



Material Safety Data Sheet

SECTION 1 COMPANY AND PRODUCT IDENTIFICATION

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| PRODUCT NAME Permanente Type I-II, III, V, Pronto, Coarse Grind, Class G, Premium | | Revised: 29 June 06 |
| SYNONYMS Portland-Pozzolan cement; blended hydraulic cement, Product code 102 | | |
| MANUFACTURER Hanson Permanente Cement | EMERGENCY PHONE NUMBER 800-424-9300 CHEMTREC® | |

SECTION 2 COMPOSITION & INFORMATION ON INGREDIENTS

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| OSHA / MSHA REGULATORY STATUS This product is considered to be hazardous under the OSHA and MSHA Hazard Communication Standards. | | |
| HAZARDOUS COMPONENTS* | CAS NUMBER | % BY WEIGHT |
| Portland cement | 65997-15-1 | ~ 95 |
| Gypsum | 13397-24-5 | ~ 5 |
| Crystalline Silica (Quartz) | 14808-60-7 | <0.1 |

SECTION 3 HAZARDS IDENTIFICATION

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| EMERGENCY OVERVIEW Odorless, light gray powder. Non flammable. Eye or skin contact with wet cement may cause irritation or chemical burns. Dust from dry cement powder may cause skin, eye or respiratory tract irritation. |
| PHYSICAL HAZARDS None. |
| PRIMARY ROUTES OF EXPOSURE Primary routes of exposure are inhalation, eye and skin contact. |
| POTENTIAL EFFECTS AND SYMPTOMS OF ACUTE EXPOSURE Short term skin contact with wet cement may result in minor irritation; however eye contact may result in moderate irritation to chemical burns. Contact with dust from dry cement may cause eye and skin irritation; inhalation may cause upper respiratory tract irritation. Symptoms may include irritation and tearing of the eyes, irritation and redness of exposed skin and temporary upper respiratory discomfort with coughing and sneezing. A rare "acute" form of silicosis may develop from inhalation of extremely high concentrations of crystalline silica over a period of several months to five years. |
| POTENTIAL EFFECTS AND SYMPTOMS OF CHRONIC EXPOSURE Wet concrete exhibits caustic, abrasive and dehydrating properties. Irritation or pain may be delayed for several hours and cannot be relied upon as an indication of exposure. Lengthy skin contact with wet concrete may result in chemical burns or skin ulcers. These injuries may be |

very slow healing and require skin grafts. Eye contact with wet concrete may result in irritation, burns and blindness. Long term skin contact with concrete dust may result in irritation or dermatitis; eye contact may result in irritation or burns. Inhalation of dust from dry ingredients may cause irritation to the moist membranes of the nose, throat and upper respiratory tract. Portland cement may contain trace amounts of hexavalent chromium, which is linked with allergic sensitization reactions in some individuals. These reactions may lead to contact dermatitis and skin ulceration.

Repeated or prolonged inhalation of high concentrations of respirable particles which contain crystalline silica may cause silicosis, an incurable lung disease. Silicosis is a scarring of the lungs which generally develops gradually over a period of years and may progress even after exposure has stopped. Early symptoms may be so mild that they are not noticed. In advanced cases, lung capacity is severely reduced and the risk of infectious diseases such as tuberculosis increases. Early symptoms of silicosis include coughing and shortness of breath on exercising; symptoms may progress to pain in the chest, loss of appetite, fatigue, weakness, inability to work. Complications may lead to respiratory or heart failure. Chronic silicosis generally occurs after 10 or more years of overexposure.

Studies indicate that people with silicosis have an increased risk of lung cancer; however, many of the studies do not take into account additive factors such as smoking.

CARCINOGENICITY

Portland cement is not listed as a carcinogen by the International Agency on Cancer (IARC), the National Toxicology Program (NTP), or the Occupational Safety and Health Administration (OSHA). Classifications of crystalline silica are based on experimental studies with animals and epidemiologic studies of workers exposed to respirable crystalline silica.

- IARC: classified as Group 1, a substance known to cause cancer to humans
- NTP: classified as a known human carcinogen
- OSHA: not classified as a carcinogen
- ACGIH: classified as suspect human carcinogen
- NIOSH: classified as a potential occupational carcinogen

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

Individuals with skin, eye or respiratory disorders or skin sensitization reactions may find these conditions aggravated by exposure to wet cement or cement dust.

SECTION 4 FIRST AID MEASURES

INHALATION

Move exposed individual to fresh air. Dust in throat and nasal passages should clear naturally by coughing, sneezing and nasal discharge. Obtain medical attention if symptoms persist or develop later.

EYE CONTACT

Do not allow individual to rub eyes. Flush gently under running water for 15 minutes or longer, making sure that the eyelids are held open. Other than washing with water, do not attempt to remove material from eyes. Obtain medical attention for eye contact with wet cement.

SKIN CONTACT

Wash affected areas with water and soap. Remove contaminated clothing and wash before re-use. If irritation persists or develops later, obtain medical attention.

INGESTION
 Ingestion is not a common route of occupational exposure. If swallowed and irritation or discomfort occurs, obtain medical attention.

SECTION 5 FIRE FIGHTING MEASURES

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| FLASH POINT Not combustible. | FLAMMABLE LIMITS Not applicable. |
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EXTINGUISHING AGENTS
 Not combustible. Use extinguishing agent appropriate for surrounding flammable materials.

UNUSUAL FIRE AND EXPLOSION HAZARDS
 None.

SECTION 6 ACCIDENTAL RELEASE MEASURES

PERSONAL PRECAUTIONS
 Safety glasses with side shields, gloves, clothing with long sleeves and long pants, and appropriate respiratory protection should be used to protect cleanup personnel against dust. Alkali resistant gloves, impervious clothing and safety glasses with side shields should be used by cleanup personnel for wet cement releases; for large spills, waterproof boots and goggles should be used.

SPILL AND LEAK PROCEDURES
 Keep unprotected personnel out of the area. Contain spills and wash water to prevent run-off into public waterways. Do not dry sweep spilled dusty material.

SECTION 7 HANDLING AND STORAGE

HANDLING PRECAUTIONS
 Use personal protective equipment to avoid direct contact with cement; remove contaminated clothes as soon as possible. Dust may be generated during handling or mixing dry powder or from cutting, breaking or crushing hardened material. Use wet cutting methods when possible.

RECOMMENDED STORAGE CONDITIONS
 Store away from moisture, acids and other incompatible materials.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

| REGULATORY PERMISSIBLE EXPOSURE LIMITS | | | |
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| COMPONENT | <u>Cal/OSHA PEL</u> | <u>OSHA PEL</u> | <u>MSHA PEL</u> |
| Crystalline silica (quartz) CAS# 14808-60-7 | | | |
| *Respirable | 0.1 mg/m ³ * | ---- | ---- |
| **Total | 0.3mg/m ³ ** | ---- | ---- |
| Respirable Dust containing 1% or more crystalline silica (quartz) | ---- | $\frac{(10 \text{ mg/m}^3)}{(\% \text{SiO}_2 + 2)}$ | $\frac{(10 \text{ mg/m}^3)}{(\% \text{SiO}_2 + 2)}$ |
| Total Dust containing 1% or more crystalline silica (quartz) | ---- | $\frac{(30 \text{ mg/m}^3)}{(\% \text{SiO}_2 + 2)}$ | $\frac{(30 \text{ mg/m}^3)}{(\% \text{SiO}_2 + 2)}$ |

| <i>COMPONENT</i> | <i>Ca/OSHA PEL</i> | <i>OSHA PEL</i> | <i>MSHA PEL</i> |
|---|--|--|------------------------|
| Portland Cement CAS # 65997-15-1 *Respirable Dust **Total Dust (1)Million particles per cubic foot | 5 mg/m ^{3*} 10 mg/m ^{3**} | 5 mg/m ^{3*} 15 mg/m ^{3**} | 30 m.p.p.c.f. (1) |
| Gypsum CAS # 13397-24-5 *Respirable Dust **Total Dust | ---- | 5 mg/m ^{3*} 15 mg/m ^{3**} | 15 mg/m ^{3**} |

| <i>OTHER GUIDELINES</i> | | |
|--|--|---|
| <i>COMPONENT</i> | <i>ACGIH TLV</i> | <i>NIOSH REL</i> |
| Portland Cement CAS # 65997-15-1 Crystalline silica (quartz) CAS# 14808-60-7 Gypsum CAS # 13397-24-5 | 10 mg/m ^{3**} 0.025 mg/m ^{3*} ---- | 5 mg/m ^{3*} 0.05 mg/m ^{3*} 5 mg/m ^{3*} |

ENGINEERING CONTROLS

When mixing or handling dry cement or cutting, breaking or sanding hardened concrete, use general ventilation, local exhaust and/or wet suppression methods to maintain exposures below allowable exposure limits.

RESPIRATORY PROTECTION

The need for respiratory protection should be evaluated by a qualified professional. The use of respirators for controlling exposures in excess of the PEL must comply with OSHA and MSHA requirements for medical surveillance, respirator fit testing, repair and cleaning and user training.

EYE PROTECTION

Safety glasses with side shields should be worn as minimum protection. Goggles or full-face protection should be worn during pouring or other activities where splashing may endanger eyes or when dusty conditions are present or are anticipated.

SKIN PROTECTION

Use gloves to provide hand protection from cement. In very dusty conditions, clothing with long sleeves will provide skin protection. Alkali resistant gloves, clothing with long sleeves and long pants should be used to prevent contact with wet cement; waterproof boots high enough to prevent cement from entering should be worn when workers will be standing in wet cement. Contaminated work clothing should be washed after use.

ADDITIONAL PROTECTIVE MEASURES

In dusty areas, air monitoring for dust and quartz should be conducted regularly. Airborne 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.

| SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES | |
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| <i>APPEARANCE</i> Powder | <i>SPECIFIC GRAVITY</i> 3.15 |
| <i>COLOR</i> Gray | <i>EVAPORATION RATE</i> Not applicable. |
| <i>ODOR</i> None. | <i>VAPOR DENSITY (AIR = 1)</i> Not applicable. |

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| BOILING POINT Not applicable. | pH (in water) 12 to 13 |
| VAPOR PRESSURE Not applicable. | SOLUBILITY IN WATER Slightly soluble (0.1 to 1.0%) |

SECTION 10 STABILITY AND REACTIVITY

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| STABILITY Stable. |
| INCOMPATIBILITY Dry cement reacts slowly with water. Wet cement may react with acids, aluminum and ammonium salts. |
| HAZARDOUS DECOMPOSITION PRODUCTS None. |
| HAZARDOUS POLYMERIZATION Does not polymerize. |
| CONDITIONS TO AVOID Keep dry until used. Avoid contact with incompatible compounds. |

SECTION 11 TOXICOLOGICAL INFORMATION

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| ACUTE TOXICITY DATA |
| Animal tests and epidemiologic studies of workers indicate an increased risk of lung cancer from chronic exposure to respirable crystalline silica; this effect was more pronounced in those with silicosis. However, many of the studies did not account for effects of smoking or other confounding exposures. In laboratory animal tests, dust containing newly broken particles of respirable silica particles caused greater lung injury than equal exposures to particles aged for sixty days or more. |

SECTION 12 ECOLOGICAL INFORMATION

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| ECOLOGICAL DATA May be toxic to aquatic life due to high pH in water. |
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SECTION 13 DISPOSAL CONSIDERATIONS

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| WASTE DISPOSAL Dispose of waste product and unused product in compliance with federal, state and local requirements. Used material which has become contaminated, may have significantly different characteristics based on the contaminant and should be evaluated accordingly. |
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SECTION 14 TRANSPORT INFORMATION

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| DOT HAZARD CLASS None. |
| DOT PLACARD None. |

| SECTION 15 REGULATORY INFORMATION | |
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| <i>US FEDERAL REGULATIONS</i> | |
| <i>CERCLA 302: REPORTABLE QUANTITIES</i> | |
| Portland cement is not listed. | |
| <i>EPCRA 370: HAZARD CATEGORY</i> | |
| Hazardous substance with delayed health effects. | |
| <i>EPCRA 372: TRI REPORTING</i> | |
| Portland cement is not listed. | |
| <i>TSCA INVENTORY</i> | |
| Listed. | |
| <i>STATE REGULATIONS</i> | |
| <i>COMPONENT</i> | <i>STATE REGULATORY LISTS</i> |
| Crystalline Silica, quartz 14808-60-7 | CA, FL, MA, MN, NJ, PA |

| SECTION 16 OTHER INFORMATION |
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| For further information on this product contact Hanson Permanente Cement |

NOTICE: Hanson Permanente Cement believes that the information contained in this Material Safety Data Sheet is accurate. The suggested procedures are based on experience as of date of publication. They are not necessarily all-inclusive or fully adequate in every circumstance. Also, the suggestions should not be confused with nor followed in violation of applicable laws, regulations, rules, or insurance requirements.

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