

MATERIAL SAFETY DATA SHEET

Protectosil® CHEM-TRETE® BSM 400



Material no.		Version	1.4 / US
Specification	174132	Revision date	07/24/2012
Order number		Print date	03/26/2013
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1. Identification of the substance / preparation and of the company / undertaking

Product information

Trade name	Protectosil® CHEM-TRETE® BSM 400 BA
Company	Evonik Corporation 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-fruity**

Combustible liquid and vapor.
Vapors may cause flash fire or explosion.
May cause skin irritation.

Potential health effects

Eye contact

Non-irritating.

Skin Contact

Irritating.

Inhalation

Possibly irritating.

Ingestion

Possibly irritating.

Chronic Health Hazard

This product can hydrolyze to form a material posing additional health effects:
Methanol: OSHA PEL: TWA 200ppm (skin); ACGIH TLV: TWA 200ppm, STEL 250ppm (skin).

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Causes moderate eye irritation with transient redness and discomfort. Contact causes moderate skin irritation with dryness (defatting), itching and/or rash. Absorption through the skin is possible and can cause nausea, headache, and general discomfort. Prolonged or repeated exposure may cause adverse eye effects such as conjunctivitis or corneal damage, and skin effects such as defatting, rash, or corrosion. Methanol is toxic by inhalation and ingestion. Inhalation of vapors may cause cyanosis, lethargy, loss of consciousness and death. The effects from inhalation may be delayed. Ingestion may cause malaise, discomfort, and death if not treated promptly. Medical conditions aggravated by exposure include: skin disorders and allergies, liver disorders and eye disease.

3. Composition / information on ingredients

Information on ingredients / Hazardous components

NJTSR No.56705700001-7064P			
CAS-No.	Trade Secret	Percent (Wt./ Wt.)	100 %

Other information

This material is classified as hazardous under OSHA regulations.

4. First aid measures

General advice

Take off all contaminated clothing immediately.

Inhalation

If aerosol or mists are formed:

Move victims into fresh air.

In case of persistent discomfort: Consult doctor immediately.

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.

Consult a physician immediately.

Notes to physician

After absorbing large amounts of substance:

Liberation of reaction products (Methanol) can lead to symptoms of poisoning.

Possible signs of poisoning:

daze, dizziness, nausea, colicky abdominal pain, respiratory disturbance.

Symptoms upon increasing intoxication: dystopia, loss of eyesight.

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If large amount of substance is absorbed, liberation of reaction product (methanol) can lead to symptoms of poisoning. Possible signs of poisoning include daze, dizziness, nausea, colicky abdominal pain or respiratory disturbance. Symptoms of increasing intoxication include dystopia or loss of eyesight. Treatment may include immediate gastric lavage, antidote treatment or correction of acid-base balance. Detection of the substance (methanol) is possible in blood. Evidence shows that the treatment of methanol absorption is enhanced through the administration of ethanol, which should be given to produce a blood level of at least 0.1%. Ethanol diminishes the production of toxic metabolites of methanol. Obtain treatment of allergic reaction if necessary.

If required, therapy of irritative effect.

Treatment:

Immediate gastric lavage. Antidote treatment, correction of acid-base balance.

Detection of substance (Methanol) possible in:

Blood

Antidote treatment: ethanol.

5. Fire-fighting measures

Flash point 39 °C, 102 °F
Method: DIN EN ISO 13736

Autoignition temperature not determined

Suitable extinguishing media

Use foam, dry chemical or CO₂.

Specific hazards during fire fighting

Standard procedure for chemical fires.

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.

Containers can build up pressure if exposed to heat (fire). Cool with water spray.

6. Accidental release measures

Personal precautions

Keep away from heat and sources of ignition.

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, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

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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

Wear personal protective equipment; see section 8.
Vapors may spread long distances and travel to areas away from the work site before igniting or flashing back to the vapor source.

Keep away from heat, sparks, flames and other sources of ignition. Keep container tightly closed. Use only with adequate ventilation.

Advice on protection against fire and explosion

Take precautionary measures against static charges, keep away from sources of ignition.
Explosion protection equipment required.
Danger of explosion from residual product fumes; therefore avoid spark production through cutting, grinding, or welding work in the area of the container.
When repairs of the production system are to be made (e.g. welding work), the section to be repaired must be essentially free of product.

This material may have a low electrical conductivity and therefore may accumulate dangerous levels of static electricity. An ignitable vapor-air mixture can form inside storage tanks.

The user must be sure to dissipate static charge by careful bonding and grounding of all equipment and personnel involved in fluid transfer with continuity checks to prove effectiveness. Additional precautions against fire and explosion are the use of inert gas to purge vapor space; dip-pipes while filling vessels, especially lined vessels; grounded tank level floats; reduced flow velocity; self-closing valves on transfer lines and flame arrestors in vent lines.

Additional guidance on fire and explosion protection may be found in various consensus standards, including NFPA 30, 69 and 77 and API 2003 as well as OSHA regulation 29CFR1910.106.

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

Use this product preferably in a closed system, or use process enclosures, local exhaust ventilation or other engineering controls to minimize airborne exposure.

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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

Glove material	for example, Nitrile rubber/Nitrile latex (NBR)
Material thickness	0.35 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)

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.

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	fruity
Physical state	liquid

Safety data

pH	not determined
Melting point/range	not determined
Boiling point/range	ca. 150 °C (1013hPa) Method: DIN 51 751
Flash point	39 °C

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Method: DIN EN ISO 13736

Autoignition temperature:	not determined
Explosiveness	Vapors can form explosive mixtures with air.
Vapor pressure	ca. 3 hPa (20 °C)
Density	0.93 g/cm ³ (20 °C) Method: DIN 51757
Water solubility	Not miscible. Decomposition by hydrolysis.
Viscosity, dynamic	0.8 mPa.s (20 °C) Method: DIN 53 015

Further information

Other information	Vapors can form explosive mixtures with air.
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10. Stability and reactivity

Conditions to avoid	Vapors can form explosive mixtures with air. Keep away from heat and sources of ignition.
Materials to avoid	Water, atmospheric humidity
Hazardous decomposition products	Methanol in case of hydrolysis.

11. Toxicological information

Product Acute oral toxicity	LD50 Rat: > 2000 mg/kg Own test result.
Product Acute inhalation toxicity	LC50 rat: > 13750 ppm / 1 h / Aerosol Method: OECD Test Guideline 403
Product Acute dermal toxicity	No data available
Product Skin irritation	Rabbit irritating
Product Eye irritation	Rabbit not irritating
Product Sensitization	Buehler Test guinea pig: No sensitizing effects.
Product Gentoxicity in vitro	No data available
Product Carcinogenicity	No data available

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Product Toxicity to reproduction No data available

12. Ecological information

Elimination information (persistence and degradability)

Biodegradability Not readily biodegradable.
47 %
Method: EC 84/449

Ecotoxicity effects

Toxicity to fish LC0 Brachydanio rerio: ≥ 100 mg/l / 96 h
Method: EC 92/69

Toxicity to daphnia EC50 Daphnia magna: > 864 mg/l / 48 h
Method: EC 84/449

Toxicity to algae EC50 scenedesmus subspicatus: > 1170 mg/l / 72 h
Method: EC 92/69

NOEC scenedesmus subspicatus: 221 mg/l / 72 h
Method: EC 92/69

Toxicity to bacteria EC 10 Pseudomonas putida: 1200 mg/l / 5 h
Method: Bringmann und Kühn, Z. Wasser Abwasser Forsch. 10, 87-98 (1977)
tested in the presence of emulsifiers

Toxicity in terrestrial plants EC50 Brassica alba: > 100 mg/kg / 336 h
Method: OECD 208

EC50 Triticum aestivum: > 100 mg/kg / 336 h
Method: OECD 208

EC50 Lepidium sativum: > 100 mg/kg / 336 h
Method: OECD 208

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, provincial and local regulations. Since empty containers retain product residue, follow MSDS and label warnings even after container is emptied. Residual vapors might explode on ignition; do not apply heat, cut, drill, grind or weld on or near this container.

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14. Transport information**D.O.T. Road/Rail**

Class	3
UN-No	1993
Packing group	III
Proper shipping name	Flammable liquids, n.o.s.
Technical Name	(alkoxysilane)

Sea transport IMDG-Code

Class	3
UN-No	1993
Packaging group	III
EmS	F-E, S-E
Proper technical name (Proper shipping name)	FLAMMABLE LIQUID, N.O.S.
	(alkoxysilane)

Air transport ICAO-TI/IATA-DGR

Class	3
UN-No	1993
Packaging group	III
Proper technical name (Proper shipping name)	Flammable liquid, n.o.s.
	(alkoxysilane)

Loading instructions / remarks

IATA_C	ERG-Code 3L
IATA_P	ERG-Code 3L
CFR_RAIL	In the U.S. this material may be classified as combustible liquid. Combustible liquids are not regulated in packages 450 liters or less. This applies for shipments by road and rail only.
CFR_ROAD	In the U.S. this material may be classified as combustible liquid. Combustible liquids are not regulated in packages 450 liters or less. This applies for shipments by road and rail only.
IATA_C	Maximum Net Quantity per Package 220 L
IATA_P	Maximum Net Quantity per Package 60 L

15. Regulatory information**US Federal Regulations****OSHA**

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

- None listed

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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

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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
• Japan (MITI)	Listed/registered
• Korea (TCCL)	Listed/registered
• Philippines (PICCS)	Listed/registered
• China	Listed/registered
• New Zealand	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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Legend

ACC	American Chemistry Council
ACGIH	American Conference of Governmental Industrial Hygienists
ACS	Advisory Committee on Sustainability
ADI	Acceptable Daily Intake
ASTM	American Society for Testing and Materials
ATP	Adaptation to Technical Progress
BCF	Bioconcentration factor
BOD	Biochemical oxygen demand
c.c.	closed cup
CAO	Cargo Aircraft Only
Carc	Carcinogen
CAS	Chemical Abstract Services
CDN	Canada
C EPA	Canadian Environmental Protection Act
CERCLA	Comprehensive Environmental Response – Compensation and Liability Act
CFR	Code of Federal Regulations
CMR	carcinogenic- mutagenic-toxic for reproduction
COD	Chemical oxygen demand
DIN	German Institute for Standardization
DM EL	Derived minimum effect level
DNEL	Derived no effect level
DOT	Department of Transportation
EC50	half maximal effective concentration
EPA	Environmental Protection Agency
ErC50	Reduction of Growth Rate
ERG	Emergency Response Guide Book
FDA	Food and Drug Administration
GHS	Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
GLP	Good Laboratory Practice
GMO	Genetic Modified Organism
HCS	Hazard Communication Standard
HMIS	Hazardous Materials Identification System
IARC	International Agency for Research on Cancer
IATA	International Air Transport Association
IBC	Intermediate Bulk Container
ICAO-TI	International Civil Aviation Organization- Technical Instructions
ICCA	International Council of Chemical Association
ID	Identification number
IMDG	International Maritime Dangerous Goods
IUPAC	International Union of Pure and Applied Chemistry
ISO	International Organization for Standardization
LC50	50 % Lethal Concentration
LD50	50 % Lethal Dose
L(E)C 50	LC50 or EC50
LOA EL	Lowest observed adverse effect level
LOEL	Lowest observed effect level
MARPOL	International Convention for the Prevention of Pollution from Ships
NFPA	National Fire Protection Association
NOAEL	No observed adverse effect level
NOEC	no observed effect concentration
NOEL	no observed effect level
o. c.	open cup
OECD	Organization for Economic Cooperation and Development
OEL	Occupational Exposure Limit
OSHA	Occupational Safety and Health Administration
PBT	Persistent, bioaccumulative, toxic
PEC	Predicted effect concentration
PNEC	Predicted no effect concentration
RQ	Reportable Quantity
SDS	Safety Data Sheet

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STOT	Specific Target Organ Toxicity
UN	United Nations
vPvB	very persistent, very bioaccumulative
VOC	volatile organic compounds
WHMIS	Workplace Hazardous Materials Information System
WHO	World Health Organization