1. Identification of the substance / preparation and of the company / undertaking

1.1. Product information

<table>
<thead>
<tr>
<th>Trade name</th>
<th>Protectosil® CHEM-TRETE BSM 400 BA</th>
</tr>
</thead>
<tbody>
<tr>
<td>Company</td>
<td>Evonik Corporation</td>
</tr>
<tr>
<td></td>
<td>299 Jefferson Road</td>
</tr>
<tr>
<td></td>
<td>Parsippany, NJ 07054-0677</td>
</tr>
<tr>
<td></td>
<td>USA</td>
</tr>
<tr>
<td>Telephone</td>
<td>973-929-8000</td>
</tr>
<tr>
<td>Telefax</td>
<td>973-929-8040</td>
</tr>
<tr>
<td>US: CHEMTREC EMERGENCY NUMBER</td>
<td>800-424-9300</td>
</tr>
<tr>
<td>CANADA: CANUTEC EMERGENCY NUMBER</td>
<td>613-996-6666</td>
</tr>
<tr>
<td>Product Regulatory Services</td>
<td>973-929-8060</td>
</tr>
</tbody>
</table>

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.

2.1. 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).
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

<table>
<thead>
<tr>
<th>NJTSR No.</th>
<th>CAS-No.</th>
<th>Trade Secret</th>
<th>Percent (Wt./ Wt.)</th>
</tr>
</thead>
<tbody>
<tr>
<td>56705700001-7064P</td>
<td></td>
<td>Trade Secret</td>
<td>100 %</td>
</tr>
</tbody>
</table>

Other information

This material is classified as hazardous under OSHA regulations.

4. First aid measures

4.1. Description of 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 a 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
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.


Detection of substance (methanol) possible in: blood

Antidote treatment: ethanol.

5. Fire-fighting measures

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash point</td>
<td>39 °C, 102 °F</td>
</tr>
<tr>
<td>Method</td>
<td>DIN 51 755</td>
</tr>
</tbody>
</table>

5.1. Suitable extinguishing media

Use foam, dry chemical or CO₂.

5.2. 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.

5.3. 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

6.1. Personal precautions

Keep away from heat and sources of ignition.

6.2. Environmental precautions

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

6.3. 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).
SAFETY DATA SHEET
Protectosil® CHEM-TRETE BSM

Material no. 174132
Specification
Order number

1.3 / US
01/18/2012
04/09/2012
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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 store
Handling

7.1. 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.

7.2. Conditions for safe storage, including any incompatibilities

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.
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

<table>
<thead>
<tr>
<th>Glove material</th>
<th>for example, Nitrile rubber/Nitrile latex (NBR)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material thickness</td>
<td>0.35 mm</td>
</tr>
<tr>
<td>Break through time</td>
<td>&gt;= 480 min</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Glove material</th>
<th>for example, Fluorinated rubber (FKM)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Material thickness</td>
<td>0.4 mm</td>
</tr>
<tr>
<td>Break through time</td>
<td>&gt;= 480 min</td>
</tr>
</tbody>
</table>

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

9.1. Information on basic physical and chemical properties

Appearance

<table>
<thead>
<tr>
<th>Form</th>
<th>liquid</th>
</tr>
</thead>
<tbody>
<tr>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Odor</td>
<td>fruity</td>
</tr>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
</tbody>
</table>

Safety data

<table>
<thead>
<tr>
<th>pH</th>
<th>not determined</th>
</tr>
</thead>
<tbody>
<tr>
<td>Melting point/range</td>
<td>not determined</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>ca. 150 °C (1013 hPa) Method: DIN 51 751</td>
</tr>
<tr>
<td>Flash point</td>
<td>39 °C</td>
</tr>
</tbody>
</table>
Method: DIN 51 755

Autoignition temperature: not determined

Explosiveness Vapors can form explosive mixtures with air.

Vapor pressure ca. 3 hPa (20 °C)

Density 0.93 g/cm³ (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.

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 genotoxicity in vitro No data available

Product carcinogenicity No data available
SAFETY DATA SHEET
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Order number

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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.

14. Transport information

MSDS-US (R110111) / 1/18/2012 2:19
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
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
- 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. This information and any recommendations, technical or otherwise, are presented in good faith and believed to be correct as of the date prepared. Recipients of this information and recommendations must make their own determination as to its suitability for their purposes. In no event shall Evonik assume liability for damages or losses of any kind or nature that result from the use of or reliance upon this information and recommendations. EVONIK EXPRESSLY DISCLAIMS ANY REPRESENTATIONS AND WARRANTIES OF ANY KIND, WHETHER EXPRESS OR IMPLIED, AS TO THE ACCURACY, COMPLETENESS, NON-INFRINGEMENT, MERCHANTABILITY AND/OR FITNESS FOR A PARTICULAR PURPOSE (EVEN IF EVONIK IS AWARE OF SUCH PURPOSE) WITH RESPECT TO ANY INFORMATION AND RECOMMENDATIONS PROVIDED. Reference to any trade names used by other companies is neither a recommendation nor an endorsement of the corresponding product, and does not imply that similar products could not be used. Evonik reserves the right to make any changes to the information and/or recommendations at any time, without prior or subsequent notice.
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
STOT Specific Target Organ Toxicity
UN United Nations
vPvB very persistent, very bioaccumulative
<table>
<thead>
<tr>
<th>Material no.</th>
<th>Specification</th>
<th>Order number</th>
<th>Version</th>
<th>Revision date</th>
<th>Print date</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>174132</td>
<td></td>
<td>1.3 / US</td>
<td>01/18/2012</td>
<td>04/09/2012</td>
<td>12 10 / 10</td>
</tr>
</tbody>
</table>

VOC
Volatile organic compounds

WHMIS
Workplace Hazardous Materials Information System

WHO
World Health Organization