

Material Safety Data Sheet

(Cement-Treated Base)

1. IDENTIFICATION

Chemical Name:	N/A	Chemical Formula:	Mixture
Trade Name:	Cement-Treated Base	Molecular Weight:	N/A
Synonyms:	CTB	DOT Identification No:	None

2. PRODUCT AND COMPONENT DATA

Component(s)	Chemical Name	CAS Registry No.	% (Approx)	Exposure Limits
Aggregates (limestone, granite, traprock)* varies naturally -typically		Mixture	70-90	See section 6 *Composition
contains quartz (crystalline silica).		14808-60-7	>1	
Hydraulic (Portland) Cement		65997-15-1	5-8	
Water		7732-18-5	5-10	

3. PHYSICAL DATA

Appearance and Odor: Gray, granular mixture. Faint, characteristic cement odor.
 Specific Gravity: 2.3 - 3.0, Boiling point (At 1 Atm.): N/A, Vapor Density in Air (Air = 1): N/A, Vapor Pressure (mmHg @ 20°C): Product: N/A Water: 17.5 %Volatile, By Volume (@ 100° F): <10%, Evaporation Rate (at 1Atm. and 25°C; n-butyl acetate = 1): Similar to water Solubility in Water: N/A

4. REACTIVITY DATA

Stability: Stable
 Conditions to Avoid: Avoid contact with incompatible materials (see below).
 Incompatibility (materials to avoid): Strong acids, as wet Portland cement is caustic (pH approximately 12). Limestone ignites on contact with fluorine and is incompatible with acids, alum, ammonium salts, and magnesium. Silica reacts violently with powerful oxidizing agents such as fluorine, boron trifluoride, chlorine trifluoride, manganese trifluoride, and oxygen difluoride yielding possible fire and/or explosions. Silica dissolves readily in hydrofluoric acid producing a corrosive gas - silicon tetrafluoride.
 Hazardous Decomposition Products: Silica-containing respirable dust particles may be generated if hardened product is subjected to mechanical forces such as in demolition work and surface modification (sanding, grooving, chiseling, etc.).
 Hazardous Polymerization: Not known to polymerize

5. FIRE AND EXPLOSION HAZARD DATA

Flashpoint (Method used):	Not flammable
Flammable Limits in Air:	N/A
Extinguishing Agents:	None required
Unusual Fire and Explosion Hazards:	None known

6. TOXICITY AND FIRST AID

EXPOSURE LIMITS (When exposure to this product and other chemicals is concurrent, the exposure limit must be defined in the workplace.) Unless specified otherwise, limits are expressed as eight-hour time-weighted averages (TWA). Limits for cristobalite and tridymite (other forms of crystalline silica) are equal to one-half of the limits for quartz. ABBREVIATIONS: TLV® = threshold limit value of the American Conference of Governmental Industrial Hygienists (ACGIH); MSHA PEL = permissible exposure limit of the Mine Safety and Health Administration (MSHA); OSHA PEL = permissible exposure limit of the Occupational Safety and Health Administration (OSHA); mg/m³ = milligrams of substance per cubic meter of air.

Limestone (Calcium Carbonate): ACGIH TLV® = 10mg/m³; OSHA PEL = 15mg/m³ (total dust), OSHA PEL = 5mg/m³ (respirable fraction), MSHA PEL = 10mg/m³ (total dust).

Other Particulates: 2001 ACGIH TLV® = 10mg/m³ (inhalable/total particulate, not otherwise specified), 2001 ACGIH TLV® = 3mg/m³ (respirable particulate, not otherwise specified); OSHA PEL = 15mg/m³ (total particulate, not otherwise regulated), OSHA PEL = 5mg/m³ (respirable particulate, not otherwise regulated).
Portland Cement: ACGIH TLV® = 10mg/m³; MSHA PEL= 10mg/m³; OSHA PEL = 15mg/m³ (total dust) and 5mg/m³ (respirable fraction); OSHA Proposed PEL = 10mg/m³ (total dust) and 5mg/m³ (respirable).

Respirable Crystalline Silica (SiO₂/quartz): ACGIH TLV® = 0.05mg/m³; MSHA and OSHA PEL = 10 mg/m³ ÷ (%SiO₂ + 2), for respirable dust containing crystalline silica.

Total dust, respirable and nonrespirable: 1973 ACGIH TLV® = 30mg/m³ ÷ (%quartz + 3).

Total Dust: MSHA PEL = 10mg/m³ (for nuisance particulates listed in Appendix E of the 1973 ACGIH TLV® booklet).

Per ACGIH, adverse effects are not likely to occur in the workplace provided exposure levels do not exceed the appropriate TLVs/PELs. However, because of the wide variation in individual susceptibility, lower exposure limits may be appropriate for some individuals including persons with pre-existing medical conditions such as those described below.

Medical Conditions Aggravated by Exposure: Contact with wet cement may aggravate existing abnormal skin conditions. Inhaling dust may aggravate existing respiratory system disease(s) and/or dysfunctions. Dust may aggravate existing skin and/or eye conditions.

Primary Route(s) of Exposure:

Inhalation Skin Ingestion

Acute Toxicity - Note: This product is normally mixed, transported, and used only when wet. This reduces the potential for dust exposure. After the product has dried and hardened, further handling or processing may generate dust. Wet cement is caustic (pH approximately 12) and hygroscopic (absorbs and retains water).

EYE CONTACT: Contact may result in chemical (caustic) burns and eye injury. Concrete dust may be irritating.

SKIN CONTACT: Contact with wet cement may cause abrasion of the skin and contact dermatitis (cement dermatitis), the symptoms of which may include (but are not limited to) reddening, irritation, and rash. More severe effects, including chemical (caustic) burns and skin ulcers may occur. Concrete dust may be instating. Hydraulic (Portland) cement may contain trace amounts of hexavalent chromium. Hexavalent chromium has been associated in some individuals with causing allergic skin reactions which may be manifested as contact dermatitis and skin ulcerations.

Individuals who develop allergies to skin sensitizers, such as hexavalent chromium, may experience a reaction upon repeated contact with those compounds. The symptoms of allergic reactions may include (but are not limited to) reddening of the skin, rash, and irritation. Irritated or broken skin is more likely to develop further complications such as ulcers and infection.

SKIN ABSORPTION: Not expected to be a significant exposure route following short-term exposure.

INGESTION: Direct contact with exposed tissues may result in severe irritation and chemical (alkali) burns.

INHALATION: Dusts may irritate the nose, throat, and respiratory tract. Coughing, sneezing, and shortness of breath may occur following exposures in excess of appropriate exposure limits.

First Aid

EYES: Immediately flush eye(s) with plenty of clean water for at least 15 minutes, while holding the eyelid(s) open. Occasionally lift the eyelid(s) to ensure thorough rinsing. Seek medical attention at once and continue to flush eye(s) until a physician takes charge.

SKIN: Flush skin with clean water for at least 15 minutes. Remove and wash contaminated clothing. Contact a physician if irritation persists or later develops. Burns should be treated as caustic burns.

INGESTION: If person is conscious, give large quantity of water to dilute the stomach contents. Do not attempt to make person vomit unless directed by medical personnel. Get immediate medical attention.

INHALATION: Remove to fresh air. Dust in throat and nasal passages should clear spontaneously. Contact a physician if irritation persists or later develops.

For emergencies, contact _____ (your company's designated person)

Chronic Toxicity

Chronic exposure to wet cement has caused chronic dermatitis, the symptoms of which may include reddening, irritation, and eczematous rashes. Drying, thickening, and cracking of the skin and nails may also occur.

The chronic toxicity effects described above have been associated with exposure to wet cement. If hardened product is subjected to mechanical forces (such as in demolition work) which generate dust particles, exposure to respirable crystalline silica-containing dust is possible.

Prolonged and repeated inhalation of respirable crystalline silica-containing dust in excess of appropriate exposure limits has caused silicosis, a lung disease. Not all individuals with silicosis will exhibit symptoms (signs) of the disease. However, silicosis can be progressive, and symptoms can appear at any time, even years after exposure has ceased. Symptoms of silicosis may include, but are not limited to, the following: shortness of breath; difficulty breathing with or without exertion; coughing; diminished work capacity; diminished chest expansion; reduction of lung volume; right heart enlargement and/or failure. Smoking may increase the risk of developing lung disorders, including emphysema and lung cancer. Persons with silicosis have an increased risk of pulmonary tuberculosis infection.

Respirable dust containing newly broken silica particles has been shown to be more hazardous to animals in laboratory tests than respirable dust containing older silica particles of similar size. Respirable silica particles which had aged for sixty days or more showed less lung injury in animals than equal exposures of respirable dust containing newly broken particles of silica.

There are reports in the literature suggesting that excessive crystalline silica exposure may be associated with adverse health effects involving the kidney, scleroderma (thickening of the skin caused by swelling and thickening of fibrous tissue) and other autoimmune disorders. However, this evidence has been obtained primarily from case reports involving individuals working in high exposure situations or those who have already developed silicosis; and therefore, this evidence does not conclusively prove a causal relationship between silica or silicosis and these adverse health effects. Several studies of persons with silicosis also indicate an increased risk of developing lung cancer, a risk that increases with the duration of exposure. Many of these studies of silicotics do not account for lung cancer confounders, especially smoking.

Cement-Treated Base is not listed as a carcinogen by the International Agency for Research on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA). In October 1996, an IARC Working Group re-assessing crystalline silica, a component of this product, designated respirable crystalline silica as carcinogenic (Group 1). The NTP's Report on Carcinogens, 9th edition, lists respirable crystalline silica as a "known human carcinogen." In year 2000, the American Conference of Governmental Industrial Hygienists (ACGIH) listed respirable crystalline silica (quartz) as a suspected human carcinogen (A-2). These classifications are based on sufficient evidence of carcinogenicity in certain experimental animals and on selected epidemiological studies of workers exposed to crystalline silica.

7. PERSONAL PROTECTION AND CONTROLS

Respiratory Protection

Ordinarily not required when product is wet. For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.1 mg/m³, a NIOSH approved dust respirator is recommended. For respirable quartz levels that exceed or are likely to exceed an 8-hr TWA of 0.5 mg/m³, a NIOSH approved HEPA filter respirator is recommended. If respirable quartz levels exceed or are likely to exceed an 8-hr TWA of 5 mg/m³, a NIOSH approved positive pressure, full face respirator or equivalent is recommended. Respirator use must comply with applicable MSHA or OSHA standards, which include provisions for a user training program, respirator repair and cleaning, respirator fit testing, and other requirements.

Ventilation

Ordinarily not required when working with wet product. General or local exhaust ventilation as required to maintain exposures below appropriate exposure limits. Use product only in well-ventilated areas.

Skin Protection

Waterproof gloves, rubber boots, and clothing sufficient to protect the skin from contact with fresh cement should be worn. Clothing saturated from contact with wet cement should be removed promptly to prevent continued contact with skin.

Eye Protection

Safety glasses with side shields should be worn as minimum protection. Chemical safety goggles or face shields are strongly recommended to prevent eye contact with materials, particularly when splashing is possible. Dust goggles should be worn when excessively (visible) dusty conditions are present or are anticipated due to working with hardened product.

Hygiene

Skin should be kept free of wet cement. Wash hands thoroughly before eating, smoking, and using toilet facilities. After working with cement, workers should shower with soap and water. Laundering clothing between uses is recommended.

Other Control Measures

Ample clean water should always be readily available for skin and (emergency) eye washing. Respirable dust levels should be monitored regularly for activities, which generate dust from hardened product. Dust levels in excess of appropriate exposure limits should be reduced by all feasible engineering controls, including (but not limited to) wet suppression, ventilation, process enclosure, and enclosed employee work stations.

8. STORAGE AND HANDLING PRECAUTIONS

Follow personal protection and controls set forth in Section 7 of this MSDS when handling this product. Every attempt should be made to avoid skin and eye contact with wet cement. Respirable crystalline silica-containing dust may be generated when hardened product is subjected to mechanical forces, such as in demolition work and surface treatment (sanding, grooving, chiseling, etc.).

Do not store near food and beverages or smoking materials.

9. SPILL, LEAK AND DISPOSAL PRACTICES

Steps to be Taken in Case Material is Released or Spilled

Persons involved in cleanup processes should first observe precautions defined in Section 7 of this MSDS. Wet product should be removed from roads or other surfaces where it may interfere with traffic.

Prevent spilled materials from inadvertently entering streams, drains, or sewers.

For emergencies, contact _____
(your company's designated emergency contact)

Waste Disposal Method

Dispose of waste materials only in accordance with applicable federal, state, and local laws and regulations.

10. TRANSPORTATION

DOT Hazard Classification: None

Placard Required: None

Label Required: Label as required by the OSHA Hazard Communication Standard [29 CFR 1910.1200 (f)] and applicable state and local laws and regulations.

For Further Information Contact: Place here the name, address, and telephone number of the operator or responsible party who can provide more info about the hazardous chemical.

Date of Preparation:

Emergency Information: Your company's designated emergency contact.

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