

Ergon Armor **Revision Number:** 1.001
Issue Date: 01/18/2012

1. PRODUCT AND COMPANY IDENTIFICATION

Product name: PENNTROWEL® UT500 HD **ID(s):**
POWDER

Product type: Powder component (sand, aggregate, cement mixture) of a 4-part polyurethane resin floor system **Region:** United States

Company address: Ergon Armor
Corrosion Engineering
300 Stevens Drive, Suite 310
Lester, PA 19113

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2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Physical state: Powder
Color: White-tan/grey
Odor: Odorless

HMIS:

HEALTH: 3*
FLAMMABILITY: 0
PHYSICAL HAZARD: 0
Personal Protection: See MSDS section 8

0=Minimal 1=Slight 2=Moderate 3=Serious 4=Severe
* = Chronic Health Hazard

WARNING! CANCER HAZARD. CONTAINS CRYSTALLINE SILICA, WHICH CAN CAUSE CANCER. Repeated and prolonged inhalation of respirable particles can cause lung cancer and delayed lung damage. MAY CAUSE EYE AND SKIN IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION.

Relevant routes of exposure: Inhalation, skin and eye contact.

Potential Health Effects

Inhalation: Repeated and prolonged inhalation of Quartz may cause silicosis, a disabling lung disease. Symptoms include: cough, shortness of breath, wheezing and impairment of lung function, possibly progressive. Short term extremely heavy exposure can result in acute silicosis. The disease is rapidly progressive with diffuse pulmonary involvement, which may develop within months of initial exposure. Individuals with acute silicosis may suffer an abrupt onset of violent coughing, labored breathing and weight loss. Death has been known to occur within one to two years. Portland Cement and Calcium Hydroxide may be severely irritating to the respiratory tract including, coughing, shortness of breath and bronchitis. Workers with lung disease or limited respiratory capacity should limit exposure to this material.

Skin contact: Contact with Calcium Hydroxide can cause severe burns and blistering, depending on duration of the contact. Contact with skin may also cause dryness, itching and rashes. Repeated or prolonged exposure to Portland Cement can cause an allergic skin reaction in susceptible individuals.

Eye contact: Calcium Hydroxide may produce severe irritation and pain, may induce ulcerations of the corneal epithelium and can cause blindness.

Ingestion: Not a likely source of entry.

Existing conditions aggravated by exposure: Lung conditions, allergies

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).
See Section 11 for additional toxicological information.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Hazardous components	CAS-No.	%
Quartz	14808-60-7	> 80
Portland Cement	65997-15-1	5 - 15
Calcium Hydroxide	1305-62-0	< 10

4. FIRST AID MEASURES

Inhalation: Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention. If nose or airways become inflamed, get medical attention.

Skin contact: Immediately flush with plenty of water. Remove contaminated clothing and shoes. If irritation, pain or other skin trouble occurs, get medical attention. Wash clothing before reuse. Thoroughly clean shoes before reuse.

Eye contact: Immediately flush with plenty of water. Get medical attention.

Ingestion: Wash out mouth with water. Give plenty of water to drink. Get medical attention. NEVER GIVE ANYTHING BY MOUTH TO AN UNCONSCIOUS PERSON.

5. FIRE FIGHTING MEASURES

Flash point: NA

Autoignition temperature: NA

Flammable/Explosive limits - lower: NA

Flammable/Explosive limits - upper: NA

Extinguishing media: Use extinguishing media appropriate to surrounding fire conditions.

Special firefighting procedures: Fire fighters and others who may be exposed to products of combustion should wear full fire fighting turn out gear (full Bunker Gear) and self-contained breathing apparatus (pressure demand NIOSH approved or equivalent). Fire fighting equipment should be thoroughly decontaminated after use.

Unusual fire or explosion hazards: NA

Hazardous combustion products: NA

6. ACCIDENTAL RELEASE MEASURES

Use personal protection recommended in Section 8, isolate the hazard area and deny entry to unnecessary and unprotected personnel.

Environmental precautions: Avoid creating dust in handling, transfer or clean up. Ensure adequate ventilation at all times.

Clean-up methods: Contain spill. Sweep, scoop or preferably vacuum up and collect in suitable containers. Consult a regulatory specialist to determine appropriate state or local reporting requirements, for assistance in waste characterization and/or hazardous waste disposal and other requirements listed in pertinent environmental permits.

7. HANDLING AND STORAGE

Handling: Avoid formation of dust clouds. Do not breathe dust. Keep container closed. Use only with adequate ventilation. Do not get in eyes, on skin or clothing. Wash thoroughly after handling.

Storage: Store in a dry, cool, well-ventilated place.

For information on product shelf life, please review labels on container or check the Technical Data Sheet.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Employers should complete an assessment of all workplaces to determine the need for, and selection of, proper exposure controls and protective equipment for each task performed.

Hazardous components	ACGIH TLV	OSHA PEL	AIHA WEEL	OTHER
Quartz	0.025 mg/m3, TLV-TWA (respirable particle), A2 – Suspected Human Carcinogen	10 mg/m3/(% SiO ₂ +2), PEL-TWA (respirable dust)	None	NIOSH: 0.05 mg/m3 (REL – respirable dust)
Portland Cement	10 mg/m3 TWA	50 mppcf TWA (PEL listed in Mineral Dusts Table under Silicates (less than 1% crystalline silica), Portland Cement)	None	NIOSH: 10 mg/m3 TWA
Calcium Hydroxide	5 mg/m3 TWA	15 mg/m3 TWA	None	NIOSH: 5 mg/m3 TWA

Engineering controls: Investigate engineering techniques to reduce exposures below airborne exposure limits. Provide ventilation if necessary to control exposure levels below airborne exposure limits (listed above). If practical, use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult ACGIH ventilation manual or NFPA Standard 91 for design of exhaust systems.

Respiratory protection: Avoid breathing dust, vapors or mist. When airborne exposure limits are exceeded (see above), use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. Consult respirator manufacturer to determine appropriate type equipment for given application. Observe respirator use limitations specified by NIOSH or the manufacturer. For emergency and other conditions where exposure limit may be significantly exceeded, use an approved full face positive-pressure, self contained breathing apparatus or positive-pressure airline with auxiliary self-contained air supply. Respiratory protection programs must comply with 29 CFR § 1910.134.

Eye/face protection: Where there is potential for eye contact, wear chemical goggles and have eye flushing equipment available.

Skin protection: Wear appropriate chemical resistant protective clothing and chemical resistant gloves to prevent skin contact. Consult glove manufacturer to determine appropriate type glove material for given application. Rinse contaminated skin promptly. Wash contaminated clothing and clean protective equipment before reuse. Wash skin thoroughly after handling.

9. PHYSICAL AND CHEMICAL PROPERTIES

Physical state:	Powder
Color:	White-tan/grey
Odor:	Odorless
Odor threshold:	NA
pH:	~ 11 - 14
Vapor pressure:	NA
Boiling point/range:	NA
Melting point/ range:	NA
Specific gravity:	NA
Vapor density:	NA
Flash point:	NA
Flammable/Explosive limits - lower:	NA
Flammable/Explosive limits - upper:	NA
Autoignition temperature:	NA
Evaporation rate:	NA
Solubility in water:	Slight
Partition coefficient (n-octanol/water):	NA
VOC content:	NA

10. STABILITY AND REACTIVITY

Stability:	This material is chemically stable under normal and anticipated storage and handling conditions.
Hazardous polymerization:	Not known to occur.
Hazardous decomposition products:	None known
Incompatibility:	Hydrofluoric acid will dissolve quartz to form the corrosive gas silicon tetrafluoride.
Conditions to avoid:	NA

11. TOXICOLOGICAL INFORMATION

Toxicological Information

Data available for this material and/or its components are summarized below:

General Product Information:

Cement and lime mixtures are painful eye and skin irritants. Chronic exposure can lead to chemical burning and ulceration of the eyes and contact dermatitis and/or burning of the skin, especially when wet.

Component Data:

Quartz

LD50/LC50:

Not available

CHRONIC:

Chronic inhalation of crystalline silica may cause a progressive pneumoconiosis (silicosis), a form of disabling lung disease (pulmonary fibrosis). Data from animal (rats, guinea pigs, rabbits, monkeys) studies on crystalline forms of silica, using inhalation as well as intratracheal routes of exposure confirm the capacity of free crystalline silica to induce a fibrinogenic response in lungs similar to that seen in man. In addition, experiments in animals have confirmed human experience that the presence of crystalline silica in the lung increased susceptibility to tuberculosis and other lung infections. Crystalline silica is classified as "carcinogenic to humans" by the International Agency for Research on Cancer (IARC) and respirable forms of crystalline silica are listed as substances that "may be reasonably anticipated to be carcinogens" by the National Toxicology Program (NTP). IARC studies involved occupational exposure.

EPIDEMIOLOGY:

Epidemiology studies cited by IARC give indications of increased risk for lung cancer from inhaled crystalline silica (quartz) resulting from occupational exposure. Studies involving heavy industrial exposure to silica in granite and foundry workers, brick factories and sandblasting found increased levels of protein and enzymes in urine, which is indicative of kidney damage.

CARCINOGENICITY (see cancer lists below):

Crystalline silica inhaled in the form of quartz is classified as "carcinogenic to humans" by the International Agency for Research on Cancer (IARC), and respirable forms of crystalline silica are listed as substances that "may reasonably be anticipated to be carcinogens" by the National Toxicology Program (NTP). The IARC listing is based on the determination that there is sufficient evidence in humans for carcinogenicity of inhaled crystalline silica in the form of quartz from occupational exposures.

Portland Cement

LD50/LC50:

LC50 (Oral): 2,000 mg/kg

CHRONIC:

Repeated skin contact with Portland Cement has caused irritation and, in some individuals, an allergic skin reaction. Skin contact with wet cement has resulted in skin irritation from the alkaline and abrasive properties. Chronic exposure has resulted in irritation of the eyes and upper respiratory tract with increases in productive cough and chronic bronchitis.

EPIDEMIOLOGY:

Epidemiology studies of workers exposed to Portland Cement produced no adverse respiratory effects such as pneumoconiosis, fibrosis or decreased respiratory function. Generally, exposure to this material produced no increase in mortality or lung cancer, although one study has indicated an increased risk of colon cancer.

Calcium Hydroxide

LD50/LC50:

LC50 (Oral): 7,340 mg/kg; LD50 (Dermal): 2,520 mg/kg

Cancer Lists

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Quartz	Known Carcinogen	Group 1, Carcinogenic to humans	Yes
Portland Cement	No	No	No
Calcium Hydroxide	No	No	No

Health Effects

Hazardous components	Health Effects / Target Organs
Quartz	Pneumoconiosis (Silicosis) (HE10) / Eyes, respiratory system
Portland Cement	Irritation-Eyes, Nose, Throat, Skin---Marked (HE14); Cumulative lung damage (HE10) / Eyes, skin, respiratory system
Calcium Hydroxide	Irritation-Eye, Nose, Throat, Skin---Marked (HE14) / Eyes, skin, respiratory system

12. ECOLOGICAL INFORMATION

Ecotoxicological Information

Data available for this material and/or its components are summarized below:

General Product Information:

The addition of cement and hydrated lime to water will raise the pH and may therefore be toxic to aquatic life in some circumstances.

Component Data:

Not available

13. DISPOSAL CONSIDERATIONS

Information provided is for unused product only.

Recommended method of disposal:

Recover, reclaim or recycle when practical. Dispose of in accordance with federal, state and local regulations. Empty containers retain product residue. Note: Chemical additions to, processing of, or otherwise altering this material may render information in this document to be incomplete, inaccurate or otherwise inappropriate for waste management purposes. Furthermore, state and local waste disposal requirements may be more restrictive or otherwise different from federal laws and regulations.

Dispose of in an approved land fill if allowed locally. Dispose of in a permitted waste management facility if a landfill is not practical.

Disposal Regulatory Requirements:

It is the responsibility of the waste generator to determine if the waste meets the definition of a hazardous waste as promulgated at 40 CFR Part 261 subpart C.

No EPA Waste Numbers are applicable for this product's components.

14. TRANSPORT INFORMATION

U.S. Department of Transportation Ground (49 CFR):

Proper shipping name: Not regulated

Air and Passenger Rail

Proper shipping name: Not regulated

Water Transportation (IMO/IMDG):

Proper shipping name: Not regulated

15. REGULATORY INFORMATION

United States Regulatory Information

TSCA 8 (b) Inventory Status: All components are listed or are exempt from listing on the Toxic Substances Control Act Inventory.

SARA 311/312: Acute health hazard
Chronic health hazard

Applicable component data listed below:

TSCA 12(b) Export Notification	None listed
CERCLA/SARA Section 302 EHS	None listed
Section 304 EHS RQ	None listed
CLCRA RQ	None listed
Section 313	None listed

RCRA CODE None listed
CAA 1129(r) TQ None listed

State Regulations

State Lists (Components on one or more lists)	CA	NJ	PA	RI	NY	MA	MN
Quartz	Yes	Yes	Yes	Yes	No	No	Yes
Portland Cement	No	Yes	Yes	Yes	No	No	Yes
Calcium Hydroxide	No	Yes	Yes	Yes	No	No	Yes

California Proposition 65: This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity:

Chemical	Type of toxicity	Date Listed	NSRL or MADL µg (per day)
Quartz	Cancer	10/1/1988	Not listed

Canada Regulatory Information

	WHMIS Status	Hazard class(s)
Quartz	Disclosure (0.1%)	D2A
Portland Cement	Disclosure (1.0%)	E
Calcium Hydroxide	Disclosure (1.0%)	E

16. OTHER INFORMATION

Revision Information

Revision Date: 7/13/2010
Supersedes Revision Dated: 5/25/2010
Revision Number: 1.001
Revision Summary: Revise HMIS, remove NFPA, cosmetic changes

Key: NE = Not Established, NA = Not Applicable

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DISCLAIMER: The data contained herein are furnished for information only and are believed to be reliable. However, Ergon Armor does not assume responsibility for any results obtained by persons over whose methods Ergon Armor has no control. It is the user's responsibility to determine the suitability of Ergon's products or any production methods mentioned herein for a particular purpose, and to adopt such precautions as may be advisable for the protection of property and persons against any hazards that may be involved in the handling and use of any of Ergon Armor products. In light of the foregoing, Ergon Armor specifically disclaims all warranties, express or implied, including warranties of merchantability and fitness for a particular purpose, arising from sale or use of Ergon Armor's products. Ergon Armor further disclaims any liability for consequential or incidental damages of any kind, including lost profits.