SAFETY DATA SHEET

Protectosil® CHEM-TRETE® PB 350

1. Identification

1.1. Product identifier

Trade name Protectosil® CHEM-TRETE® PB 350

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified For industrial use
Function Surface modifier
Raw material

1.3. Details of the supplier of the safety data sheet

Company Evonik Corporation
299 Jefferson Road
Parsippany, NJ 07054-0677
USA

Telephone 973-929-8000
Telefax 973-929-8040
Email address Product-Regulatory-Services@evonik.com

1.4. 24 HOUR EMERGENCY TELEPHONE NUMBERS:

CHEMTREC - US & CANADA: 800-424-9300
CHEMTREC MEXICO: 01-800-681-9531
CHEMTREC INTERNATIONAL: +1 703-527-3887 (collect calls accepted)
Product Regulatory Services: 973-929-8060

2. Hazards identification

2.1. Classification of the substance or mixture

Globally Harmonized System of Classification and Labelling of Chemicals (GHS)

<table>
<thead>
<tr>
<th>Flammable liquids</th>
<th>Category 3</th>
<th>H226</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skin irritation</td>
<td>Category 2</td>
<td>H315</td>
</tr>
<tr>
<td>Specific target organ toxicity</td>
<td>Category 3</td>
<td>H336</td>
</tr>
</tbody>
</table>

2.2. Label elements

Statutory basis Globally Harmonized System of Classification and Labelling of Chemicals (GHS)
Symbol(s)

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Signal word Warning

Hazard statement H226 - Flammable liquid and vapor.  
H315 - Causes skin irritation. 
H336 - May cause drowsiness or dizziness.

Precautionary statement: 
Prevention P210 - Keep away from heat/sparks/open flames/hot surfaces. No smoking.  
P233 - Keep container tightly closed.  
P240 - Ground/bond container and receiving equipment.  
P241 - Use explosion-proof electrical/ ventilating/ lighting/ equipment.  
P242 - Use only non-sparking tools. 
P243 - Take precautionary measures against static discharge.  
P261 - Avoid breathing dust/ fume/ gas/ mist/ vapors/ spray.  
P264 - Wash skin thoroughly after handling.  
P271 - Use only outdoors or in a well-ventilated area.  
P280 - Wear protective gloves/ eye protection/ face protection.

Precautionary statement: 
Reaction P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower.  
P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing.  
P312 - Call a POISON CENTER/doctor if you feel unwell. 
P332 + P313 - If skin irritation occurs: Get medical advice/ attention.  
P362 + P364 - Take off contaminated clothing and wash it before reuse.  
P370 + P378 - In case of fire: Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide to extinguish.

Precautionary statement: 
Storage P403 + P233 - Store in a well-ventilated place. Keep container tightly closed.  
P405 - Store locked up.

Precautionary statement: 
Disposal P501 - Dispose of contents/ container to an approved waste disposal plant.

2.3. Other hazards 
None known

3. Composition / information on ingredients

- NJTSR No.56705700001-5332P >= 70% - < 90%
  CAS-No.  Trade Secret
  Flammable liquids Category 3
  Skin irritation Category 2
  Specific target organ toxicity - single exposure (Central nervous system) Category 3

- NJTSR No.56705700001-7348P >= 10% - < 20%
  CAS-No.  Trade Secret
  Skin irritation Category 2

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 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.
Call a physician immediately.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms
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.

4.3. Indication of any immediate medical attention and special treatment needed
None known

5. Fire-fighting measures

5.1. Extinguishing media
Suitable extinguishing media: water spray, foam, Carbon dioxide (CO₂), dry powder
Unsuitable extinguishing media: high volume waterjet

5.2. Special hazards arising from the substance or mixture
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. Advice for firefighters
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.
As in any fire, wear self-contained positive-pressure breathing apparatus, (MSHA / NIOSH approved or equivalent) and full protective gear.

6. Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures
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 and material for containment and cleaning up**

Contain spillage, and then collect 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).

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

7. **Handling and storage**

7.1. **Precautions for safe handling**

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**
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**

8.1. **Control parameters**

**Other information**
Contains no substances with occupational exposure limit values.
Hazardous components without workplace control parameters

8.2. **Exposure controls**
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
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

9.1. Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical state</td>
<td>liquid</td>
</tr>
<tr>
<td>Color</td>
<td>colorless</td>
</tr>
<tr>
<td>Form</td>
<td>liquid</td>
</tr>
<tr>
<td>Odor</td>
<td>fruity</td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>not determined</td>
</tr>
<tr>
<td>pH</td>
<td>not determined</td>
</tr>
<tr>
<td>Melting point/range</td>
<td>&lt; -180 °C (1013 hPa)</td>
</tr>
<tr>
<td>Method</td>
<td>OECD TG 102</td>
</tr>
<tr>
<td>Boiling point/range</td>
<td>150 °C (1013 hPa)</td>
</tr>
<tr>
<td>Method</td>
<td>DIN 51 751</td>
</tr>
</tbody>
</table>
Flash point 45 °C
   Method: DIN EN ISO 13736

Evaporation rate not determined

Lower explosion limit not determined

Upper explosion limit not determined

Vapor pressure ca. 3 hPa (20 °C)

Vapor density not determined

Density 7.66 g/cm3 (20 °C)
   Method: DIN 51757

Water solubility Not miscible.
   Decomposition by hydrolysis.

Partition coefficient: n-octanol/water
   log Pow: 2.1 (20 °C)
   Method: QSAR

Autoignition temperature not determined

Thermal decomposition not determined

Viscosity, dynamic 0.8 mPa.s (20 °C)
   Method: DIN 53 015

9.2. Other information

weight per gallon 2.69 lb/gal

Additional Information Volatile organic compounds (VOC) content

10. Stability and reactivity

10.1. Reactivity
   No dangerous reaction known under conditions of normal use.

10.2. Chemical stability
   Stable under recommended storage conditions.

10.3. Possibility of hazardous reactions
   Possibility of hazardous reactions
   Reacts with water

10.4. Conditions to avoid
   Vapors can form explosive mixtures with air. Keep away from heat and sources of ignition.

10.5. Incompatible materials
   Water, atmospheric humidity

10.6. Hazardous decomposition products
Methanol in case of hydrolysis.

11. Toxicological information

11.1. Information on toxicological effects

Acute oral toxicity
LD50 Rat: > 2000 mg/kg
Method: OECD Test Guideline 401
Assessment: The substance or mixture has no acute oral toxicity

Acute inhalation toxicity
LC50 Rat: 11 mg/l / 4 h / dust/mist
Method: OECD Test Guideline 403
Assessment: The substance or mixture has no acute inhalation toxicity

Skin irritation
Rabbit
Skin irritation
Method: OECD Test Guideline 404

Eye irritation
Rabbit
No eye irritation
Method: OECD Test Guideline 405

Sensitization
Buehler Test Guinea pig: Does not cause skin sensitization.
Method: OECD Test Guideline 406

Repeated dose toxicity
Oral Rat / 28-day
NOAEL: >= 1000 mg/kg
Method: OECD Test Guideline 407
Test substance: Structurally similar substance

Assessment of STOT single exposure
Assessment: The substance or mixture is classified as specific target organ toxicant, single exposure, category 3 with narcotic effects.

Assessment of STOT repeat exposure
no evidence for hazardous properties

Risk of aspiration toxicity
No evidence of aspiration toxicity

Gentoxicity in vitro
Ames test Salmonella typhimurium negative
Method: OECD TG 471

chromosomal aberration V 79 cells negative
Method: OECD TG 473
Test substance: Structurally similar substance

gene mutation CHO-cells
negative
Method: OECD TG 476
Test substance: Structurally similar substance

Gentoxicity in vivo
Micronucleus test Mouse Oral negative
Method: OECD TG 474
Test substance: Structurally similar substance

Carcinogenicity
No evidence that cancer may be caused.

carcinogenicity assessment
Contains no carcinogenic substances as defined by NTP, IARC and/or OSHA.

Toxicity to reproduction
1 generation Oral Rat
NOAEL (No Observed Adverse Effect Level) of parents:
>= 1000 mg/kg

NOAEL F1:
>= 1000 mg/kg
Method: OECD Test Guideline 415
Test substance: Structurally similar substance

12. Ecological information

12.1. Toxicity

Toxicity to fish
LC50 Brachydanio rerio: > 100 mg/l / 96 h
Method: OECD TG 203

Toxicity in aquatic invertebrates
EC50 Daphnia magna: > 865 mg/l / 48 h
Method: OECD TG 202

Toxicity to algae
EC50 Desmodesmus subspicatus (green algae): > 1170 mg/l / 72 h
Method: OECD TG 201

NOEC Desmodesmus subspicatus (green algae): 221 mg/l / 72 h
Method: OECD TG 201

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

EC50 local activated sludge: > 1000 mg/l / 3 h
Method: OECD TG 209

NOEC local activated sludge: >= 1000 mg/l / 3 h
Method: OECD TG 209

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
SAFETY DATA SHEET
Protectosil® CHEM-TRETE® PB 350

Method: OECD 208

12.2. Persistence and degradability
Biodegradability
Result: 47 % Not readily biodegradable.
Method: OECD TG 301 B

12.3. Bioaccumulative potential
Bioaccumulation
low

12.4. Mobility in soil
Mobility
Adsorption on the floor: low.

12.5. Other adverse effects
Further Information
The data we have at our disposal do not necessitate identification concerning environmental hazard.

13. Disposal considerations

13.1. Waste treatment methods
Product
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.
Uncleaned packaging
Packaging material should be recycled or disposed of in accordance with federal, state and local regulations.

14. Transport information

D.O.T. Road/Rail
14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S.(Alkyltrialkoxysilane)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
14.5. Environmental hazards (Marine pollutant): --
14.6. Special precautions for user: Yes
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.
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.

Air transport ICAO-TI/IATA-DGR
14.1. UN number: UN 1993
14.2. UN proper shipping name: Flammable liquid, n.o.s. (Alkyltrialkoxysilane)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
14.5. Environmental hazards: --
14.6. Special precautions for user: Yes
   IATA-C: ERG-Code 3L
   Maximum Net Quantity per Package 220 L
   IATA-P: ERG-Code 3L
   Maximum Net Quantity per Package 60 L

Sea transport IMDG-Code/GGVSee (Germany)
14.1. UN number: UN 1993
14.2. UN proper shipping name: FLAMMABLE LIQUID, N.O.S.(Alkyltrialkoxysilane)
14.3. Transport hazard class(es): 3
14.4. Packing group: III
14.5. Environmental hazards (Marine pollutant): --
14.6. Special precautions for user: No
   EmS: F-E, S-E

14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code:
      for transport approval see regulatory information

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

US. EPA Emergency Planning and Community Right -To-Know Act (EPCRA) SARA Title III Section 302 Extremely Hazardous Substance (40 CFR 355, Appendix A)
   Remarks This material does not contain any components with a SARA 302 RQ.

SARA 304 - Emergency Release Notification
   Remarks This material does not contain any components with a section 304 EHS RQ.
US. EPA CERCLA Hazardous Substance s (40 CFR 302)

Remarks
This material does not contain any components with a CERCLA RQ.

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 Substance s
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
US. California Safe Drinking Water & Toxic Enforcement Act (Proposition 65)
This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.

An employer using HMIS/NFPA labeling must through training ensure that its employees are fully aware of the hazards of the chemicals used.

HMIS Ratings

Health: 2
Flammability: 2
Physical Hazard: 1

NFPA Ratings

Health: 2
Flammability: 2
Reactivity: 1

16. Other information
Further information

Revision date 07/25/2016

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  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
Er50  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
VOC    Volatile organic compounds
WHMIS  Workplace Hazardous Materials Information System
WHO    World Health Organization