THE MONARCH Cement Company
MANUFACTURERS OF PORTLAND CEMENTS
SINCE 1908
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HUMBOLDT, KANSAS 66748-0900

MATERIAL SAFETY DATA SHEET FOR MASONRY CEMENT

SECTION I - IDENTITY

OSHA 29CFR 1910.1200

Manufacturer's Name and Address:	The Monarch Cement Co., Humboldt, KS 66748
Emergency Telephone Number:	620-473-2222
Chemical Name and Synonyms:	Hydraulic Cement
Trade Name and Synonyms:	Masonry Cement - Type N, Type S
MSDS Information:	Revised July 2004 and replaces any prior versions.

SECTION II - CHEMICAL DATA

Component Name	%	CAS No.
Tri-Calcium Silicate	20-70	12168-85-3
Calcium Carbonate	30-50	1317-65-3
Di-Calcium Silicate	10-60	10034-77-2
Tetra-Calcium-Alumino-Ferrite	5-15	12068-35-8
Calcium Sulfate	2-10	Various
Tri-Calcium Aluminate	1-15	12042-78-3
Magnesium Oxide	0-4	1309-48-4

	EXPOSURE LIMITS OSHA PEL TWA	ACGIH TLV TWA
Calcium Carbonate		
(Respirable Dust)	5 mg/m^3	
(Total Dust)	15 mg/m^3	10 mg/m^3
Masonry Cement (CAS 65997-15-1)		
(Respirable Dust)	5 mg/m^3	
(Total Dust)	50 million particles/ft^3	10 mg/m^3
Calcium Sulfate		
(Respirable Dust)	5 mg/m^3	
(Total Dust)	10 mg/m^3	10 mg/m^3
Magnesium Oxide	10 mg/m^3	10 mg/m^3
Calcium Oxide	5 mg/m^3	2 mg/m^3
Crystalline Silica		
(Respirable Dust)	0.1 mg/m^3 (10 mg of respirable dust/m^3)/ (%silica+2)	
Chromates	0.1 mg/ (CrO3)/m^3	0.005 mg (Cr) m^3
Nuisance Dust		
(Respirable Dust)	5 mg/m^3	5 mg/m^3
(Total Dust)	15 mg/m^3	10 mg/m^3

Trace Elements

Masonry cement is made from materials mined from the earth and is processed using energy provided by fuels. Trace amounts of naturally occurring and potentially harmful chemicals might be detected during chemical analysis. Masonry cement may contain up to 0.75% insoluble residue. Trace constituents include calcium oxide (also known as free lime or quick lime), free magnesium oxide, potassium and sodium sulfate compounds, free crystalline silica, chromium compounds, and nickel compounds. A small fraction of free crystalline silica is also present in limestone.

SECTION III - HAZARDS IDENTIFICATION

Emergency Overview

Masonry 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 of sufficient duration to wet masonry cement can cause serious, potentially irreversible tissue (skin or eye) destruction in the form of chemical (caustic) burns, including third degree burns. The same type of tissue destruction can occur if wet or moist areas of the body are exposed for sufficient duration to dry masonry 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 or inflammation.
  - Eye contact by larger amounts of dry powder or splashes of wet masonry cement may cause effects ranging from moderate eye irritation to chemical burns and blindness. Such exposures require immediate first aid (see Section 4) and medical attention to prevent significant damage to the eye.
- **Effects resulting from skin contact:**
  - Discomfort or pain cannot be relied upon to alert a person to a hazardous skin exposure. Consequently, the only effective means of avoiding skin injury or illness involves minimizing skin contact, particularly contact with wet cement. Exposed persons may not feel discomfort until hours after the exposure has ended and significant injury has occurred.
  - Exposure to dry masonry cement may cause drying of the skin with consequent mild irritation or more significant effect attributable to aggravation of the other conditions. Dry masonry cement contacting wet skin or exposure to moist or wet masonry cement may cause more severe skin effects including thickening, cracking or fissuring of the skin. Prolonged exposure can cause severe skin damage in the form of (caustic) chemical burns.
  - Some individuals may exhibit an allergic response upon exposure to masonry cement, possibly due to trace amounts of chromium. 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. Other persons may first experience this effect after years of contact with masonry cement products.
- **Effects resulting from inhalation:**
  - Masonry cement contains trace amounts of free crystalline silica. Prolonged exposure to respirable free crystalline silica may aggravate other lung conditions. It also may cause delayed lung injury including silicosis, a disabling and potentially fatal lung disease, and/or other diseases. (Also see "Carcinogenic potential" below.)
  - Exposure to masonry cement 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. Masonry cement should not be eaten.
- **Carcinogenic potential:**
  - Masonry cement is not listed as a carcinogen by NTP, OSHA, or IARC. It may, however, contain trace amounts of substances listed as carcinogens by these organizations. Crystalline silica, a trace level contaminant in masonry cement, is now classified by IARC as a known human carcinogen (Group 1). NTP has characterized respirable silica as "reasonably anticipated to be [a] carcinogen."
- **Medical conditions which may be aggravated by inhalation or dermal exposure:**
  - Pre-existing upper respiratory and lung diseases.
  - Unusual (hyper) sensitivity to hexavalent chromium (chromium+6) salts.

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

Inhalation of Airborne Dust

- Remove to fresh air. Seek medical help if coughing and other symptoms do not subside. ("Inhalation" of gross amounts of masonry cement requires immediate medical attention.)

Ingestion

- Do not induce vomiting. If conscious, have the person drink plenty of water and call a physician immediately.

SECTION V - FIRE & EXPLOSION DATA

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. (Although masonry cement possesses no fire-related hazards, a self-contained breathing apparatus is recommended to limit exposure to combustion products when fighting any fire.)
Hazardous combustion products	None
Unusual fire and explosion hazards	None

SECTION VI - 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 an appropriate container. Allow the material to "dry" before disposal. Do not attempt to wash masonry cement down drains.
- Dispose of waste material according to local, state and federal regulations.

SECTION VII - HANDLING AND STORAGE

- Keep masonry 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 CONTROLS/PERSONAL PROTECTION

Skin protection

- Prevention is essential to avoiding potentially severe skin injury. Avoid contact with unhardened (wet) masonry cement products. If contact occurs, promptly wash affected area with soap and water. Where prolonged exposure to unhardened masonry cement products might occur, wear impermeable clothing and gloves to eliminate skin contact. Where required, wear boots that are impermeable 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 masonry cement or 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 maintain exposure 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 dust or wet cement 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 masonry cement or fresh cement products.

SECTION IX - PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Gray powder
Odor	No distinct odor
Physical state	Solid (powder)
pH (in water) (ASTM D 1293-95)	12 to 13
Solubility in water	Slightly soluble (0.1 to 1.0%)
Vapor pressure	Not applicable
Vapor density	Not applicable
Boiling point	Not applicable (i.e. >1000°C)
Melting point	Not applicable
Specific gravity (H_2O = 1.0)	2.88
Evaporation rate	Not applicable

SECTION X - STABILITY AND REACTIVITY

Stability

Stable.

Conditions to avoid

Unintentional contact with water.

Incompatibility

Wet masonry cement is alkaline. As such it is incompatible with acids, ammonium salts and aluminum metal.

Hazardous decomposition

Will not spontaneously occur. Adding water results in hydration and produces (caustic) calcium hydroxide.

Hazardous polymerization

Will not occur.

SECTION XI - TOXICOLOGICAL INFORMATION

Not available.

SECTION XII - ECOLOGICAL INFORMATION

Ecotoxicity

No recognized unusual toxicity to plants or animals.

Relevant physical and chemical properties

(See Sections 9 and 10.)

SECTION XIII - DISPOSAL

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

SECTION XIV - TRANSPORTATION DATA

Hazardous materials description/proper shipping name	Masonry 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 XV - OTHER REGULATORY INFORMATION

Status under USDOL-OSHA Hazard Communication Rule, 29 CFR 1910-1200

Masonry 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 and 312

Masonry 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 substances in masonry cement are on the TSCA inventory list.

Status under the Federal Hazardous Substances Act

Masonry cement is a "hazardous substance" subject to statutes promulgated under the subject act.

Status under California Proposition 65

This product contains chemicals (trace metals) known to the State of California to cause cancer, 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.

Status under WHMIS

Masonry cement is considered to be a hazardous material under the Hazardous Products Act as defined by the Controlled Products Regulations (Class E-Corrosive Material) and is therefore subject to the labeling and MSDS requirements of the Workplace Hazardous Materials Information System (WHMIS).

SECTION XVI - OTHER INFORMATION

Prepared by:

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Approved by:

Calvin Parker

Approval date or Revision date:

July 2004

MSDS number:

N.A.

Other important information

Masonry cement should only be used by knowledgeable persons. A key to using the product safely requires the user to recognize that masonry cement chemically reacts with water, and that some of the intermediate products of this reaction (that is, those present while a masonry cement product is "setting") pose a far more severe hazard than does masonry cement itself.

While the information provided in this material safety data sheet is believed to provide a useful summary of the hazards of masonry 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.

In particular, the data furnished in this sheet does not address hazards that may be posed by other materials mixed with masonry cement to produce masonry cement products. Users should review other relevant material safety data sheets before working with this masonry cement or working on masonry cement products, for example, masonry cement concrete.

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