

## Material Safety Data Sheet

### Section 1: PRODUCT AND COMPANY INFORMATION

MSDS: Clinker

**Product Name(s):** Portland cement clinker

**Product Identifiers:** MgO < 5%, Fe<sub>2</sub>O<sub>3</sub> (3-6) % , Al<sub>2</sub>O<sub>3</sub> (5.4-6) % , SiO<sub>2</sub> (21-24) % , CaO (64-68) %

**Manufacturer:**

**Information Telephone Number:**

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Bushehr- Kangan- Iran

Kangan Cement Co

+987737228221

**Emergency Telephone Number:**

+982188670711

### Section 2: COMPOSITION/INFORMATION ON INGREDIENTS

CaO content – 63-65% by weight

MgO content – 1.9-2.4% by weight

SiO<sub>2</sub> content – 20.5-22% by weight

Fe<sub>2</sub>O<sub>3</sub> content – 3-4.5% by weight

Trace Ingredients-crystalline silica, not greater than 1% by weight

### Section 3: HAZARD IDENTIFICATION

**Emergency Overview:** Portland Cement Clinker is a nodular solid and gray or black in color that poses little immediate hazard. It is not combustible or explosive. A single short- term exposure to the clinker dust is not likely to cause serious harm. However, exposure of sufficient duration to dry/wet dust can cause serious. Potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns.

**Potential Health Effects:**

**Effects Resulting Eye Contact:**

exposure to airborne dust may cause immediate or delayed irritation. Eye contact by large amounts of dry powder or splashes may cause effects ranging from moderate eye irritation to chemical burns or blindness.

Such exposures require immediate first aid and medical attention to prevent significant damage to the eye.

**Effects Resulting Skin Contact:**

discomfort or pain cannot be relied upon to alert a person to hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing skin contact, particularly with wet cement. Exposed person may not feel discomfort until hours after the exposure has ended and significant injury has occurred.

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Dry clinker dust contacting wet skin or exposure to moist or wet clinker may cause more severe skin damage in the form of chemical burns.

Some individuals may exhibit an allergic response upon exposure to clinker dust. The response may appear in a variety of forms ranging from a mild rash to severe skin ulcers. Persons already sensitized may react to their first contact with the product with the product. Other persons may first experience this effect after years of contact with clinker dust.

- Effects Resulting from Inhalation :** The clinker may contain trace amounts of free crystalline silica. Prolonged exposure to respirable free silica can aggravate other lung conditions and cause silicosis, a disabling and potentially fatal lung disease. Exposure to clinker dust may cause irritation to the moist mucous membranes of the nose, throat, and upper respiratory system. It may also leave unpleasant deposits in the nose.
- Effects Resulting from ingestion:** although small quantities of dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Clinker should not be eaten.

#### Section 4: FIRST AID MEASURES

- Eye Contact:** immediately flush eyes thoroughly with water. Continue flushing eye for at least 15 minutes, in closing under lids, to remove all particles. Call physician immediately.
- Skin Contact:** Wash skin with cool water and a pH-neutral soap or a mild detergent. Seek medical treatment in all cases of prolonged exposure to clinker dust.
- Inhalation of Airborne Dust:** Remove to fresh air. Seek medical help if coughing and other symptoms do not subside.
- Ingestion:** Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

#### Section 5: FIREFIGHTING MEASURES

Flash point .....None Lower Explosive limit .....None  
Upper Explosive Limit .....None Auto ignition temperature.....Not Combustible  
Extinguishing media .....Not Combustible special fire fighting procedures..... None  
Hazardous combustion products .....None Unusual fire and explosion hazards .....None

## Section 6: ACCIDENTAL RELEASE MEASURES

Collect dry material using a scoop. Avoid action that causes dust to become airborne. Avoid inhalation of dust and contact with skin.

Wear appropriate personal protective equipment.

Scrape up wet material and place in an appropriate container. Allow the material to "dry" before disposal.

Do not attempt to wash clinker down drains.

Dispose of the material according to local, state and federal regulation.

## Section 7: HANDLING AND STORAGE

Keep clinker dry until used. Normal temperatures and pressure do not affect the material.

Promptly remove dusty clothing or clothing which is wet dust and launder before reuse. Wash thoroughly after exposure to dust or wet fluids.

## Section 8: EXPOSURE CONTROLS AND PERSONAL PROTECTION

Skin Protection:	prevention is essential to avoiding potentially severe skin injury. Avoid contact with dust. If contact occurs, promptly wash affected area with soap and water. Wear impervious clothing and gloves to eliminate skin contact. Wear sturdy boots that are impervious to water to eliminate foot and ankle exposure. Do not rely on barrier creams: barrier creams should not be used in place of gloves. Periodically wash area contacted by dry dust or by wet dust or fluids with a PH-neutral soap. Wash again at the end of work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing become saturated with wet concrete, it should be removed and replace with clean dry clothing.
Respiratory protection:	Avoid actions that cause dust to become airborne. Use local or general exhaust ventilation to control exposures below applicable exposure limits.
Ventilation:	Use local exhaust or general dilution ventilation to control exposure within applicable limits.
Eye Protection:	Where potentially subject to splashes or puffs of clinker dust, wear safety glasses with side shields or goggles. In extremely dusty environment and unpredictable environment wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with clinker dust.

## Section 9: PHYSICAL AND CHEMICAL PROPERTIES

Appearance .....Gray/Black nodular solid Odor.....No distinct odor.  
 Physical state .....solid PH(in water).....12to 13  
 Solubility in water.....slightly soluble (0.1 to1.0%) vapor pressure .....Not applicable  
 Vapor density .....Not applicable Boiling point .....Not applicable (i.e.,>1000 Deg C)  
 Melting point .....Not applicable Specific gravity (H2O-1.0)..... 3.10-3.15  
 Evaporation rate .....Not applicable

## Section 10: STABILITY AND REACTIVITY

**Stability:** Stable  
**Conditions to avoid:** Unintentional contact with water.  
**Incompatibility:** Wet clinker is alkaline. As such it is incompatible with acids, ammonium salts and phosphorous.  
**Hazardous Polymerization:** Will not occur  
**Hazardous Decomposition:** Will not spontaneously occur, Adding water produces ( caustic) calcium hydroxid

## Section 11 and 12: TOXICOLOGICAL AND ECOLOGICAL INFORMATION

For more detailed toxicological information contact the manufacturer.

Eco toxicity: No recognized unusual toxicity to plants or animals

## Section 13: DISPOSAL CONSIDERATIONS

Dispose of waste and containers in compliance with applicable Federal and Local regulations.

## Section 14: TRANSPORT INFORMATION

Clinker id not covered by the international regulation on the transport of dangerous goods (IMDG,IATA,ADR/RID) and therefore no classification is required. No special precautions are needed apart form thode mentioned under Heading 8.

## Section 15: REGULATORY INFORMATION

### OSHA/MSHA Hazard communication:

Clinker is considered a hazardous chemical under this regulation and should be in cluded in the employer's hazard communication program.

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## Section 16: OTHER INFORMATION

This MSDS provides information on Portland Cement Clinker. The information provided herein is believed by Hegmatan Cement Co. to be accurate at the time of preparation. Health and safety precaution in this data sheet may not be adequate for all individuals or situations. Users have the responsibility to comply with all laws and procedures applicable to the safe handling and use of the product, to determine the suitability of the product for its intended use and to understand possible hazards associated with mixing cement with other materials.

### Abbreviations:

**IMDG:** International Maritime Dangerous Goods

**IATA:** International Air Transport Association

**ADR/RID:** Agreement on the transport of dangerous goods by road/regulations on the international transport of dangerous goods by rail

**OSHA:** Occupational safety and health administration

**MSHA:** Mine safety and Health Administration

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