

Ergon Armor      **Revision Number:** 4.000  
**Issue Date:** 01/18/12

### 1. PRODUCT AND COMPANY IDENTIFICATION

**Product name:** TUFCHEM® SILICATE SOLUTION      **ID(s):** 19546, 19547

**Product type:** Potassium Silicate solution      **Region:** United States

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

**Contact information:**  
Telephone: 601.933.3540  
Emergency: Call CHEMTREC at 800.424.9300  
Internet: www.Ergon.com

### 2. HAZARDS IDENTIFICATION

#### EMERGENCY OVERVIEW

**Physical state:** Liquid  
**Color:** Clear to hazy  
**Odor:** None

**HMIS:**

HEALTH: 1  
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! CAUSES EYE AND SKIN BURNS. MAY CAUSE BLINDNESS. CAUSES DIGESTIVE TRACT BURNS, CAN CAUSE RESPIRATORY TRACT IRRITATION.

**Relevant routes of exposure:** Inhalation and skin and eye contact

#### Potential Health Effects

**Inhalation:** Inhalation of mist or dust may cause severe irritation to the skin, eyes and upper respiratory tract with effects such as coughing, burning and shortness of breath.

**Skin contact:** Due to the alkaline nature of this material, it is corrosive to the skin.

**Eye contact:** Due to the alkaline nature of this material, it is corrosive to the eyes.

**Ingestion:** Due to the alkaline nature of this material, it is corrosive to the digestive tract.

**Existing conditions aggravated by exposure:** Dry skin, dermatitis, existing lung conditions.

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

Components	CAS-No.	%
Water	7732-18-5	60 - 75
Potassium Silicate	1312-76-1	25 - 40

#### 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:** Immediately flush with plenty of water. Remove contaminated clothing and shoes. Get medical attention. Wash clothing before reuse. Destroy contaminated shoes.
- Eye contact:** Immediately flush with plenty of water for at least 15 minutes. Get medical attention immediately.
- Ingestion:** Do NOT induce vomiting. Give water to drink. Get medical attention immediately. 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:** Avoid breathing fumes from fire-exposed material.
- 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:** Contain spills.
- Clean-up methods:** Contain spill. Sweep or scoop up and remove to suitable container. 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 taste or swallow. Do not get in eyes, on skin or on clothing. Avoid breathing vapor or mist. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.
- Storage:** Store in a cool, dry place. Avoid freezing temperatures (32°F (0°C) or lower). Avoid excessive heat. Store out of direct sunlight.

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
Water	NE	NE	NE	
Potassium Silicate	NE	NE	NE	

**Engineering controls:** Investigate engineering techniques to reduce exposures. Provide ventilation if necessary to control exposure levels. 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:** Do not breathe mist. Do not breathe vapor. When airborne exposure is likely, use NIOSH approved respiratory protection equipment appropriate to the material and/or its components. If exposures cannot be kept at a minimum with engineering controls, 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 there may be a potential for significant exposure, 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>	Liquid
<b>Color:</b>	Clear to hazy
<b>Odor:</b>	None
<b>Odor threshold:</b>	NA
<b>pH:</b>	11 - 13
<b>Vapor pressure:</b>	Nil
<b>Boiling point/range:</b>	212°F (100°C)
<b>Melting point/ range:</b>	32°F (0°C)
<b>Specific gravity:</b>	1.42 @ 25/25 deg C
<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>	NE
<b>Solubility in water:</b>	Soluble
<b>Partition coefficient (n-octanol/water):</b>	NA
<b>VOC content:</b>	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:** Contact with strong acids and strong alkalis may result in an exothermic reaction, which is characterized by the generation of heat and possible splattering of the chemical involved.  
**Conditions to avoid:** NA

**11. TOXICOLOGICAL INFORMATION**

**Toxicological Information**

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

**General Product Information:**  
No information available for the product.

**Potassium Silicate**

**LD50/LC50:**  
Human case reports indicate that direct contact with the skin causes burns.

**Cancer Lists**

Hazardous components	NTP Carcinogen	IARC Carcinogen	OSHA Carcinogen
Water	No	No	No
Potassium Silicate	No	No	No

**Health Effects**

Hazardous components	Health Effects / Target Organs
Water	NA
Potassium Silicate	Irritation / Eyes, Skin, Digestive Tract

**12. ECOLOGICAL INFORMATION**

**Ecotoxicological Information**

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

**General Product Information:**  
No information available for the product.

**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 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

#### 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 Codes:** Acute 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** NA

California Proposition 65: This product contains the following chemicals known to the State of California to cause cancer or reproductive toxicity:  
None Listed

**Canada Regulatory Information**

	<b>WHMIS Status</b>	<b>Hazard class(s)</b>
Water	NA	
Potassium Silicate	Not listed	

#### 16. OTHER INFORMATION

**Revision Information**

**Revision Date:** 6/15/2010  
**Supersedes Revision Dated:** 6/15/2007  
**Revision Number:** 4.000  
**Revision Summary:** Revised format

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

**Prepared by:** R. Forsythe

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