Material Safety Data Sheet (MSDS)
Material: Ordinary Portland cement

National Cement Factory

Section I - Identification

Supplier: **Name: National Cement Factory** **Address: Post Box No.106077** **ICAD, Musaffah, Abudhabi, U.A.E** **Telephone: (+971) 2 55 00 933,** **Fax : (+971) 2 55 009 44.**	
Product Name: NorCem (Ordinary Portland Cement) ASTM C 150 Type I and BSEN 197-1 Cem-I	**Formula:** This product consists of finely ground Portland cement Clinker mixed with a small amount of calcium sulfate (gypsum).
Chemical Family: Chemical compounds. Calcium silicate components and other calcium compounds containing iron and aluminum make up the majority of this product.	**Chemical Name and Synonyms** Portland cement. Portland cement is also known as hydraulic cement..

Section II – Components

Component	CAS No.	OSHA PEL (8-hour TWA)	ACGIH TLV-TWA (2002)
Tri-calcium silicate	12168-85-3	see Nuisance Dust PEL	see Nuisance Dust TLV
Di-calcium silicate	10034-77-2	see Nuisance Dust PEL	see Nuisance Dust TLV
Tetra-calcium- alumino-ferrrite	12068-35-8	see Nuisance Dust PEL	see Nuisance Dust TLV
Magnesium oxide	1309-48-4	see Nuisance Dust PEL	see Nuisance Dust TLV
Nuisance Dusts	---	15 mg/m 3 (total dust); 5 mg/m3 (respirable dust)	10 mg/m3 (total dust); 3 mg/m3 (respirable dust
Tri-calcium Aluminate	12042-78-3	see Nuisance Dust PEL	see Nuisance Dust TLV
Crystalline Silica (Quartz) *	14808-60-7	10 mg/m3 /percent silica + 2 (respirable dust) 30 mg total dust/m3/percent silica + 2 (total dust)	0.10 mg/m3
Hexavelant Chromium (measured as chromic acid and chromates)	18540-29-9	(100 mg/m3)	

Trace constituents: Portland cement has a variable composition depending upon the cementetious products produced in the cement kiln. Small amounts of naturally occurring, but potentially harmful, chemical compounds might be detected during chemical analysis. These trace compounds might include free crystalline silica, potassium and sodium compounds; heavy metals including cadmium, chromium, nickel and lead; and organic compounds. Other trace constituents may include calcium oxide (also known as free lime or quick lime).

Section III – Hazardous Identification

Emergency Overview

Portland cement is a light gray powder that poses little immediate hazard. A single short-term exposure to the dry powder is not likely to cause serious harm. However, exposure to wet Portland cement can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns or an allegoric reaction. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry Portland cement.

Potential Health Effects

- *Relevant Routes of Exposure:* Eye contact, skin contact, inhalation, and ingestion
- *Effects resulting from eye contact:* Exposure to airborne dust may cause immediate or delayed irritation, burns or damage to the cornea.
- *Effects from skin contact:* May cause dry skin, redness, discomfort or irritation.
- *Effects resulting from inhalation:* Prolonged or repeated exposure may cause lung injury including silicosis due to the presence of crystalline free silica, which has been classified by IARC as a known (Group I) human carcinogen through inhalation. Prolonged .exposure to respirable free crystalline silica can aggravate other lung conditions and cause silicosis, a disabling and potentially fatal lung disease and/or other diseases. Risk of injury or disease depends on duration and degree of exposure.
  (Also see "Carcinogenic potential" below.) It may also leave unpleasant deposits in the nose.

- *Effects resulting from ingestion:* Although small quantities of this dust are not known to be harmful, ill effects are possible if larger quantities are consumed. Portland cement should not be eaten.
- *Carcinogenic potential:* Portland cement has not been listed as a carcinogen by NTP, OSHA, or IARC. It may, however, contain trace amounts of substances, such as silica, which are listed as carcinogens by these organizations. Crystalline silica, which may be present in Portland cement in small amounts, has been listed by IARC as a known human carcinogen (Group I) through inhalation.
- *Medical conditions which may be aggravated by inhalation or dermal exposure*: pre-existing lung diseases.

Section IV – First Aid

***Eyes*:** Immediately flush eyes thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.
Skin: Wash skin with cool water and pH-neutral soap or a mild detergent. Seek medical treatment for abrasions.
Inhalation of Airborne Dust: Remove to fresh air. Seek medical help if coughing or other symptoms do not subside. (Inhalation of gross amounts of Portland cement requires immediate medical attention.)
Ingestion: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.

Section V – Fire & Explosion Data

Flash point: *None*
Lower Explosive Limit: *None*
Extinguishing media: *Not Combustible*
Hazardous combustion products: *None*

Auto ignition temperature: *Not Combustible*
Upper Explosive Limit: *None*
Unusual fire & explosion hazards *None*

Special fire fighting procedures: None. (Although Portland Cement poses no fire-related hazards, a self-contained breathing apparatus is recommended to limit exposure to combustion products when fighting any fire.)

Section VI - Accidental Release Measure

Collect dry material using a scoop. Avoid actions that cause dust to become airborne. Avoid inhalation of dust and contact with skin .Wear appropriate personal protective equipment as described in Section VIII.

Scrape up wet material and place in an appropriate container. Allow the material to "dry" before disposal. Do not attempt to wash Portland Cement down drains.
Dispose of waste material according to local, state, and federal regulations.

Section VII - Handling & Storage

Keep Portland cement dry until used. Normal temperatures and pressures do not affect the material. Promptly remove dusty clothing or clothing which is wet with cement fluids and launder before reuse. Wash thoroughly after exposure to dust or wet cement mixtures or fluids.

Section VIII - Exposure Control /Personal Protection

Skin Protection: Wear impervious gloves, shoes and protective clothing to prevent skin contact.

Respiratory protection: Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits. Under ordinary circumstances, no respiratory protection should be required. Use NIOSH or MSHA approved respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation.

Ventilation: Use local exhaust or general dilution ventilation to control exposure within applicable limits.

Eye Protection: In conditions where user may be exposed to excessive concentrations of Portland cement dust, safety glasses with side shields or goggles should be worn.

Section IX- Physical & Chemical Properties

Appearance: *Gray*
Physical state: *Solid (powder)*
Solubility in water: *Slightly (0.1 to 1.0%)*
Vapor Pressure: *Not applicable*
Boiling point: *Not applicable (i.e., > 1000 °C)*
Specific gravity (H2O = 1.0): *3.15*

Odor: *No distinct odor*
pH (in water): 12 to 13
Evaporation Rate: *Not applicable*
Vapor density: *Not applicable*
Melting point: *Not applicable*

Section X- Stability & Reactivity

Stability:	*Stable.*
Incompatibility:	*Wet Portland cement is alkaline. As such it is incompatible with Acids, ammonium salts, and aluminum metal.*
Conditions to avoid:	*Unintentional contact with water.*
Hazardous decomposition:	*Will not spontaneously occur. Adding water produces (caustic) Calcium hydroxide as a result of hydration.*
Hazardous polymerization:	*Will not occur.*

Section XI- Toxicological Information

For a description of available, more detailed toxicological information, contact NCF (in Section I).

Section XII- Ecological Information

Ecotoxicity: *No recognized unusual toxicity to plants or animals*

Relevant physical and chemical properties: *See Sections IX & X*

Section XIII- Disposal

Dispose of waste material according to local, state, and federal regulations. (Since Portland cement is stable, uncontaminated material may be saved for future use.) Dispose of bags in an approved landfill or incinerator.

Section XIV- Transportation Data

Ordinary Portland Cement (OPC) is not considered hazardous according to the International regulation for transportation of hazardous freights, therefore it shall not be subject to the respective modal (Page 9 of 10) regulations: IMDG (by sea), ADR (by land), RID (by railway), ICAO/IATA (by air). Also, not hazardous under *U.S. and UAE Department of Transportation (DOT) regulations*

No other safety measures are needed besides those mentioned under item VII.

Section XV- Other Regulatory Information

- **Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910.1200:** *Portland cement is considered a "hazardous chemical" .Under this regulation, and should be part of any hazard communication program.*
- **Status under CERCLA/Superfund, 40 CFR 117 and 302:** *Not listed.*
- **Hazard Category under SARA (Title III), Sections 311 & 312:** Portland cement *qualifies as a "hazardous substance" with delayed Health effects.*
- **Status under SARA (Title III) Section 313:** *Not subject to reporting requirements under section 313.*
- **Status under TSCA (as of May 1997):** *Some trace substances, which may be present in Portland Cement, are on the TSCA inventory list.*
- **Status under the Federal Hazardous Substances Act:** *Portland Cement is a "hazardous substance" subject to statutes Promulgated under the subject act.*
- **Status under California Proposition 65:** ***WARNING:*** *This product contains chemicals known to the State of California to cause cancer and birth defects or other reproductive harm. California law requires the manufacturer to give the above warning in the absence of definitive testing to prove that the defined risks do not exist.*
- **Status under Canadian Environmental Protection Act:** *Not listed.*

- **Workplace Hazardous Material Information System (Canada)**: *Portland Cement is considered to be a hazardous material under the Hazardous Product Act as defined by the Controlled Products Regulations and is therefore subject to the labeling and MSDS requirements of the Workplace Hazardous Materials Information System (WHMIS).*

Section XVI– Other Information

Approved by: MOHAMMAD YASSIN
Revision Date: Dec 04, 2018

Other important information:

Portland cement should only be used by knowledgeable persons. While the information provided in the material 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.

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 with Portland cement products, including, for example, Portland cement concrete.

SELLER MAKES NO WARRANTY, EXPRESSED OR IMPLIED, CONCERNING THE PRODUCT OR THE MERCHANTABILITY OR FITNESS THERE OF FOR ANY PURPOSE OR CONCERNING THE ACCURACY OF ANY INFORMATION PROVIDED BY NCF, EXCEPT THAT THE PRODUCT SHALL CONFORM TO CONTRACTED SPECIFICATIONS.