



Material Safety Data Sheet
For
Portland Cement CEM I 42.5 N

Section I - Identity

Manufacturer's name and address: Arabian Cement Company

61, Teseen Street, 2nd Floor

Fifth Settlement, New Cairo – EGYPT

Emergency Telephone Number: +202 25371184/79/76

Chemical Name and Synonyms: Portland Cement CEM I 42.5 N

Trade Name and Synonyms: CEM I 42.5 N

Revision Date: Jan 2017.

Chemical Family: Calcium Salts

Description: Portland cement clinker is a sintered material produced by heating to high temperature (greater than 1200 degrees Celsius) a mixture of substances such as limestone and shale from the earth's crust. The substances manufactured are essentially hydraulic calcium silicates contained in a crystalline mass, not separable into the individual components. The clinker then grind in cement mills with gypsum to be fine material.

Section II - Hazardous Ingredients

Ingredients: Substances similar to the following are known to be present in clinker and Portland cement:

3CaO.SiO₂ (CAS # 12168-85-3)

2CaO.SiO₂ (CAS # 10034-77-2)

3CaO.Al₂O₃ (CAS # 12042-78-3)

4CaO.Al₂O₃.Fe₂O₃ (CAS # 12068-35-8)

Small amounts of CaO, MgO, K₂SO₄, Na₂SO₄ may also be present.

Nuisance dusts (or, particulates NOT otherwise classified) are listed by OSHA in 29 CFR 1910.1000, Table Z-1-A. MSHA and ACGIH consider cement as a nuisance dust. However, since cement is manufactured from raw materials mined from the earth (limestone, marl, sand, shale, clay, etc.) and process heat is provided by burning fossil fuels, trace, but detectable, amounts of naturally occurring, and possibly harmful, elements may be found during chemical analysis. Clinker may contain 0.75 percent insoluble residue. A fraction of these residues may be free crystalline silica.

ACGIH Threshold Limit Value (1994-95): Total dust containing no asbestos and less than 1% silica -10 mg/m³

OSHA PEL: Total dust - 10 mg/m³

Respirable Dust - 5 mg/m³

MSHA TLV (1973): Total dust - 10 mg/m³

Section III - Physical Data

Boiling Point: Not applicable.

Vapor Pressure: Not applicable.

Vapor Density: Not applicable.

Solubility in Water: Slight (0.1-1.0%)

Specific Gravity: (H₂O=1) 3.15

Evaporation Rate: Not applicable.

Appearance and Odor: A nodular, rock-like solid that is grayish-tan to black with a sandy/granular texture.

Melting Point: Not applicable



Section VI - Fire and Explosion Hazard Data

Flash Point: Portland cement clinker is noncombustible and not explosive.

Flammable or Explosive Limits: Not applicable.

Extinguishing Media: Not applicable

Special Firefighting Procedures: Not applicable.

Unusual Fire and Explosion Hazards: Not applicable.

Lower Explosive Limit: Not applicable.

Upper Explosive Limit: Not applicable.

Section V - Health Hazard Data

Effects of Overexposure:

Acute: Clinker dust can dry unprotected skin and cause mild to severe caustic burns. Direct contact with the eyes can cause effects ranging from mild irritation to severe burns. Inhalation can irritate the upper respiratory system.

Chronic: Clinker dust can cause inflammation of the lining tissue of the interior of the nose and inflammation of the cornea. Hypersensitive individuals may develop an allergic dermatitis. [Cement may contain trace (less than 0.05%) amounts of chromium salts or compounds including hexavalent chromium, or other metals found to be hazardous or toxic in some chemical forms.]

Carcinogenic Potential: Clinker is NOT listed by NTP, IARC or OSHA as a carcinogen.

Emergency and First Aid Procedures: Irrigate eyes immediately and repeatedly with water and get prompt medical attention. Wash exposed skin areas with soap and water. Apply sterile dressings. If ingested, consult a physician immediately. Drink water.

Section VI - Reactivity Data

Stability: Product is stable. Keep dry until used.

Incompatibility: Clinker is highly alkaline and will react with acids to produce heat typical of acid-base neutralization. Toxic gases or vapors may be given off depending on the acid involved.

Hazardous Decomposition Products: None

Hazardous Polymerization: Will not occur.

Section VII - Spill Procedures

Steps to be taken in case material is spilled: Use dry cleanup methods that do not disperse the dust into the air. Avoid breathing the dust. Emergency procedures are not required.

Disposal Method: Unground clinker can be returned to the container for later use if it is not contaminated. Dispose of unused material in accordance with Federal, State and local requirements. Clinker is not a hazardous waste as defined by the Resource Conservation and Recovery Act (40 CFR 261).

Section VIII-Special Protection Information

Respiratory Protection: In dusty environments, the use of a MSHA/NIOSH-approved respirator with dust filtering capability is recommended.

Ventilation: Local exhaust can be used to control airborne dust levels.

Eye Protection: Use tight fitting goggles in dusty environments.



Skin Protection: Use impervious, abrasion- and alkali-resistant gloves, boots and protective clothing to protect the skin from prolonged contact with wet clinker.

Work/Hygienic Practices: Immediately after working with clinker materials, workers should shower with soap and water. Follow listed precautions as appropriate during repair or maintenance work on contaminated equipment.

Note: This material safety data sheet attempts to describe as accurately as possible the potential exposures associated with normal cement and clinker use. Health and safety precautions in this data sheet may not be adequate for all individuals and/or situations. Users have the responsibility to evaluate and use this product safely and to comply with all applicable laws and regulations.

This product neither contains nor is directly manufactured with any controlled ozone depleting substances, Class I and II.

Section IX- HANDLING AND 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 X- TRANSPORTATION DATA

Transport in accordance with ADR/RID, IMDG and ICAO/IATA. NOT Applicable

Hazardous materials description/proper shipping name

Portland cement is not hazardous under U.S. Department of Transportation (DOT) regulations.

Hazard class

Not applicable

Identification number

Not applicable.

Required label text

Not applicable.

Hazardous substances/reportable quantities (RQ)

Not applicable

Section XI - FIRST AID

Eyes: Immediate 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 intended for use on skin. Seek medical treatment in all cases of prolonged exposure to wet cement kiln dust, cement kiln dust mixtures, liquids from fresh cement products, or prolonged wet skin exposure to dry cement kiln dust.

Inhalation of Airborne Dust: Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. ("Inhalation" of gross amounts of cement kiln dust requires immediate medical attention.)

Ingestion: Do not induce vomiting. If conscious, have the victim drink plenty of water and call a physician immediately.



Section XII - ACCIDENTAL RELEASE MEASURES

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 8. Scrape up wet material and place in appropriate container. Allow the material to “dry” before disposal. Do not attempt to wash cement kiln dust down drains.
Dispose of waste material according to local, state, and federal regulations.

Section XIII - EXPOSURE CONTROLS/PERSONAL PROTECTION

Skin protection: Prevention is essential to avoid potentially severe skin injury. Avoid contact with unhardened (wet) cement kiln dust products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened cement kiln dust products might occur, wear impervious clothing and gloves to eliminate skin contact. Where required, wear 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 areas contacted by dry or wet cement kiln dust by wet cement or concrete fluids with a pH neutral soap. Wash again at the end of the work. If irritation occurs, immediately wash the affected area and seek treatment. If clothing becomes saturated with wet concrete, it should be removed and replaced with clean dry clothing.

Respiratory protection: Avoid actions that cause dust to become airborne. Use local or general ventilation to control exposures below applicable exposure limits.

Use NIOSH/MSHA-approved (under 30 CFR 11) or NIOSH-approved (under 42 CFR 84) respirators in poorly ventilated areas, if an applicable exposure limit is exceeded, or when dust causes discomfort or irritation. (Advisory: Respirators and filters purchased after July 10, 1998, must be certified under 42 CFR 84)

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

Eye protection: When engaged in activities where cement kiln dust or wet cement kiln dust or concrete could contact the eye, wear safety glasses with side shields or goggles. In extremely dusty environments and unpredictable environments, wear unvented or indirectly vented goggles to avoid eye irritation or injury. Contact lenses should not be worn when working with wet cement kiln dust or fresh cement products.

Section XIV - ECOLOGICAL INFORMATION

Ecotoxicity: No recognized unusual toxicity to plants or animals.

Relevant physical and chemical properties: See sections 2 and 3.

Section XV - DISPOSAL

Dispose of waste material according to local, state, and federal regulations. (Since cement kiln dust is stable, uncontaminated material may be saved for future use.)

Dispose of bags in an approved landfill or incinerator.

SECTION XVI - OTHER INFORMATION

Abbreviations:

ACGIH American Conference of Government Industrial Hygienists

ASTM American Society of Testing Materials



CAS Chemical Abstract Service
CFR Code of Federal Regulations
CKD Cement Kiln Dust
DOT Department of Transportation
IARC International Agency for Research
m³ cubic meter
mg Milligram
mm millimeter
MSDS Material Safety Data Sheet
MSHA Mine Safety and Health Administration
NIOSH National Institute for Occupational Safety and Health
NTP National Toxicity Program
OSHA Occupational Safety and Health Administration
PEL Permissible Exposure Limit
RQ Reportable Quantities
SARA Superfund Amendments and Reauthorization Act
TLV Threshold Limit Value
TWA Time Weighted Average
URT Upper Respiratory Tract
WHMIS Workplace Hazardous Material Information System