



Material Safety Data Sheet for Portland Cement Clinker

Section I - Identity

Manufacturer's name and address: Ash Grove Cement Company
11011 Cody
Overland Park, KS 66210

Emergency Telephone Number: (913) 451-8900

Chemical Name and Synonyms: Portland Cement Clinker for Type I, IA, II, III, V

Trade Name and Synonyms: Type I, IA, II, III, V

Revision Date: May 2007

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.

Section II - Hazardous Ingredients

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

3CaO.SiO ₂	(CAS # 12168-85-3)
2CaO.SiO ₂	(CAS # 10034-77-2)
3CaO.Al ₂ O ₃	(CAS # 12042-78-3)
4CaO.Al ₂ O ₃ .Fe ₂ O ₃	(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 clinker dust as a nuisance dust. However, since clinker 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.

Section II - Hazardous Ingredients - Continued

ACGIH Threshold Limit Value (1994-95):	Total dust containing no asbestos and less than 1% silica - 10 mg/m ³
OSHA PEL:	Total dust - 10 mg/m ³ Respirable Dust - 5 mg/m ³
MSHA TLV (1973):	Total dust - 10 mg/m ³

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 IX-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.