

MATERIAL SAFETY DATA SHEET

Protectosil® BHN

degussa.

Material no.		Version	2.6 / US
Specification	120877	Revision date	03/15/2006
Order Number		Print Date	03/16/2006
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1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product information

Trade name : Protectosil® BHN
triethoxyisobutylsilane

Company : Degussa Corporation
379 Interpace Parkway
Parsippany, NJ 07054
USA

Telephone : 973-541-8000

Telefax : 973-541-8040

US: CHEMTREC EMERGENCY NUMBER : 800-424-9300

CANADA: CANUTEC EMERGENCY NUMBER : 613-996-6666

Product Regulatory Services : 973-541-8060

2. COMPOSITION/INFORMATION ON INGREDIENTS

Information on ingredients / Hazardous components

NJTSR No.56705700001-5318P
CAS-No. Trade Secret Percent (Wt./ Wt.) 100 %

Other information

This material is classified as hazardous under OSHA regulations.

3. 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

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May cause eye irritation.

Skin Contact

Irritating.

Inhalation

May cause irritations of the respiratory tract.

Ingestion

No hazard expected in normal use.

4. FIRST AID MEASURES

General advice

Remove contaminated or saturated clothing.

Inhalation

Following inhalation of aerosols or mist:

Take affected persons out into the fresh air.

In case of persistent discomfort: Supply with medical care.

Skin contact

Wash off immediately with plenty of water.

Consult a doctor in the event of permanent skin irritation.

Eye contact

Keeping eyelid open, immediately rinse thoroughly for at least 5 minutes using plenty of water or, if necessary, eye rinsing solution.

In case of persistent discomfort: Consult an ophthalmologist.

Ingestion

Have the mouth rinsed with water.

Have patient drink plenty of water in small sips.

Obtain medical attention.

Notes to physician

If required, therapy of irritative effect.

after absorbing large amounts of substance:

administration of activated charcoal.

Acceleration of gastrointestinal passage

5. FIRE-FIGHTING MEASURES

Flash point	63 °C , 145 °F Method: DIN 51 755
Lower explosion limit	0.39 %(V) (98 °C) Method: DIN 51649
Upper explosion limit	8.47 %(V) (150 °C)

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Method: DIN 51649

Autoignition temperature Not determine.

OSHA Flammability Classification Combustible Liquid

Suitable extinguishing media

Use foam, dry chemical or CO₂.

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.

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

Soak up with absorbent material, e.g., sand, silica gel, acid binder, universal binder or sawdust. Place in a marked, sealable container and dispose of in accordance with existing federal, provincial, state and local regulations.

7. HANDLING AND STORAGE

Handling

Safe handling advice

Use in the open air or with adequate ventilation.

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.

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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

Use impermeable gloves.

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

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 51 755
Autoignition temperature:	Not determine.
Lower explosion limit	0.39 %(V) (98 °C) Method: DIN 51649
Upper explosion limit	8.47 %(V) (150 °C) Method: DIN 51649
Vapor pressure	0.68 hPa (25 °C)
Density	ca. 0.88 g/cm ³ (20 °C) Method: DIN 51757

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Water solubility Not miscible.
Decomposition by hydrolysis.

Partition coefficient (n-octanol/water) log Pow: 2.033
(measured)
related to substance: triethoxyisobutylsilane

Solvents and Volatiles Data
% VOC (gm/l) 400

10. STABILITY AND REACTIVITY

Materials to avoid Water
Hazardous decomposition products Ethanol in case of hydrolysis

11. TOXICOLOGICAL INFORMATION

Product Acute oral toxicity LD50 rat: > 5000 mg/kg
Method: literature

Product Acute inhalation toxicity LC0 Rat: 5.88 mg/l / 4 h
Method: literature

Product Acute dermal toxicity LD50 rat: > 2000 mg/kg
literature

Product Skin irritation Irritating to skin.
Method: literature

Product Eye irritation Not irritating.
Method: literature

Product General Toxicity literature
Information Own study

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability Readily biodegradable.
75 %
Method: OECD 301 D
(literature value)

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Ecotoxicity effects

Toxicity to fish	LC50 Oncorhynchus mykiss: 85 mg/l / 96 h Method: EC 84/449 (literature value)
Toxicity to daphnia	EC50 Daphnia magna: > 49.10 mg/l / 48 h Method: EC 84/449
Toxicity to algae	NOEC scenedesmus subspicatus: >= 36.00 mg/l / 72 h Method: EC 88/302
Toxicity in terrestrial plants	EC50 Trifolium ornithopadioides: > 100.00 mg/kg / 336 h Method: OECD 208 EC50 Lepidium sativum: > 100.00 mg/kg / 336 h Method: OECD 208 EC50 Triticum aestivum: > 100.00 mg/kg / 336 h Method: OECD 208
Toxicity in other terrestrial non-mammals	LC50 Eisenia foetida foetida: > 1000.00 mg/kg / 14 d Method: EC 88/302
General Ecological Information	The data we have at our disposal do not necessitate identification concerning environmental hazard.

13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

Advice on disposal

Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method. Empty containers must be handled with care due to product residue. DO NOT HEAT OR CUT THE EMPTY CONTAINER WITH 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.

Loading instructions/Remarks

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

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IATA_P

Not hazardous freight in air traffic (ICAO-TI / IATA-DGR).

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

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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 Degussa Corporation Product Regulatory 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.

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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.

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