1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Trade name	:	Protectosil® BHN Isobutyltriethoxysilane
Use of the Substance / Preparation	:	For industrial use
Function		Waterproofing agent
Company	:	Evonik Corporation USA 299 Jefferson Road Parsippany,NJ 07054-0677 USA
Telephone	:	973-929-8000
Telefax	:	973-929-8040
US: CHEMTREC EMERGENCY NUMBER	:	800-424-9300
CANADA: CANUTEC EMERGENCY NUMBER	:	613-996-6666
Product Regulatory Services	:	973-929-8060

2. HAZARDS IDENTIFICATION

***** EMERGENCY OVERVIEW *****

***Form**-liquid* ***Color**-colorless* **Odor**-*characteristic*

Combustible liquid and vapor.
Causes skin irritation.
May cause respiratory tract irritation.
May cause eye irritation.

POTENTIAL HEALTH EFFECTS

Eye contact

May cause eye irritation.

Skin Contact

Irritating.

Inhalation

May cause irritations of the respiratory tract.

Ingestion

No hazard expected in normal use.

Chronic Health Hazard

This product can hydrolyze to form a material posing additional health effects:
Ethanol: ACGIH TLV: TWA 1000 ppm; OSHA PEL: TWA 1000 ppm. Liquid and high vapor concentrations cause eye irritation. Contact of liquid with skin causes drying, cracking, and irritation. Inhalation causes irritation of the respiratory tract. Repeated or prolonged exposure to high vapor concentrations may cause drowsiness. Excessive or repeated ingestion may cause central nervous system effects, liver effects and reproductive effects. However, ingestion is not an expected route of exposure. Ethanol has a low potential to cause allergic skin reactions; however, undocumented cases of human skin sensitization have been reported.

3. COMPOSITION/INFORMATION ON INGREDIENTS

Information on ingredients / Hazardous components

Isobutyltriethoxysilane

CAS-No.	17980-47-1	Percent (Wt./ Wt.)	100 %

Other information

This material is classified as hazardous under OSHA regulations.

4. FIRST AID MEASURES

General advice

Remove contaminated or saturated clothing immediately and dispose of safely.

Inhalation

If aerosol or mists are inhaled, take affected persons out into the fresh air. Possible discomforts include severe irritation of mucus lining (nose, throat, eyes), cough, sneezing and flow of tears. In case of persistent discomfort, obtain medical attention immediately.

Skin contact

Immediately wash skin with soap and plenty of water. Remove contaminated clothing. Obtain medical attention immediately if symptoms occur. Wash clothing before reuse.

Eye contact

In case of contact, immediately flush eyes with plenty of water, or if necessary, with eye rinsing solution. In case of persistent discomfort, consult an ophthalmologist.

Ingestion

If accidentally swallowed, rinse mouth thoroughly with water and afterwards, drink plenty of water. In case of discomfort, obtain medical attention.

Notes to physician

After absorbing large amount of substance, apply therapy for irritative effects. If substance has been swallowed, early endoscopy is recommended in order to assess mucosa lesions in the esophagus and stomach which may appear. If necessary, suck away leftover substance. Allergic reactions cannot be excluded. Apply treatment of allergic reaction if necessary.

5. FIRE-FIGHTING MEASURES

Flash point	63 °C , 145 °F Method: DIN EN ISO 2719 (Pensky-Martens, Closed Cup)
Lower explosion limit	0.39 %(V) (98 °C) Method: DIN 51649
Upper explosion limit	8.47 %(V) (150 °C) Method: DIN 51649
Autoignition temperature	Not determined.
OSHA Flammability Classification	Combustible Liquid

Suitable extinguishing media

Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

Specific hazards during fire fighting

Combustible liquid. Vapors can travel to a source of ignition and flash back. Explosive mixtures may occur at temperatures at or above the flashpoint.

Special protective equipment for fire-fighters

As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA/NIOSH approved or equivalent) and full protective gear.

Further information

Water used to extinguish fire should not enter drainage systems, soil or stretches of water. Ensure there are sufficient retaining facilities for water used to extinguish fire. Fire residues and contaminated fire extinguishing water must be disposed of in accordance with local regulations.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Ensure adequate ventilation. Use personal protective equipment.

Environmental precautions

Obey relevant local, state, provincial and federal laws and regulations. Do not contaminate any lakes, streams, ponds, groundwater or soil.

Methods for cleaning up

Contain and collect spillage with non-combustible absorbent material, (e.g. sand, earth, diatomaceus earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

Additional advice

Remove sources of ignition and ventilate area.
Run off may create fire or explosion hazard in sewer.
Ensure sufficient ventilation.

7. HANDLING AND STORAGE

Handling

Safe handling advice

Use in the open air or with adequate ventilation.

Wear personal protective equipment; see section 8.

Advice on protection against fire and explosion

Take precautionary measures against static charges, keep away from sources of ignition.

Storage

Requirements for storage areas and containers

Keep containers tightly closed in a cool, well-ventilated place. Protect from moisture.
Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Engineering measures

Provide adequate ventilation.

Personal protective equipment

Respiratory protection

A respiratory protection program that meets OSHA 1910.134 and ANSI Z88.2 or applicable federal/provincial requirements must be followed whenever workplace conditions warrant respirator use. NIOSH's "Respirator Decision Logic" may be useful in determining the suitability of various types of respirators.

Hand protection

Glove material	for example, Polychloroprene (PCP)
Material thickness	0.5 mm
Break through time	>= 480 min
Glove material	for example, Fluorinated rubber (FKM)
Material thickness	0.4 mm
Break through time	>= 480 min
Method	Source: GESTIS substance database (hazardous substance information system of commercial professional associations)

Use impermeable gloves.

The above mentioned hand protection is based on knowledge of the chemistry and anticipated uses of this product but it may not be appropriate for all workplaces. A hazard assessment should be conducted prior to use to ensure suitability of gloves for specific work environments and processes prior to use.
Selection of protective gloves to meet the requirements of specific workplaces.
Suitability for specific workplaces should be clarified with protective glove manufacturers.

Eye protection

Use chemical splash goggles or face shield.

Skin and body protection

A safety shower and eye wash fountain should be readily available.
To identify additional Personal Protective Equipment (PPE) requirements, it is recommended that a hazard assessment in accordance with the OSHA PPE Standard (29CFR1910.132) be conducted before using this product.

Hygiene measures

Avoid contact with skin, eyes and clothing. Do not inhale vapors or aerosols. Do not eat, drink, or smoke when using the product. Remove contaminated or saturated clothing.

9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance

Form	liquid
Color	colorless
Odor	characteristic
physical state	liquid

Safety data

Melting point/range	< -65.0 °C
Boiling point/range	ca. 186 °C (1013 hPa) Method: DIN 51 751
Flash point	63 °C Method: DIN EN ISO 2719 (Pensky-Martens, Closed Cup)
Flammability	not determined
Autoignition temperature:	Not determined.
Autoinflammability	not determined
Explosiveness	Vapors can form explosive mixtures with air.
Lower explosion limit	0.39 %(V) (98 °C) Method: DIN 51649
Upper explosion limit	8.47 %(V) (150 °C) Method: DIN 51649
Vapor pressure	33 Pa (20 °C) 49 Pa (25 °C)
Density	ca. 0.88 g/cm3 (20 °C) Method: DIN 51757
metal corrosion	Not to be expected in view of the structure

Water solubility	Not miscible. Decomposition by hydrolysis.
Partition coefficient (n-octanol/water)	log Pow: 2.033 (measured) related to substance: Isobutyltrialkoxysilane
Viscosity, dynamic	not determined
Solvents and Volatiles Data	
% VOC (gm/l)	400

10. STABILITY AND REACTIVITY

Conditions to avoid	Avoid high temperatures and sources of ignition.
Materials to avoid	Water
Hazardous decomposition products	Ethanol in case of hydrolysis
Thermal decomposition	not determined

11. TOXICOLOGICAL INFORMATION

Product Acute oral toxicity	LD50 rat: > 5000 mg/kg Method: OECD Test Guideline 401
Product Acute inhalation toxicity	LC50 Rat: 5.88 mg/l / 4 h / Aerosol
Product Acute dermal toxicity	LD50 rat: > 2000 mg/kg Method: OECD Test Guideline 402
Product Skin irritation	Rabbit irritating Method: OECD Test Guideline 404
Product Eye irritation	Rabbit not irritating Method: OECD Test Guideline 405
Product Sensitization	No data available
Product Gentoxicity in vitro	No data available
Product Carcinogenicity	No evidence that cancer may be caused.
Product Toxicity to reproduction	Animal model trials have produced no evidence of fertility damage.

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability	Readily biodegradable. 75 % Exposure time: 28 d Method: OECD 301 D

Behaviour in environmental compartments

Bioaccumulation	not bioaccumulative
Mobility	Adsorption on the floor: low.

Ecotoxicity effects

Toxicity to fish	LC50 Oncorhynchus mykiss: 85 mg/l / 96 h Method: OECD 203 (literature value)
Toxicity to daphnia	EC50 Daphnia magna: > 49.1 mg/l / 48 h Method: OECD 202
Toxicity to algae	NOEC scenedesmus subspicatus: >= 36 mg/l / 72 h Method: OECD 201
Toxicity in terrestrial plants	EC50 Trifolium ornithopadioides: > 100 mg/kg / 17 d Method: OECD 208 EC50 Lepidium sativum: > 100 mg/kg / 17 d Method: OECD 208 EC50 Triticum aestivum: > 100 mg/kg / 17 d Method: OECD 208
Toxicity in other terrestrial non-mammals	LC50 Eisenia foetida foetida: > 1000 mg/kg / 14 d Method: OECD 207
General Ecological Information	The data we have at our disposal do not necessitate identification concerning environmental hazard. Prevent penetration into soil, stretches of water and drainage systems.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Advice on disposal	Waste must be disposed of in accordance with federal, provincial, state and local regulations. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH AN ELECTRIC OR GAS TORCH.

14. TRANSPORT INFORMATION

D.O.T. Road/Rail

Class	Combustible Liquid
UN-No	1993
Packing group	III
Proper shipping name	Combustible liquid, n.o.s.
Technical Name	(Triethoxyisobutylsilane)

Loading instructions/Remarks

IATA_C	Not hazardous freight in air traffic (ICAO-TI / IATA-DGR).
IATA_P	Not hazardous freight in air traffic (ICAO-TI / IATA-DGR).
IMDG	Not classified as hazardous sea cargo (IMDG code) FOR USA ONLY: In packagings exceeding 450 L, this product must be classified, placarded, marked and shipped as Combustible Liquid to the USA.
CFR_INWTR	Not regulated in packages 450 liter or less.
CFR_ROAD	Not regulated in packages 450 liter or less.
CFR_RAIL	Not regulated in packages 450 liter or less.

15. REGULATORY INFORMATION

US Federal Regulations

OSHA

If listed below, chemical specific standards apply to the product or components:

- None listed

Clean Air Act Section (112)

If listed below, components present at or above the de minimus level are hazardous air pollutants:

- None listed

CERCLA Reportable Quantities

If listed below, a reportable quantity (RQ) applies to the product based on the percent of the named component:

- None listed

SARA Title III Section 311/312 Hazard Categories

The product meets the criteria only for the listed hazard classes:

- Acute Health Hazard
- Fire Hazard

SARA Title III Section 313 Reportable Substances

If listed below, components are subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR Part 372:

- None listed

Toxic Substances Control Act (TSCA)

If listed below, non-proprietary substances are subject to export notification under Section 12 (b) of TSCA:

- None listed

State Regulations

The Listing requirements of the Right to Know (RTK) legislation varies by state. All information for NJ, PA, MA and other states can be derived from the listing of hazardous and non-hazardous components in section 2 and 15 of this MSDS.

California Proposition 65

A warning under the California Drinking Water Act is required only if listed below:

- None listed

International Chemical Inventory Status

Unless otherwise noted, this product is in compliance with the inventory listing of the countries shown below. For information on listing for countries not shown, contact the Product Regulatory Services Department.

• Europe (EINECS/ELINCS)	Listed/registered
• USA (TSCA)	Listed/registered
• Canada (DSL)	Listed/registered
• Australia (AICS)	Listed/registered
• Korea (TCCL)	Listed/registered
• Philippines (PICCS)	Listed/registered
• China	Listed/registered
• Japan (MITI)	Listed/registered

16. OTHER INFORMATION

HMIS Ratings

Health :	2
Flammability :	2
Physical Hazard :	1

NFPA Ratings

Health :	2
Flammability :	2
Reactivity :	1

Further information

Changes since the last version are highlighted in the margin. This version replaces all previous versions.

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.