task being performed and the risks involved. Footwear and other gear to protect the skin should be approved by a specialist before handling this product.

**Respiratory protection:** If dust concentrations in the air exceed occupational guidelines or irritation is experienced, an approved respirator should be worn. The use of a properly fitted, particulate filtering NIOSH approved respirator is required if a risk assessment indicates this is necessary. Respirator selection must be based on known or

anticipated exposure levels, the hazards of the product, and assigned protection factor of the selected respirator.

## Section 9. Physical and chemical properties

<b>Physical State</b>	Solid, powder	<b>Lower and upper explosive limits</b>	Na
<b>Color</b>	Gray/off white powder	<b>Vapor pressure</b>	Na
<b>Odor</b>	none	<b>Vapor density</b>	Na
<b>Odor Threshold</b>	na	<b>Relative density</b>	2.3 – 3.2
<b>pH</b>	>11 (in water)	<b>Solubility</b>	Slightly soluble in water
<b>Melting Point</b>	na	<b>Solubility in water</b>	0.1 to 1 %
<b>Boiling Point</b>	>1000°C (>1832°F)	<b>Partition coefficient: n-octanol/water</b>	Na
<b>Flash Point</b>	Nonflammable; non combustible	<b>Auto-ignition temperature</b>	Na
<b>Burning time</b>	na	<b>Decomposition temperature</b>	Na
<b>Burning Rate</b>	na	<b>SADT</b>	Na
<b>Evaporation Rate</b>	na	<b>Viscosity</b>	Na
<b>Flammability (solid, gas)</b>	na		

Na = not applicable

## Section 10. Stability and reactivity

<b>Reactivity:</b>	Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.
<b>Chemical stability:</b>	The product is stable.
<b>Possibility of hazardous reactions:</b>	Under normal conditions of storage and use, hazardous reactions will not occur.
<b>Conditions to avoid:</b>	In contact with water, will result in hydration to produce caustic calcium hydroxide
<b>Incompatible materials:</b>	Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Portland cement is highly alkaline and will react with acids to produce a violent, heat-generating reaction. Toxic gases or vapors may be given off depending on the acid involved. Reacts with acids, aluminum metals and ammonium salts. Aluminum powder and other alkali and alkaline earth elements will react in wet mortar or concrete, liberating hydrogen gas. Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silicates dissolve readily in hydrofluoric acid producing a corrosive gas — silicon tetrafluoride.
<b>Hazardous decomposition products:</b>	Under normal conditions of storage and use, hazardous decomposition products should not be produced.

## Section 11. Toxicological information

### Information on toxicological effects

<b>Acute toxicity:</b>	Portland Cement LD50/LC50 = Not available
<b>Irritation/Corrosion:</b>	<b>Skin:</b> May cause skin irritation. May cause serious burns in the presence of moisture. <b>Eyes:</b> Causes serious eye damage. May cause burns in the presence of moisture. <b>Respiratory:</b> May cause respiratory tract irritation.
<b>Sensitization:</b>	May cause sensitization due to the potential presence of trace amounts of hexavalent chromium.
<b>Mutagenicity:</b>	There are no data available.
<b>Carcinogenicity:</b>	There are no data available.

Classification

Product/ingredient name	OSHA	IARC	ACGIH	NTP
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Cement, Portland, chemicals	-	-	A4	-
Quartz	-	-	A2	Known to be a human carcinogen

**Reproductive toxicity:** There are no data available.

**Teratogenicity:** There are no data available.

#### Specific target organ toxicity (single exposure)

Name	Category	Route of Exposure	Target Organs
Calcium oxide	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation
Cement, Portland, chemicals	Category 3	Inhalation and skin contact	Respiratory tract irritation, skin irritation

#### Specific target organ toxicity (repeated exposure)

Name	Category	Route of Exposure	Target Organs
Quartz	Category 1	Inhalation	Respiratory tract and kidneys

**Aspiration hazard:** There are not data available.

### Information on likely routes of exposure

Dermal contact. Eye contact. Inhalation. Ingestion.

**Potential acute health effects:**

**Eye contact:** Causes serious eye damage.  
**Inhalation:** May cause respiratory irritation.  
**Skin contact:** Causes severe burns. May cause an allergic skin reaction.  
**Ingestion:** May cause burns to mouth, throat and stomach.

**Symptoms related to the physical, chemical and toxicological characteristics:**

**Eye contact:** Adverse symptoms may include the following: pain, watering, redness  
**Inhalation:** Adverse symptoms may include the following: respiratory tract irritation, coughing  
**Skin contact:** Adverse symptoms may include the following: pain or irritation, redness, blistering may occur, skin burns, ulcerations and necrosis may occur  
**Ingestion:** Adverse symptoms may include the following: stomach pains

**Delayed and immediate effects and also chronic effects from short and long term exposure:**

**Short term exposure**  
Potential immediate effects: No known significant effects or critical hazards.  
Potential delayed effects: No known significant effects or critical hazards.  
**Long term exposure**  
Potential immediate effects: No known significant effects or critical hazards.  
Potential delayed effects: No known significant effects or critical hazards.

**Potential chronic health effects:**

**General:** Repeated or prolonged inhalation of dust may lead to chronic respiratory irritation. If sensitized to hexavalent chromium, a severe allergic dermal reaction may occur when subsequently exposed to very low levels.

**Carcinogenicity:** Portland cement is not classifiable as a human carcinogen. Crystalline silica is considered a hazard by inhalation. IARC has classified crystalline silica as a Group 1 substance, carcinogenic to humans. This classification is based on the findings of laboratory animal studies (inhalation and implantation) and epidemiology studies that were considered sufficient for carcinogenicity. Excessive exposure to crystalline silica can cause silicosis, a non-cancerous lung disease.

**Mutagenicity:** No known significant effects or critical hazards.  
**Teratogenicity:** No known significant effects or critical hazards.  
**Developmental effects:** No known significant effects or critical hazards.  
**Fertility effects:** No known significant effects or critical hazards.

**Numerical measures of toxicity:** Acute toxicity estimates: There are no data available.

## Section 12. Ecological information

### Toxicity

Product/ingredient name	Result	Species	Exposure
Calcium oxide	Chronic NOEC 100 mg/L	Fish-Oreochromis niloticus-Juvenile	46 Days



	Fresh water	(Fledging, Hatchling, Weanling) no bioaccumulation	
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<b>Persistence and degradability:</b>	There are no data available.
<b>Bio accumulative potential:</b>	There are no data available.
<b>Mobility in soil:</b>	Soil/water partition coefficient (Koc): Not available.
<b>Other adverse effects:</b>	No known significant effects or critical hazards, however, avoid release to the environment. High pH (alkalinity) of product may be harmful to aquatic life.

### Section 13. Disposal considerations

<b>Disposal methods:</b>	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.
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### Section 14. Transport information

	DOT Classification	IMDG	IATA
UN number	Not regulated.	Not regulated.	Not regulated.
UN proper shipping name	-	-	-
Transport hazard class(es)	-	-	-
Packing group	-	-	-
Environmental hazards	None.	None.	None.
Additional information	-	-	-

<b>Special precautions for user:</b>	Transport within user's premises: always transport in closed containers that are upright and secure. Ensure that persons transporting the product know what to do in the event of an accident or spillage.
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<b>Transport in bulk according to Annex II of MARPOL 73/78 and the IBC code:</b>	Not available.
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### Section 15. Regulatory information

<b>U.S. Federal regulations:</b>	<b>TSCA 6 final risk management:</b> Chromium, ion (Cr6+) <b>United States inventory (TSCA 8b):</b> Portland cements are considered to be statutory mixtures under TSCA. CAS 65997-15-1 is included on the TSCA inventory. <b>Clean Water Act (CWA) 307:</b> Chromium, ion (Cr6+) <b>CERCLA:</b> This product is not listed as a CERCLA substance.
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**Clean Air Act Section 112 (b): Hazardous Air Pollutants (HAPs)** — Not listed

**Clean Air Act Section 602: Class I Substances** — Not listed

**Clean Air Act Section 602: Class II Substances** — Not listed

**DEA List I Chemicals: (Precursor Chemicals)** — Not listed

**DEA List II Chemicals: (Essential Chemicals)** — Not listed

#### SARA 311/312

<b>Classification:</b>	Immediate (acute) health hazard Delayed (chronic) health hazard
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**Composition/information on ingredients**

Name	%	Fire Hazard	Sudden release of pressure	Reactive	Immediate (acute) health hazard	Delayed (chronic) health hazard
Calcium Oxide	A-B	No.	No.	No.	Yes.	No.
Quartz	< 0.2	No.	No.	No.	No.	Yes.
Chromium, ion (Cr6+)	< 0.1	No.	No.	No.	Yes.	Yes.
Nickel Compounds	< 0.1	No.	No.	No.	Yes.	Yes.
Lead (Organic & Inorganic)	< 0.1	No.	No.	No.	No.	Yes.

**SARA 313**

	Product name	CAS number	%
Form R-Reporting requirements	Chromium, ion (Cr6+)	8540-29-9	< 0.1
	Lead (Organic or Inorganic)	-	< 0.1
	Nickel Compounds	-	< 0.1
Supplier notification	Alternatively, if any of the compounds are not present, state: This product does not contain any constituents listed under SARA Title III Section 313.		

**State regulations****Massachusetts:**

The following components are listed: cement, Portland, chemicals, limestone

**New York:**

None of the components are listed.

**New Jersey:**

The following components are listed: cement, Portland, chemicals, gypsum, limestone

**Pennsylvania:**

The following components are listed: cement, Portland, chemicals, gypsum, limestone

**California Prop. 65**

WARNING: This product contains crystalline silica and chemicals (trace metals) known to the State of California to cause cancer, birth defects or other reproductive harm. California law requires the above warning in the absence of definitive testing to prove the defined risks do not exist.

Ingredient name	Cancer	Reproductive	No significant risk level	Maximum acceptable dosage level
Quartz	Yes.	No.	No.	No.
Chromium, ion (Cr6+)	Yes.	Yes.	0.001µg/day (inhalation)	8.2 micrograms/day (ingestion)
Nickel Compounds	No.	No.	No.	No.
Lead	Yes.	Yes.	15 µg/day (ingestion)	0.5 micrograms/day (inhalation)

**International regulations****International lists:****Canadian Domestic Substances List (DSL):** Portland cement is included on the DSL.**Mexico Inventory (INSQ):** All components are listed or exempted.**Section 16. Other information****History****Date of issue mm/dd/yyyy:**

01/01/2020

**Version:**

1.1

**Revised Section(s):**

Not applicable.

**Notice to reader**

While the information provided in this safety data sheet is believed to provide a useful summary of the hazards of Portland cement as it is commonly used, the sheet cannot anticipate and provide all of the information that might be needed in every situation. Inexperienced product users should obtain proper training before using this product. In particular, the data furnished in this sheet do not address hazards that may be

posed by other materials mixed with Portland cement to produce Portland cement products. Users should review other relevant material safety data sheets before working with this Portland cement or working on Portland cement products, for example, Portland cement concrete.

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## 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