



Safety Data Sheet - Portland Cement

According To Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Revision Date: 05/27/2020 Date of issue: 03/12/2015 Version: 1.0

SECTION 1: IDENTIFICATION

1.1 Product Identifier

- 1.1.1 Product Form: Mixture
- 1.1.2 Product Name: Portland Cement
- 1.1.3 Synonyms: Kosmos cement, Type I, Type I Low Alkali, Type II, Type II Low Alkali, Type I,II, Type I,II Low Alkali, Type II(MH), Type IL, Type III, Type III Low Alkali, Type V, Type N Masonry, Type S Masonry, Hydraulic cement

1.2 Intended Use of the Product – Concrete mixtures for construction

1.3 Name, Address and Telephone Number of the Responsible Party:

Manufacturer – Kosmos Cement Company LLC
 15301 Dixie Highway, Louisville, KY 40272
www.kosmoscement.com

1.4 Emergency Telephone Numbers: (502) 935-7331, (502) 933-6336

SECTION 2: HAZARDS IDENTIFICATION

2.1 Classification of the Substance or Mixture

Classification (GHS-US) – For full text of H-phrases, see Section 16

Skin Corrosion	1A	H314
Eye Damage	1	H318
Skin Sensitivity	1	H317
STOT SE	3	H335



GH505



GH507

2.2 Label Elements – Labeling (GHS-US)

Hazard Pictograms (GHS-US):

Signal Word (GHS-US): DANGER

Hazard Statements (GHS-US):
 H314 – Causes severe skin burns and eye damage
 H317 – May cause an allergic skin reaction
 H318 – Causes serious eye damage
 H335 – May cause respiratory irritation

Precautionary Statements (GHS-US)
 P260 – Do not breathe dust
 P264 – Wash hands, forearms and exposed areas thoroughly after
 P271 – Use only outdoors or in a well-ventilated area
 P272 – Contaminated work clothing must not be allowed out of the workplace
 P280 – Wear eye and face protection; wear protective clothing and gloves
 P301, P330, and P331 – IF SWALLOWED: rinse mouth. Do NOT induce vomiting
 P302, P352 – IF ON SKIN: Wash with plenty of water
 P303, P361, and P353 – IF on skin (or hair): Remove contaminated clothing; rinse skin
 P304, P340 – IF INHALED: Move to fresh air; rest in a position comfortable for breathing
 P305, P351, and P338 – IF IN EYES: Rinse cautiously with water for several minutes;
 Remove contact lenses if present and easy to do.
 P310 – Immediately call a doctor or POISON CENTER
 P333, P313 – If skin irritation or rash occurs, get medical advice / attention
 P362, P364 – Remove contaminated clothing and wash them before reuse

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P403, P233 – Store in a well-ventilated place; keep container tightly closed.

P405 – Store materials locked up.

P501 – Dispose of contents / containers in accordance with local, regional, national, and/or international regulations as required.

2.3 Other Hazards

Exposure may aggravate those with pre-existing eye, skin or respiratory conditions.

2.4 Unknown Acute Toxicity (GHS-US) – No data available

SECTION 3: COMPOSITION / INFORMATION ON INGREDIENTS

3.1 Substance – Not Applicable

3.2 Mixture

Name	Product Identifier	%	Classification	(GHS-US)
Cement, portland, chemicals	(CAS No.) 65997-15-1	30 - 100	Skin Irritation	2 H315
			Eye Damage	1 H318
			Skin Sensitivity	1 H317
			STOT SE	3 H335
			Not Classified	
Limestone	(CAS No.) 1317-65-3	0 - 50	Not Classified	
Calcium Hydroxide	(CAS No.) 1305-62-0	0 - 20	Skin Irritation	2 H315
			Eye Damage	H318
			STOT SE	H335
			Aquatic Acute	H402
Gypsum (Ca(SO4)x2H2O)	(CAS No.) 13397-24-5	2 - 10	Not Classified	
Calcium Oxide	(CAS No.) 1305-78-8	0 - 5	Skin Irritation	H315
			Eye Damage	H318
			STOT SE	H335
Magnesium Oxide (MgO)	(CAS No.) 1309-48-4	0 - 4	Not Classified	

For full text of H-phrases, see Section 16

SECTION 4: FIRST AID MEASURES

4.1 Description of First Aid Measures

First-aid Measures, General: Never give anything by mouth to an unconscious person. If you feel unwell, seek medical advice (show the label where possible).

First-aid Measures after Inhalation: When symptoms occur: go into open air and ventilate suspected area. Obtain medical attention if breathing difficulty persists.

First aid Measures after Skin Contact: Remove contaminated clothing. Immediately flush skin with plenty of water for at least 60 minutes. Get medical advice/attention. Wash contaminated clothing before reuse.

First aid Measures after Eye Contact: Rinse cautiously with water for at least 60 minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Obtain medical attention.

First aid Measures after Ingestion: Rinse mouth. Do NOT induce vomiting. Immediately call a POISON CENTER or doctor/physician.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms/Injuries: Causes severe skin burns and eye damage. May cause an allergic skin reaction. May cause respiratory irritation.

Symptoms/Injuries after Inhalation: Dust may cause respiratory irritation.

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Symptoms/Injuries after Skin Contact: Causes severe skin burns. May cause an allergic skin reaction.

Symptoms/Injuries after Eye Contact: Causes serious eye damage.

Symptoms/Injuries after Ingestion: Ingestion is likely to be harmful or have adverse effects. Cement should not be eaten under any circumstances.

Chronic Symptoms: Portland cement may contain trace amounts (<0.1%) of free crystalline silica. Repeated or prolonged exposure to respirable (airborne) crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss.

4.3 Indication of any immediate medical attention and special treatment needed:

If you feel unwell, seek medical advice.

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

5.2 Special hazards arising from the substance or mixture

Fire Hazard: Non-combustible

Explosion Hazard: Product is not explosive

Reactivity: 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.

5.3 Advice for firefighters

Precautionary Measures: Exercise caution when fighting any chemical fire.

Firefighting Instructions: Do not allow run-off from firefighting to enter drains or water sources. Do not breathe fumes or vapors from fire.

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

Other Information: Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, Protective equipment and Emergency procedures

General Measures: Avoid all contact with skin, eyes, or clothing. Do not breathe dust.

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 Responders:

Protective Equipment: Equip cleanup crew with proper protection.

Emergency Procedures: Upon arrival at the scene, a first responder is expected to recognize the presence of dangerous goods, protect oneself and the public, secure the area, and call for the assistance of trained personnel as soon as conditions permit.

6.2 Environmental Precautions

Prevent entry to sewers and public waters.

6.3 Methods and Materials for containment and cleaning up

For Containment: Contain and collect as any solid. Avoid creating or spreading dust.

Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Recover the spillage in a dry state if possible. Minimize generation of airborne dust. The product can be slurried by the addition of water but will subsequently set as a hard material. Keep children away from the clean-up operation. Transfer spilled

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material to a suitable container for disposal. Utilize a dust suppressant when removing mechanically.

6.4 Reference to Other Sections

See Section 8, Exposure Controls and Personal Protection. Concerning disposal elimination after cleaning, see Section 13.

SECTION 7: HANDLING AND STORAGE

7.1 Precautions for Safe Handling

Precautions for Safe Handling: Do not breathe dust. Use only outdoors or in a well-ventilated area.

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, smoking and again when leaving work. Do not eat, drink or smoke when using this product.

7.2 Conditions for safe storage, including any incompatibilities

Technical Measures: Comply with applicable regulations.

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

Incompatible Products: Strong acids. Strong bases. Strong oxidizers.

7.3 Specific End Use(s): Concrete mixtures for construction.

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), or OSHA (PEL).

Cement, portland, chemicals (65997-15-1)				
USA ACGIH	ACGIH	(TWA)	(mg/m ³)	1 mg/m ³ (particulate matter containing no asbestos and <1% crystalline silica, respirable fraction)
USA ACGIH	ACGIH	chemical category		Not Classifiable as a Human Carcinogen
USA NIOSH	NIOSH REL	(TWA)	(mg/m ³)	10 mg/m ³ (total dust)
				5 mg/m ³ (respirable dust)
USA IDLH	USA IDLH		(mg/m ³)	5000 mg/m ³
USA OSHA	OSHA PEL	(TWA)	(mg/m ³)	15 mg/m ³ (total dust)
				5 mg/m ³ (respirable dust)
Gypsum (Ca(SO₄)x2H₂O) (13397-24-5)				
USA ACGIH	ACGIH	(TWA)	(mg/m ³)	10 mg/m ³ (inhalable fraction)
USA NIOSH	NIOSH REL	(TWA)	(mg/m ³)	10 mg/m ³ (total dust)
				5 mg/m ³ (respirable dust)
USA OSHA	OSHA PEL	(TWA)	(mg/m ³)	15 mg/m ³ (total dust)
				5 mg/m ³ (respirable dust)
Limestone (1317-65-3)				
USA NIOSH	NIOSH REL	(TWA)	(mg/m ³)	10 mg/m ³ (total dust)
				5 mg/m ³ (respirable dust)
USA OSHA	OSHA PEL	(TWA)	(mg/m ³)	15 mg/m ³ (total dust)
				5 mg/m ³ (respirable dust)

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Calcium Hydroxide (1305-62-0)				
USA ACGIH	ACGIH	(TWA)	(mg/m ³)	5 mg/m ³
USA NIOSH	NIOSH REL	(TWA)	(mg/m ³)	5 mg/m ³
USA OSHA	OSHA PEL	(TWA)	(mg/m ³)	15 mg/m ³ (total dust)
				5 mg/m ³ (respirable fraction)
Calcium Oxide (1305-78-8)				
USA ACGIH	ACGIH	(TWA)	(mg/m ³)	2 mg/m ³
USA NIOSH	NIOSH REL	(TWA)	(mg/m ³)	2 mg/m ³
USA IDLH	USA IDLH		(mg/m ³)	25 mg/m ³
USA OSHA	OSHA PEL	(TWA)	(mg/m ³)	5 mg/m ³
Magnesium Oxide (MgO) (1309-48-4)				
USA ACGIH	ACGIH	(TWA)	(mg/m ³)	10 mg/m ³ (inhalable fraction)
USA ACGIH	ACGIH	chemical category		Not Classifiable as a Human Carcinogen
USA IDLH	USA IDLH		(mg/m ³)	750 mg/m ³ (fume)
USA OSHA	OSHA PEL	(TWA)	(mg/m ³)	15 mg/m ³ (fume, total particulate)

8.2 Exposure Controls

Appropriate Engineering Controls: Emergency eyewash fountains and safety showers should be available in the immediate vicinity of any potential exposure. Ensure adequate ventilation, especially in confined areas. Ensure all national / local regulations are observed.

Personal Protective Equipment: Protective goggles. Face shield. Gloves. Protective clothing. If insufficient ventilation, wear respiratory protection.



Materials for Protective Clothing: Corrosion-proof clothing.

Hand Protection: Wear chemically resistant protective gloves.

Eye Protection: Chemical safety goggles and face shield.

Skin and Body Protection: Wear suitable protective clothing.

Respiratory Protection: If exposure limits are exceeded or irritation is experienced, approved respiratory protection should be worn.

Environmental Exposure Controls: Avoid release to the environment.

Consumer Exposure Controls: Do not eat, drink or smoke during use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on Basic Physical and Chemical Properties

Physical State:	Solid
Appearance:	Gray or white powder
Odor:	No distinct odor
Odor Threshold:	No data available
pH:	12 - 13
Evaporation Rate:	No data available

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Melting Point:	No data available
Freezing Point:	No data available
Boiling Point:	> 1000°C (1832°F)
Flash Point:	No data available
Auto-ignition Temperature:	No data available
Flammability (solid, gas):	No data available
Vapor Pressure:	No data available
Relative Vapor Density at 20°C:	No data available
Relative Density:	No data available
Specific Gravity:	3.15
Solubility:	Water: Slightly soluble (0.1 to 1%)
Partition Coefficient: N-Octanol / Water	No data available
Viscosity:	No data available

9.2 **Other Information:** No additional information available

SECTION 10: STABILITY AND REACTIVITY

- 10.1 **Reactivity:** 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.
- 10.2 **Chemical Stability:** Stable under normal ambient conditions.
- 10.3 **Possibility of Hazardous Reactions:** Hazardous polymerization will not occur.
- 10.4 **Conditions to Avoid.** Direct sunlight. Extremely high or low temperatures. Incompatible materials.
- 10.5 **Incompatible Materials.** Acids. Ammonium salts. Aluminum.
- 10.6 **Hazardous Decomposition Products:** None known.

SECTION 11: TOXICOLOGICAL INFORMATION

11.1 **Information on Toxicological Effects**

Acute Toxicity: Not classified

Calcium hydroxide (1305-62-0)	
LD50 Oral Rat	7340 mg/kg
Calcium Oxide (1305-78-8)	
LD50 Oral Rat	> 2000 mg/kg
LD50 Dermal Rabbit	> 2500 mg/kg

Skin Corrosion / Irritation: Causes severe skin burns.

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.

Carcinogenicity: Not classified.

Reproductive Toxicity: Not classified.

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

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

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Aspiration Hazard: Not classified.

Symptoms / Injuries after Inhalation: Dust may cause respiratory irritation.

Symptoms / Injuries after Skin Contact: Causes severe skin burns. May cause an allergic skin reaction.

Symptoms / Injuries after Eye Contact: Causes serious eye damage.

Symptoms / Injuries after Ingestion: Ingestion is likely to be harmful or to have adverse effects. Cement should not be eaten under any circumstances.

Chronic Symptoms: Portland cement may contain trace amounts (<0.1%) of free crystalline silica. Repeated or prolonged exposure to respirable (airborne) crystalline silica dust will cause lung damage in the form of silicosis. Symptoms will include progressively more difficult breathing, cough, fever, and weight loss.

SECTION 12: ECOLOGICAL INFORMATION

12.1 Toxicity

Calcium hydroxide (1305-62-0)	
LC50 Fish 1	50.6 mg/l
Calcium Oxide (1305-78-8)	
LC50 Fish 1	1070 mg/l (Exposure time: 96 h - Species: Cyprinus carpio [static])

12.2 Persistence and Degradability

Portland Cement (68475-76-3)	
Persistence and Degradability	Not established

12.3 Bio accumulative Potential

Portland Cement (68475-76-3)	
Bio accumulation Potential	Not established
Calcium Hydroxide (1305-62-0)	
BCF Fish 1	(no bio accumulation)
Calcium Oxide (1305-78-8)	
BCF Fish 1	(no bio accumulation)

12.4 Mobility in Soil: No additional information available.

12.5 Other Adverse Effects:

Other information: Avoid release to the environment.

SECTION 13: DISPOSAL CONSIDERATIONS

13.1 Waste Treatment Methods

Sewage Disposal Recommendations: Do not empty into drains. Do not dispose of waste into sewer.

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

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.

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SECTION 15: REGULATORY INFORMATION

15.1 US Federal Regulations

Portland Cement (68478-76-3)	
SARA Section 311 / 312 Hazard Classes	Immediate (acute) health hazard Delayed (chronic) health hazard
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	
Calcium Hydroxide (1305-62-0)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
Calcium Oxide (1305-78-8)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	
SARA Section 311 / 312 Hazard Classes	Immediate (acute) health hazard
Magnesium Oxide (MgO) (1309-48-4)	
Listed on the United States TSCA (Toxic Substances Control Act) inventory	

15.2 US State Regulations

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	
Gypsum (CaSO₄)x2H₂O (13397-24-5)	
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	
Calcium Hydroxide (1305-62-0)	
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	
Calcium Oxide (1305-78-8)	
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	

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

Revision Date: 05/27/2020

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

Portland cement should only be used by knowledgeable persons. Inexperienced product users must obtain proper training before using this product. A key to using the product safely requires the user to recognize that portland cement chemically reacts with water, and that some of the intermediate products of this reaction (that is, those present while a portland cement product is "setting") pose a far more severe hazard than does portland cement itself.

GHS Full Text Phrases:

Aquatic Acute 3	Hazardous to the aquatic environment - Acute Hazard Category 3
Eye Dam. 1	Serious eye damage / eye irritation - Category 1
Skin Corr. 1A	Skin corrosion / irritation - Category 1A
Skin Irrit. 2	Skin corrosion / irritation - Category 2
Skin Sens. 1	Skin sensitization - Category 1
STOT SE 3	Specific Target Organ Toxicity (single exposure) - Category 3
H314	Causes severe skin burns and eye damage
H315	Causes skin irritation
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H335	May cause respiratory irritation
H402	Harmful to aquatic life

This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.

SDS US (GHS HazCom)