

Ergon Armor      **Revision Number:** 5.000  
**Issue Date:** 06/11/06

**1. PRODUCT AND COMPANY IDENTIFICATION**

**Product name:** TUFCHEM® SPRAYABLE EPOXY FILLER      **ID(s):** A  
**Product type:** Quartz filler      **Region:** United States  
**Company address:** Ergon Armor  
Corrosion Engineering  
300 Stevens Drive, Suite 310  
Lester, PA 19113  
**Contact information:**  
Telephone: 800.424.9300  
Emergency: Call CHEMTREC at 800.424.9300  
Internet: www.ergonarmor.com

**2. HAZARDS IDENTIFICATION**

**EMERGENCY OVERVIEW**

**Physical state:** Powder  
**Color:** Neutral  
**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 from Silicosis has been known to occur within one to two years.

**Skin contact:** None

**Eye contact:** May cause abrasion of the cornea.

**Ingestion:** None

**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	100

### 4. FIRST AID MEASURES

- Inhalation:** Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical attention.
- Skin contact:** Flush with plenty of water. Remove contaminated clothing and shoes. Wash clothing before reuse. Thoroughly clean shoes before reuse.
- Eye contact:** Immediately flush with plenty of water. Get medical attention if irritation persists.
- Ingestion:** Induce vomiting as directed by medical personnel. 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 or scoop up and remove to suitable container. Reuse if practical.
- 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:** 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 cool, dry, well-ventilated place. Store out of direct sunlight. Avoid excessive heat.

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/(% SiO2 +2), PEL-TWA (respirable dust)	None	NIOSH: 0.05 mg/m3 (REL – respirable dust)

**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. 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**

<b>Physical state:</b>	Powder
<b>Color:</b>	Neutral
<b>Odor:</b>	Odorless
<b>Odor threshold:</b>	NA
<b>pH:</b>	NA
<b>Vapor pressure:</b>	NA
<b>Boiling point/range:</b>	NA
<b>Melting point/ range:</b>	NA
<b>Specific gravity:</b>	NA
<b>Vapor density:</b>	NA
<b>Flash point:</b>	NA
<b>Flammable/Explosive limits - lower:</b>	NA
<b>Flammable/Explosive limits - upper:</b>	NA
<b>Autoignition temperature:</b>	NA
<b>Evaporation rate:</b>	NA

Solubility in water: Insoluble  
Partition coefficient (n-octanol/water): NA  
VOC content: None

## 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:

See component data.

#### 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.

##### NEUROTOXICITY:

Not available

##### MUTAGENICITY:

Not available

##### 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.

##### DEVELOPMENTAL TOXICITY/TERATOGENICITY:

Not available

**Cancer Lists**

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Quartz	Known Carcinogen	Group 1, Carcinogenic to humans	Yes

**Health Effects**

Hazardous components	Health Effects / Target Organs
Quartz	Pneumoconiosis (Silicosis) (HE10) / Eyes, respiratory system

**12. ECOLOGICAL INFORMATION**

**Ecotoxicological Information**

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

**General Product Information:**

Not available

**Component Data:**

Not available

**13. DISPOSAL CONSIDERATIONS**

Information provided is for unused product only.

**Recommended method of disposal:**

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

*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.*

**Disposal Regulatory Requirements:**

No EPA Waste Numbers are applicable for this product.

*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.*

**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**

**TUFCEM SPRAYABLE EPOXY FILLER**  
MATERIAL SAFETY DATA SHEET

**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:**

<b>TSCA 12(b) Export Notification</b>	None listed
<b>CERCLA/SARA Section 302 EHS</b>	None listed
<b>Section 304 EHS RQ</b>	None listed
<b>CLCRA RQ</b>	None listed
<b>Section 313</b>	None listed
<b>RCRA CODE</b>	None listed
<b>CAA 1129(r) TQ</b>	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

**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) <sup>a</sup>
Quartz	Cancer	10/1/1988	Not Listed

**Canada Regulatory Information**

	<b>WHMIS Status</b>	<b>Hazard class(s)</b>
Quartz	Disclosure (0.1%)	D2A

**16. OTHER INFORMATION**

**Revision Information**

**Revision Date:** 8/2/2010  
**Supersedes Revision Dated:** 9/1/2009  
**Revision Number:** 5.000  
**Revision Summary:** New format

**Key:** NE = Not Established, NA = Not Applicable

**Prepared by:** R. Forsythe

**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's 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.