



1. CHEMICAL PRODUCT & COMPANY IDENTIFICATION

Supplier: Name: Hawaiian Cement. Address: 99-1300 Halawa Valley St. Aiea, HI 96701 Telephone: 808-532-3400

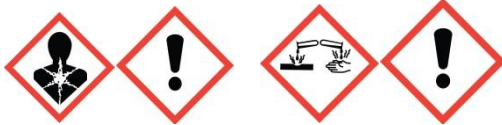
Product Identifier: UltraMortar, SuperMortar, Masonry Cement, Mortar Cement, Plastic Cement, Hydraulic Cement, Blended Cement, Pozzolan Cement, Type IP, Type I(PM), Type M Cement, Type S Cement, Type N Cement.

Note: This SDS covers many products. Individual composition of hazardous constituents will vary.

2. HAZARD IDENTIFICATION

Emergency Overview: Hydraulic cement is a solid, light gray to off white, odorless powder, that poses little immediate hazard. Cement is not combustible or explosive A single short-term exposure to the dry powder is not likely to cause serious harm. However, exposure of sufficient duration to wet hydraulic cement can cause serious, potentially irreversible tissue (eye, skin, respiratory tract) 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 hydraulic cement.

Potential Health Effects:



EYE CONTACT (acute/chronic): Exposure to airborne dust may cause immediate or delayed irritation or inflammation. Eye contact by larger amounts of dry powder or splashes of wet hydraulic 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.

INHALATION (acute): Breathing dust may cause nose, throat or lung irritation and choking. The described effect depends on the degree of exposure.

INHALATION (chronic): Prolonged or repeated exposure may cause lung injury including silicosis. This product may contain crystalline silica. Crystalline silica has been classified by IARC as a known human carcinogen. Some human studies indicate potential for lung cancer from crystalline silica exposure. Risk of injury depends on duration and level of exposure. Long term exposures, which results in silicosis may result in additional health effects.

SKIN CONTACT (acute/chronic): Cement may cause dry skin, discomfort, irritation, severe burns and dermatitis. Exposure of sufficient duration to wet hydraulic cement, or dry cement on moist areas of the body, can cause serious, potentially irreversible damage to eye, skin, respiratory and digestive tracts due to chemical (caustic) burns, including third degree burns. A skin exposure may be hazardous even if there is no pain or discomfort. Dermatitis symptoms include: redness, itching, rash, scaling and cracking.

INGESTION (acute/chronic): Do not ingest cement. Although ingestion of small quantities of cement is not known to be harmful, large amounts may cause chemical burns in the mouth, throat, stomach, and intestinal tract.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Table with 3 columns: Component Name, %, CAS No. Rows include Portland Cement, Limestone, and Fly Ash.

Table with 3 columns: Ingredient, Range, and Reference. Rows include Calcium Oxide, Calcium Sulfate, Crystalline Silica, and Chromates.

4. FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes thoroughly with water. Continue flushing eye for at least 15 minutes, including under lids, to remove all particles. Call physician immediately.

INHALATION: Remove to fresh air. Seek medical help if discomfort, coughing or other symptoms do not subside. ("Inhalation" of gross amounts of hydraulic cement requires immediate medical attention.)

SKIN CONTACT: 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.

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

5. FIREFIGHTING MEASURES

General Hazard: Avoid breathing dust. Flashpoint and Method: Hydraulic cement is non-combustible nor explosive. Flammable Limits: Not combustible. Autoignition Temperature: Not applicable. Firefighting Instructions: Treat adjacent material. Firefighting Equipment: This product is not a fire hazard. Self-contained breathing apparatus is recommended to limit exposures to smoke from any combustion source. Hazardous Combustion Products: Not applicable.

6. ACCIDENTAL RELEASE MEASURES

General: Remove spilled material to limit potential harm. 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 protection 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 wash hydraulic cement down sewage and drainage systems or into bodies of water (lakes & streams).

Dispose of waste material according to local, state and federal regulations.

7. HANDLING AND STORAGE

General: Keep ash dry until used.

Crushing, cutting or grinding hardened concrete or other crystalline silica bearing materials will release respirable crystalline silica. Avoid actions that cause dust to become airborne during cleanup such as dry sweeping or using compressed air. Use PPE as described in section 8.

Clothing: Promptly remove and clean clothing that is dusty or wet with cement fluids. Thoroughly wash skin after exposure to dust or wet cement mixtures or fluids.

Storage Temperature: Unlimited. Storage Pressure: Unlimited.

Note: Crystalline silica most commonly exists as quartz. If quartz is heated above 870°C it can change to a form of crystalline silica known as tridymite. If quartz is heated above 1470°C, it can change to a form of crystalline silica known as cristobalite. Both tridymite and cristobalite forms of crystalline silica are more fibrogenic than quartz. The OSHA PEL for tridymite and cristobalite is

one half the PEL for quartz; the ACGIH TLV for crystalline silica as tridymite and cristobalite is 0.05 mg/m³ (R).

Hazardous Polymerization: None.

Hazardous Decomposition: None.

8. EXPOSURE CONTROL & PERSONAL PROTECTION

General Controls Use exhaust ventilation to maintain dust levels below exposure limits in workplaces with poor ventilation and dusty conditions.

Component Name	EXPOSURE LIMITS	
	OSHA PEL TWA	ACGIH TLV TWA
Portland Cement (CAS 65997-15-1)*		
(Respirable Dust)	5 mg/m ³	
(Total Dust)	15 mg/m ³	10 mg/m ³
Calcium Carbonate (Limestone)		
(Respirable dust)	5 mg/m ³	
(Total Dust)	15 mg/m ³	10 mg/m ³
Fly Ash (Respirable Dust)	5 mg/m ³	
(Total Dust)	15 mg/m ³	10 mg/m ³
Calcium Oxide (Total Dust)	5 mg/m ³	2 mg/m ³
Calcium Sulfate*		
(Respirable Dust)	5 mg/m ³	
(Total Dust)	15 mg/m ³	10 mg/m ³
Crystalline Silica (Quartz)		0.05 mg/m ³
Quartz (Respirable)	10 mg/m ³ / (%SiO ₂ +2)	
Quartz (Total Dust)	30 mg/m ³ / (%SiO ₂ +2)	
Chromates	0.1 mg (CrO ₃) / m ³	0.05 mg(Cr)/m ³
Nuisance Dust		
(Respirable)	5 mg/m ³	3 mg/m ³
(Total / Inhalable)	15 mg/m ³	10 mg/m ³

*This value is for particulate matter containing no asbestos and < 1% crystalline silica.



Personal Protection RESPIRATORY PROTECTION: Under ordinary conditions no respiratory protection is required. Wear a NIOSH approved respirator when exposed to dust above exposure limits.

EYE PROTECTION: Wear ANSI approved glasses or safety goggles when handling dust or wet cement to prevent contact with eyes. Wearing contact lenses when using cement, under dusty conditions, is not recommended.

SKIN PROTECTION: Wear gloves, boot covers and protective clothing impervious to water to prevent skin contact. Remove clothing and protective equipment that becomes saturated with wet cement and immediately wash exposed areas to prevent chemical burns.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Gray, tan or white powder.		
Odor:	No distinct odor.		
Physical State:	Solid (powder).	Specific Gravity:	3.0 - 3.15
Vapor Pressure:	NA	Vapor Density:	NA
Solubility in Water:	Slight (0.1 - 1.0%)	Evaporation Rate:	NA
pH (in water):	12 - 13	Boiling Point:	NA
Freezing Point:	None, solid.	Viscosity:	None, solid.

10. STABILITY AND REACTIVITY

General: Product is stable. Keep dry until use. Hydraulic cement reacts with water forming silicates and calcium hydroxide.

Conditions to Avoid: Avoid contact with incompatible materials or unintentional contact with water.

Incompatibility: Wet hydraulic cement is alkaline. As such, it is incompatible with acids, ammonium salts and aluminum metal. Cement dissolves in hydrofluoric acid and produces corrosive silicon tetra-fluoride gas. Silicates react violently with powerful oxidizers such as fluoride, boron tri-fluoride, manganese tri-fluoride and oxygen di-fluoride.

11. TOXICOLOGICAL INFORMATION

Hydraulic cement is not a toxic material.

12. ECOLOGICAL INFORMATION

Ecotoxicity: No recognized unusual toxicity to plants or animals. For relevant physical and chemical properties, see Sections 9 and 10 above.

13. DISPOSAL CONSIDERATIONS

Dispose of waste materials and containers in compliance with applicable local, state and federal regulations. (Since hydraulic cement is stable, uncontaminated material may be saved for future use.)

14. TRANSPORT INFORMATION

Hydraulic cement is not a hazardous material under U.S. Department of Transportation (DOT) regulations. Subsequently, requirements for hazard class, identification number and label text are not applicable.

15. REGULATORY INFORMATION

OSHA Hazard Communication Rule, 29 CFR 1910.1200: Hydraulic cement is considered by OSHA to be a "hazardous chemical" under this regulation and should be included in the employer's hazard communication program.

CERCLA/SUPERFUND, 40 CFR 117 and 302: Not listed.

SARA (Title III), Sections 311 and 312 Hazard Category: Hydraulic cement qualifies as a "hazardous substance" with delayed health effects.

SARA (Title III), Section 313: Not subject to the reporting requirements.

Toxic Substance Control Act (TSCA): Some constituents identified in hydraulic cement are listed on the TSCA Inventory.

Federal Hazardous Substance Act: Hydraulic cement is a "hazardous substance" subject to statutes promulgated under the subject act.

California Proposition 65: Hydraulic cement contains chemicals (trace metals and crystalline silica) known to the state of California to cause cancer, birth defects or other reproductive harm.

Workplace Hazardous Materials Information System (WHMIS): Products containing crystalline silica and calcium carbonate are classified as D2A, E and are subject to WHMIS requirements. WHMIS <http://www.hc-sc.gc.ca/whmis>

16. OTHER INFORMATION

Abbreviations:

ACGIH	American Conference of Governmental Industrial Hygienists
CAS No.	Chemical Abstract Service number
CERCLA	Comprehensive Environmental Response, Compensation and Liability Act
CFR	Code of Federal Regulations
CL	Ceiling Limit
DOT	U.S. Department of Transportation
>	greater than
HEPA	High-efficiency Particulate Air
HMIS	Hazardous Materials Information System
IARC	International Agency for Research on Cancer
LC ₅₀	Lethal Concentration
LD ₅₀	Lethal Dose
mg/m ³	milligrams per cubic meter
MSHA	Mine Safety and Health Administration
NA	Not Applicable
NFPA	National Fire Protection Association
NIOSH	National Institute for Occupational Safety and Health
NTP	National Toxicology Program
OSHA	Occupational Safety and Health Administration
PEL	Permissible Exposure Limit
pH	negative log of hydrogen ion
PPE	Personal Protective Equipment
R	Respirable Particulate
RCRA	Resource Conservation and Recovery Act
SARA	Superfund Amendments and Reauthorization Act

T Total Particulate
TDG Transportation of Dangerous Goods
TLV Threshold Limit Value
TWA Time Weighted Average (8 hour)
WHMIS Workplace Hazardous Materials Information System

Information in this SDS is believed to be current and accurate at the time provided. It is the user's obligation to determine the conditions of safe use of this product.