Portland Limestone Cement Safety Data Sheet

Section1: Identification

Product Name : Portland Limestone Cement

Product Identifier : Cement, Portland Hydraulic Lime cement

Supplier/ Manufacturer : Oman Cement Company (SAOG)
PO Box 560, PC 112, Ruwi
Sultanate of Oman

Contact Number : 00968-24437070
Fax : 00968-24437777
E-mail : admin@omancement.com

Product Use : Cement is used as a binder in concrete and mortars that are widely used in construction. Cement is distributed in bags and bulk.

Section 2: Hazards Identification

Overexposure to cement can cause serious, potential, 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 cement.

OSHA/HCS Status: This material is considered hazardous by the OSHA Hazard communication standard (29CFR 1910:1200).

Classification of the Substance or Mixture:

Skin corrosion/Irritation – Category 1
Serious Eye Damage/Eye Irritation- Category 1
Skin Sensitization – Category 1
Carcinogenicity/Inhalation -Category -1A
Specific Target Organ Toxicity – single exposure
Respiratory Tract Infection – Category 3

Hazard Pictograms

Signal Word : Danger

Hazard Statements : Causes severe skin burns and eye damage.
May cause an allergic skin reaction.
May cause respiratory irritation.
May cause cancer

Precautionary statements:

Prevention: Obtain special instructions before use. Do not handle until all safety precautions have been read and understood. Avoid breathing dust. Use outdoors in a well-ventilated area. Wash any exposed body parts thoroughly after handling. Wear protective gloves/protective clothing/eye protection/face protection. Contaminated clothing must not be allowed out of the workplace.

Response : If exposed or concerned: Immediately get medical advice/attention if you feel unwell or irritation or rash occurs.If on skin: Wash with plenty of water. Take off contaminated clothing and wash it before reuse. If in eyes: Rinse continuously with water for several minutes. Remove contact lenses, if present and easy to do.If inhaled: Remove person to fresh air and keep comfortable for breathing. If swallowed: Rinse mouth. Do not induce vomiting.

Storage : Restrict or control access to stockpile areas (store locked up). Engulfment hazard: To prevent burial or suffocation, do not enter a confined space, such as a silo, bulk truck or other storage container or vessel that stores or contains Portland lime cement without an effective procedure for assuring safety. Store in a well-ventilated area. Keep container tightly closed.

Disposal : Dispose of contents/container in accordance with local/regional/ national/international regulations.

Hazards not otherwise classified (HNOC): None known

Supplemental Information: Respirable Crystalline Silica (RCS) may cause cancer. Repeated inhalation of respirable crystalline silica (quartz) may cause lung cancer according to IARC and NTP; ACGIH states that it is a suspected cause of cancer. Other forms of RCS (e.g., tridymite and cristobalite) may also be present or formed under certain industrial processes .

Section 3 : Composition/Information of Ingredients

Substance/mixture: Mixture
Chemical Name: Calcium compounds, calcium silicate compounds, and other calcium compounds make up the majority of this product.

S.No	Ingredient Name	Weight %	CAS #
1	Portland Cement Clinker	74-80	65997-15-1
2	Calcium Sulphate	5-6	13397-24-5
3	Limestone	15-20	1317-65-3
The Portland Limestone may contain the following in low concentration ranges			
1	Calcium Oxide	<1.5	1305-78-8
2	Quartz	<0.2	14808-60-7
3	Magnesium Oxide	<2.5	1309-48-4

Trace Ingredients:
The cement is manufactured using raw materials mined from the earth and it may contain trace amounts of calcium oxide (free lime), free magnesium oxide, potassium and sodium sulphate compounds and other trace compounds.

Section 4: First Aid Measures

4.1 Description of first Aid Measures

Eye Contact:
Rinse the eyes thoroughly with water for at least for 15 minutes, including under lids to remove all the particles. Continue Rinsing and get immediate medical advice/attention.

Skin Contact:
Remove contaminated clothing. Remove dry material from skin but avoid creating dust. Was with plenty of cool water. Seek medical attention in case of rash, irritation and dermatitis.

Inhalation:
Move the person to fresh air away from dust and keep comfortable for breathing. Seek medical attention if cough or any persistent throat irritation is observed.
Ingestion:
Do not induce vomiting. If the person is conscious make the person to rinse the mouth with water to remove any material and drink plenty of water to dilute any swallowed material. Seek medical attention immediately.

Ingestion : Rinse mouth. Do Not induce vomiting. Get immediate medical attention

4.2 Most Important symptoms/effects, acute and delayed potential acute health effects.

General: May cause respiratory irritation. Causes severe skin burns and eye damage. Skin sensitization. May cause cancer.

Inhalation: Irritation of the respiratory tract and the other mucous membranes. May be corrosive to the respiratory tract. The three types of silicosis include: 1) Simple chronic silicosis – which results from long-term exposure (more than 20 years) to low amounts of respirable crystalline silica. Nodules of chronic inflammation and scarring provoked by the respirable crystalline silica form in the lungs and chest lymph nodes. This

disease may feature breathlessness and may resemble chronic obstructive pulmonary disease (COPD); 2) Accelerated silicosis – occurs after exposure to larger amounts of respirable crystalline silica over a shorter period of time (5-15 years); 3) Acute silicosis – results from short-term exposure to very large amounts of respirable crystalline silica. The lungs become very inflamed and may fill with fluid, causing severe shortness of breath and low blood oxygen levels. Inflammation, scarring, and symptoms progress faster in accelerated silicosis than in simple silicosis. Progressive massive fibrosis may occur in simple or accelerated silicosis but is more common in the accelerated form. Progressive massive fibrosis results from severe scarring and leads to the destruction of normal lung structures.

Skin Contact: Concrete may cause dry skin, discomfort, irritation, severe burns, and dermatitis. Exposure of sufficient duration to wet concrete can cause serious, potentially irreversible damage to skin, eye, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort. Unhardened concrete is capable of causing dermatitis by irritation and allergy. Skin affected by dermatitis may include symptoms such as, redness, itching, rash, scaling, and cracking. Irritant dermatitis is caused by the physical properties of concrete including alkalinity and abrasion. Allergic contact dermatitis is caused by sensitization to hexavalent chromium (chromate) potentially present in concrete. The reaction can range from a mild rash to severe skin ulcers. Persons already sensitized may react to the first contact with wet concrete. Others may develop allergic dermatitis after years of repeated contact with wet concrete. May cause an allergic skin reaction**.**
Eye Contact: Potentially causes permanent damage to the cornea, iris, or conjunctiva. Airborne dust may cause immediate or delayed irritation or inflammation. Eye contact with large amounts of dry powder or with wet cement can cause moderate eye irritation, chemical burns and blindness. Eye exposures require immediate first aid and medical attention to prevent significant damage to the eye. Ingestion: May cause burns or irritation of the linings of the mouth, throat, and gastrointestinal tract.

Chronic Symptoms: May cause cancer

4.3. Indication of Any Immediate Medical Attention and Special Treatment Needed

If exposed or concerned, get medical advice and attention. If medical advice is needed, have product container or label at hand

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Section 4: First Aid Measures

Eye Contact:
Rinse the eyes thoroughly with water for at least for 15 minutes, including under lids to remove all the particles. Continue Rinsing and get immediate medical advice/attention.

Skin Contact:
Remove contaminated clothing. Remove dry material from skin but avoid creating dust. Was with plenty of cool water. Seek medical attention in case of rash, irritation and dermatitis.

Inhalation:

Move the person to fresh air away from dust and keep comfortable for breathing. Seek medical attention if cough or any persistent throat irritation is observed.
Ingestion:
Do not induce vomiting. If the person is conscious make the person to rinse the mouth with water to remove any material and drink plenty of water to dilute any swallowed material. Seek medical attention immediately.

Section 5: Fire Fighting Measures

5.1. Extinguishing Media : Water spray, dry chemical, foam, carbon dioxide.
Suitable Extinguishing Media: Water spray, dry chemical, foam, carbon dioxide.
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 considered flammable but may burn at high temperatures. Explosion Hazard: Product is not explosive. Reactivity: May react exothermically with water releasing heat. Adding an acid to a base or base to an acid may cause a violent reaction

5.3. Advice for Firefighters

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

Firefighting Instructions: Use water spray or fog for cooling exposed containers. Suitable
Protection During Firefighting: Do not enter fire area without proper protective equipment, including respiratory protection**.**

Hazardous Combustion Products: Silicon oxides.

Reference to Other Sections:
Refer to Section 9 for flammability properties.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Precautions:
Avoid creating dust. Prevent material from entering sewers or drains.
Personal Protection: Wear respiratory protection and protective eyewear/clothing to avoid eye or skin contact.

Emergency Procedures: Ventilate area and avoid creating dust. Remove unnecessary persons from area.

Containment Procedures: Barricade solid material to prevent additional spillages.

Clean Up Procedures: Scoop or vacuum up spilled material while avoiding dust creation. Scoop up wet material and place in approved container. Allow the material to solidify before disposal.

Waste Disposal Method:
Disposal of the cement Clinker will be carried out as per the Local ministry regulations. Avoid creation or breathing dust during disposal.

Flashpoint & Method: Material is not considered flammable or combustible.

Hazardous combustion products : None

Extinguisher Media: Use water or water spray to extinguish any fires involving this material.

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. Do not handle until all safety precautions have been read and understood.

6.1.1. For Non-Emergency Personnel
Protective Equipment: Use appropriate personal protective equipment (PPE).
Emergency Procedures: Evacuate unnecessary personnel.

6.1.2. For Emergency Personnel
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.
Ventilate area.

6.2. Environmental Precautions
Prevent entry to sewers and public waters.

6.3. Methods and Materials for Containment and Cleaning Up
For Containment: Contain solid spills with appropriate barriers and prevent migration and entry into sewers or streams. As an
immediate precautionary measure, isolate spill or leak area in all directions.
Methods for Cleaning Up: Clean up spills immediately and dispose of waste safely. Recover the product by vacuuming, shoveling or
sweeping. Transfer spilled material to a suitable container for disposal. Contact competent authorities after a spill. Cautiously
neutralize spilled solid. Vacuum clean-up is preferred. If sweeping is required use a dust suppressant.

6.4. Reference to Other Sections

See Section 8 for exposure controls and personal protection and Section 13 for disposal considerations.

Section 7: Handling and Storage

7.1. Precautions for Safe Handling

Additional Hazards When Processed: May release corrosive vapors. 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. Heavy material- proper lifting methods or equipment.
Precautions for Safe Handling: Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking
and when leaving work. Avoid contact with eyes, skin and clothing. Do not get in eyes, on skin, or on clothing. Handle empty
containers with care because they may still present a hazard. Do not breathe dust. Obtain special instructions before use. Do not
handle until all safety precautions have been read and understood.
Hygiene Measures: Handle in accordance with good industrial hygiene and safety procedures.

7.2. Conditions for Safe Storage, Including Any Incompatibilities

Technical Measures: Comply with applicable regulations.
Storage Conditions: Keep container closed when not in use. Store in a dry, cool place away from incompatible materials. Store in
original container or corrosive resistant and/or lined container.
Incompatible Materials: Acids. Oxidizers. Ammonium salts. Aluminum metal. Diazomethane. Phosphorus.
Storage Temperature: Unlimited.

7.3. Specific End Use(s)

Cement is used as a binder in concrete and mortars that are widely used in construction. Cement is distributed in bags and bulk.

SECTION 8: Exposure Controls/Personal Protection:

Avoid contact with skin or eyes. Avoid breathing dust. Use only in well ventilated areas. Wear appropriate personal protective equipments to prevent eye or skin contact and use respiratory protection equipment if dusty or in poorly ventilated areas.
Safe Storage Measures: Store in well ventilated areas away from moisture and incompatible materials. If stored in containers, keep containers closed when not in use.

Incompatible Materials: Water/exposure will cause material to generate heat. Keep away from fluoride compounds, strong acids, alkalis and oxidizers.

Section 8: Exposure Controls and Personal Protection

Control Parameters

Component	Exposure Limits
Cement, portland lime, chemicals	ACGIH TLV (United States, 3/2012) TWA: 1 mg/m³ 8hours. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total OSHA PEL (United States, 6/2010) TWA: 5 mg/m³. 8 hours. Form: Respirable
Calcium oxide	ACGIH TLV (United States, 3/2012) TWA: 2 mg/m³ 8 hours NIOSH REL (United States, 6/2009) TWA: 2mg/m³ 10 hours. OSHA PEL (United States, 6/2010) TWA: 5 mg/m³ 8 hours.
Calcium Hydroxide	ACGIH TLV (United States, 3/2012) TWA: 5 mg/m³ 8 hours NIOSH REL (United States, 6/2009) TWA: 5mg/m³ 10 hours. OSHA PEL (United States, 6/2010) TWA: 5 mg/m³. 8 hours. Form: Respirable fraction TWA: 15 mg/m³. 8 hours. Form: Total dust
Limestone	NIOSH REL (United States, 6/2009) TWA: 5 mg/m³ 10 hours. Form: Respirable fraction TWA: 10 mg/m³ 10 hours. Form: Total OSHA PEL (United States, 6/2010) TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust
Magnesium Oxide	ACGIH TLV (United States, 3/2012) TWA: 10 mg/m³ 8 hours. Form: Inhalable fraction OSHA PEL (United States, 6/2010) TWA: 15 mg/m³ 8 hours. Form: Total particulates

Component	Exposure Limits
Crystalline Silica (Quartz) (CAS 14808-60-7)	OSHA PEL (United States, 9/2017) TWA: 0.3 mg/m³. Form: Total dust (1,2) TWA: 0.05 mg/m³. Form: Respirable (1,2,3) ACGIH TLV (United States, 3/2012) TWA: 0.025 mg/m³. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 0.05 mg/m³. Form: Respirable dust
Calcium sulfate (gypsum)	ACGIH TLV (United States, 3/2012) TWA: 10 mg/m³ 8 hours. Form: Respirable fraction NIOSH REL (United States, 6/2009) TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 10 mg/m³ 8 hours. Form: Total dust OSHA PEL Z-1 (United States, 2/2006) TWA: 5 mg/m³ 8 hours. Form: Respirable fraction TWA: 15 mg/m³ 8 hours. Form: Total dust

Engineering Controls:

Use outdoors in well ventilated areas; otherwise employ natural or mechanical ventilation to maintain exposure within applicable 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 Protective Measures:

Eye Protection:

Wear safety glasses with side shields or protective goggles should be worn when handling cement to prevent direct contact with eyes. For extremely dusty conditions, non-vented goggles with indirect venting are recommended. Avoid using contact lenses while working in dusty conditions or while handling cement products.

Body:

Long sleeved shirts and trousers should be worn while using this material. Wear water proof boots. If working in dusty conditions impervious over garments are recommended.

Respiratory Protection:

If exposure levels cannot be below acceptable limits, suitable particulate filtering facemasks or respirators approved by MSHA/NIOSH should be worn in accordance with the user's respiratory protection program and OSHA/MSHA guidelines.

Skin Protection:

Wear gloves and use appropriate safety shoes which covers the foot and ankle. Remove the clothing and protective equipment which become saturated with wet cement and immediately wash the exposed areas.

Section 9: Physical and Chemical Properties

Physical State	: Solid (powder)	Evaporation Rate	: NA
Appearance	: Grey, off white powder	pH (in water)	: 12-13
Odour	: None	Boiling Point	: > 1000°C
Vapour Pressure	: NA	Freezing Point	: None, solid
Vapour Density	: NA	Viscosity	: None, solid
Specific Gravity	: 3.15	Particle Size	: 98% below 90µ
Solubility in water	: slightly (0.1-1.0%)		

Section 10: Stability and Reactivity

Stability: Stable. Keep it dry until use.

Reactivity: Reacts slowly with water forming hydrated compounds, releasing heat and producing a strong alkaline solution until reaction is substantially complete.

Chemical Stability: The product is stable.

Possibility of hazardous reactions: Under normal circumstances of storage and use, hazardous reactions will not occur.

Conditions to avoid: No specific data.

Incompatible materials: Reactive or incompatible with the following materials: oxidizing materials, acids, aluminum and ammonium salt. Portland lime 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.

Hazardous decomposition products: Under normal conditions of storage and use, hazardous decomposition products should not be produced.

Section 11: Toxicological Information

Product : Portland Limestone Cement

Acute Toxicity	Not Classified
LD 50/LC 50 Data	Not Classified
Skin Corrosion/Irritation	Causes irritation or chemical burns if exposed to moisture on skin
Critical Eye Damage/Irritation	Causes serious eye injury due to chemical burns or mechanical irritation
Respiratory or Skin sensitization	Not reported/no data available
Germ Cell Mutagenicity	Not reported/no data available
Teratogenicity	Not reported/no data available
Carcinogenicity	Material may contain trace element of crystalline Silica, which may cause lung cancer through repeated or prolonged exposure to dust
Specific Organ Toxicity (single exposure)	Not reported/no data available
Specific Organ Toxicity (repeated exposure)	May cause damage/disease to lungs through repeated or prolonged exposure
Reproductive Toxicity	Not reported/No data available
Aspiration Respiratory Hazard	Not reported/No data available
Symptoms : Inhalation	Coughing, sneezing, mucous discharge and dyspnea. Extended contact may lead to chemical burns.
Symptoms: Skin Contact	Redness and itching. Extended contact may lead to chemical burns.
Symptoms: Eye Contact	Redness and itching. Extended contact may lead to corneal abrasion/ulceration.
Symptoms: Ingestion	Irritation and chemical burns of mouth and throat.
Other Toxicological Information	No additional data available.

Components	**Toxicity**	**Carc: IARC**	**Carc:NTP**	**Carc:OSHA**
Tri Calcium Silicate	No Data	Not Listed	Not Listed	Not Listed
Di Calcium Silicate	No Data	Not Listed	Not Listed	Not Listed
Tetra Calcium Alumino Ferrite	No Data	Not Listed	Not Listed	Not Listed
Tri Calcium Aluminate	No Data	Not Listed	Not Listed	Not Listed
Magnesium Oxide	Oral LD 50 Rat 810 mg/Kg	Not Listed	Not Listed	Not Listed
Crystalline Silica (Quartz)	Oral LD 50 Rat > 22,500 mg/Kg LC 50 Carp > 10,000 mg/L (72 hr)	Group 1	Known	Listed
Limestone	Not Classified	Group 1	Known	Listed

Section 12: Ecological Information

General Ecotoxicity	Not Classified
Persistence and Degradability	Not Reported/ No data available
Bioaccumulation Potential	Not Reported /No data available
Mobility in Soil to Groundwater	Not Reported /No data available
Environmental fate	Not Reported /No data available
Other Environmental Precautions or Information	Avoid release to the environment. Prevent material from entering sewers, drains or ditches.

Section 13: Disposal Considerations

Disposal Methods	Dispose as an inert, nonmetallic mineral in accordance with applicable federal, state and local regulations
Special Considerations	Avoid creation or breathing dust during disposal. Avoid contact with skin and eyes.
Other Disposal Information	Prevent material from entering sewers, drains and ditches

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Section 14: Transport Information

The Pozzimix Cement can be transported in loose/bulk form by road and ship in the covered condition. This is not classified as a hazardous material as per the ministerial regulations of Oman. The DOT description is provided to assist in the proper shipping classification of these products and may not be suitable for all required shipping descriptions.

Section 15: Regulatory Information

OSHA:
Portland Cement is considered a hazardous chemical under 29 CFR 1910.1200 and should be included in employers' hazardous communication programs.

TSCA:
Some substances in Portland cement are considered are included on the TSCA inventory.

CERCLA:
Portland cement is not listed as hazardous substance under CERCLA.

SARA TITLE III:

Section 302: This product contains no “Extremely Hazardous Substances.”

Section 311/312: These products are considered a hazardous chemical and may have both immediate and delayed health effects.

Section 313: These products do not contain any constituents listed under SARA (Title III) Section 313 in amounts requiring supplier notification under 40 CFR part 372 Subpart C.

FEDERAL HAZARDOUS SUBSTANCES ACT:
Portland cement is a “hazardous substance” subject to statutes promulgated under this Act.
US STATE REGULATIONS: California Proposition 65:

Portland cement may contain crystalline silica which is known to the State of California to cause cancer. It may also contain trace elements of heavy metals known to the State of California to cause cancer, birth defects, or other reproductive harm.

Section 16: Other Information

Date of issue: 01/05/2020

Replaces: --

Revised Section(s): New

The purpose of this SDS is to provide the appropriate guidelines for Safe Handling, Use and disposal of the Material as supplied by Oman Cement Company. Oman Cement Company believes the information herein given is accurate; however OCC makes no guarantee with respect to such accuracy and assumes no liability in connection with the use of information contained herein.

ABBREVIATIONS:

OCC	**Oman Cement Company**
PLC	**Portland Limestone Cement**
ACGIH	American Conference of Governmental Industrial Hygienists
ASTM	American Society for Testing and Materials
CAS	Chemical Abstract Service
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	Code of Federal Regulations
DOT	Department of Transportation
ft3	Cubic Foot
IARC	International Agency for Research on Cancer
m3	Cubic meter
mg	Milligram
MSDS	Material Safety Data Sheet
MSHA	Mine Safety and Health Administration
N/A	Not applicable
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
PNOS	**Particulate Not Othereise Specified**
PNOR	**Particulates Not Otherwise Regulated**
PPE	Personal Protective Equipment
RQ	Reportable Quantity
TLV	Threshold Limit Value
TRI	Toxic Release Inventory
TSCA	Toxic Substance Control Act
TWA	Time Weighted Average
REL	**Recommended Exposure Limit**