Material Safety Data Sheet (MSDS)

Material: Blast Furnace Cement -SRCem

Section I - Identification

Supplier: **Name: National Cement Factory** **Address: Post Box No.106077** **ICAD-I, Musaffah, Abudhabi, U.A.E** **Telephone: 00971 2 55 00 933; Fax : 00971 2 55 009 44**	
Product Codes: SRCem. Portland Blast Furnace Cement as per BS EN 197-1 CEM III/B-SR 42.5N and ASTM C 595 Type IS	**Formula:** This product consists of finely ground SRCem, clinker mixed with a small amount of calcium sulfate (gypsum) and Granulated Blast Furnace Slag.
Chemical Family: Chemical compounds. Calcium silicate components and other calcium compounds containing iron and aluminum make up most of this product.	**Chemical Name and Synonyms**: Blast furnace Cement, CEM III / B-SR 42.5 N.

Section II – Components

Ingredient/component	CAS No.	* Concentration percent (%) wt.
Portland Cement Clinker	65997-15-1	30 to 34%
Granulated Blast Furnace Slag	65996-69-2	66-70%
Calcium sulfate dihydrate	10101-41-4	> 6%
Crystalline Silica	14808-60-7	> 1%

*The exact percentage (concentration) of the composition has been withheld as proprietary.

***Trace constituents**:* SRCem 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, hexavalent chromium, nickel, lead; and organic compounds.

Section III – Hazardous Identification

Emergency Overview

Blast Furnace 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 Blast Furnace 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 Blast Furnace 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. Blast Furnace cement should not be eaten.
- *Carcinogenic potential:* Blast Furnace 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 Blast Furnace 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.

Label Elements – Hazard pictograms (GHS-US):

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 Blast Furnace 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 Blast Furnace 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 Blast Furnace Cement down drains.
Dispose of waste material according to local, state, and federal regulations.

Section VII – Handling & Storage

Keep Blast Furnace 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

Component	OSHA PEL (mg/m^3)	ACGIH TLV (mg/m^3)	NIOSH REL(mg/m^3)
Portland cement Clinker	15 (T); 5 (R)	10 (T); 3 (R)	10 (T); 5 (I)
Granulated Blast Furnace Slag	15 (T); 5 (R)	10 (I)	10 (T); 5 (I)
Calcium sulfate (gypsum)	15 (T); 5 (I)	10 (I)	10 (T); 5 (I)
Crystalline silica (as quartz)	0.05 (I)	0.025 (I)	0.05 (I)
Nuisance dust (PNOC)	15 (T); 5 (R)	10 (T); 3 (R)	Not established
T = total dust, R = respirable fraction, I = inhalable aerosol.			

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 Blast Furnace cement dust, safety glasses with side shields or goggles should be worn.

Section IX– Physical & Chemical Properties

Appearance: *Grey or Light Grey powder*
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): *2.94*

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 Blast Furnace 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.*

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Section XI– Toxicological Information

Information on toxicological effects
Portland Blast Furnace cement is a mixture of materials consisting of calcium silicates and calcium aluminates, crystalline silica, and other additives. May also contain small amounts of calcium oxide (a.k.a. quicklime) (CaO) magnesium oxide (MgO), sodium sulfate (Na2SO4), and potassium sulfate (K2SO4).

Acute toxicity:	Not classified.
LD50/LC50 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 contains trace amounts of crystalline silica, which may cause lung cancer through repeated or prolonged exposure to dust.
Specific target organ toxicity (Single exposure):	May cause respiratory irritation.
Specific target organ toxicity (Repeated exposure):	May cause damage to lungs through repeated or prolonged exposure.
Reproductive toxicity:	Not reported/no data available.
Aspiration respiratory hazard:	Not reported/no data available.
Symptoms: Eye contact:	Redness and itching. Extended contact may lead to corneal. abrasion/ulceration.
Symptoms: Skin contact:	Redness and itching. Extended contact may lead to chemical burns.
Symptoms: Inhalation:	Irritation of the respiratory tract
Symptoms: Ingestion:	Nausea, Vomiting.
Other toxicological information:	No additional data available.

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 Blast Furnace cement is stable, uncontaminated material may be saved for future use.) Dispose of bags in an approved landfill or incinerator.

Section XIV– Transportation Data

Portland Blast Furnace Cement (SRCem) 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:** *Blast Furnace 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:** Blast Furnace 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 Blast Furnace Cement, are on the TSCA inventory list.*
- **Status under the Federal Hazardous Substances Act:** *Blast Furnace 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**): *Blast Furnace 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: Abdullah Al Khateeb
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Other important information:

Blast Furnace 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 Blast Furnace 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 Blast Furnace cement to produce Blast Furnace cement products. Users should review other relevant material safety data sheets before working with this Blast Furnace cement or with Blast Furnace cement products, including, for example, Blast Furnace cement concrete.

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