



**SAFETY DATA SHEET****Protectosil® CHEM-TRETE 40 VOC**

Material no.		Version	<b>4.0 / US</b>
Specification	<b>141224</b>	Revision date	<b>04/21/2015</b>
Order number		Print date	<b>09/16/2015</b>
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Signal word	Danger
Hazard statement	H225 - Highly flammable liquid and vapor. H315 - Causes skin irritation.
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. P264 - Wash skin thoroughly after handling. 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. P332 + P313 - If skin irritation occurs: Get medical advice/ attention. P362 - Take off contaminated clothing and wash 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 + P235 - Store in a well-ventilated place. Keep cool.
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**

<b>• Triethoxyisobutylsilane</b>		<b>&gt;= 30% - &lt; 60%</b>
CAS-No.	17980-47-1	
Flammable liquids		Category 4
Skin irritation		Category 2
<b>• Ethanol; ethyl alcohol</b>		<b>&gt;= 30% - &lt; 60%</b>
CAS-No.	64-17-5	
Flammable liquids		Category 2

**4. First aid measures****4.1. Description of first aid measures****Inhalation**

If inhaled, remove to fresh air. If breathing is difficult, give oxygen. If unconscious, evaluate the need for artificial respiration. Get immediate medical attention.

**Skin contact**

Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Obtain medical attention. Wash clothing before reuse. Destroy or thoroughly clean contaminated shoes before reuse.

**Eye contact**

In case of contact, immediately flush eyes with plenty of water. Obtain medical attention if irritation develops.

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**Ingestion**

If swallowed, get medical attention immediately. Only induce vomiting if directed by a physician. Never give anything by mouth to an unconscious person.

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

None known

**4.3. Indication of any immediate medical attention and special treatment needed**

None known.

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**5. Fire-fighting measures****5.1. Extinguishing media**

Suitable extinguishing media: Use water spray or fog, foam, dry chemical or CO<sub>2</sub>.

Unsuitable extinguishing media: High volume water jet.

**5.2. Special hazards arising from the substance or mixture**

Flammable 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**

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

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

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**6. Accidental release measures****6.1. Personal precautions, protective equipment and emergency procedures**

Remove all sources of ignition. Ventilate the area. Wear personal protective equipment; see section 8.

**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.

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**7. Handling and storage****7.1. Precautions for safe handling**

Keep away from heat. Keep away from sparks, flames and other sources of ignition. Avoid breathing vapor or mist. Use with adequate ventilation. Avoid contact with eyes, skin and clothing. Wash thoroughly after handling. Follow all MSDS/Label precautions even after the container is emptied because it may retain product residue. Vapors may spread long distances and travel to areas away from the work site before igniting or flashing back to the vapor source.

Wear personal protective equipment; see section 8.

**7.2. Conditions for safe storage, including any incompatibilities**

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**Advice on protection against fire and explosion**

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.

Follow all MSDS/label precautions even after container is emptied because it may retain product residues.

**Storage**

Keep tightly closed in a dry, cool and well-ventilated place.

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**

• Ethanol; ethyl alcohol		
CAS-No.	64-17-5	
Control parameters	1000 ppm 1900 mg/m3	Permissible exposure limit:(OSHA Z1)
Control parameters	1000 ppm 1900 mg/m3	Time Weighted Average (TWA) Permissible Exposure Limit (PEL):(US CA OEL)
Control parameters	1000 ppm	Short Term Exposure Limit (STEL):(ACGIH)
Control parameters	1000 ppm 1900 mg/m3	Time Weighted Average (TWA):(TN OEL)

**8.2. Exposure controls****Engineering measure s**

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**

Use impermeable gloves.

**Eye protection**

Use chemical splash goggles or face shield.

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**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.

**9. Physical and chemical properties****9.1. Information on basic physical and chemical properties**

Physical state	liquid
Color	clear
Form	liquid
Odor	strong odor
Odor Threshold	no data available
pH	not determined
Melting point/range	no data available
Boiling point/range	78 °C (760 hPa)
Flash point	12.78 °C Method: Pensky-Martens C.C.
Evaporation rate	no data available
Flammability (solid, gas)	No data available
Lower explosion limit	not determined
Upper explosion limit	not determined
Vapor pressure	74 hPa (22 °C)
Relative density	0.8
Density	no data available
Water solubility	not miscible decomposition by hydrolysis
Partition coefficient: n-octanol/water	no data available
Autoignition temperature	no data available
Viscosity, dynamic	no data available
Viscosity, kinematic	no data available

**9.2. Other information**

Explosiveness Vapors can form explosive mixtures with air.

% VOC (gm/l) 600

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**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      No dangerous reactions known.

**10.4. Conditions to avoid**

Avoid high temperatures and sources of ignition.

**10.5. Incompatible materials**

Water, Acids, oxidizing substances

**10.6. Hazardous decomposition products**

Silicone polymers.

Stable under normal conditions.

Product will not undergo hazardous polymerization.

**11. Toxicological information****11.1. Information on toxicological effects**

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

**Toxicological information on components Isobutyltriethoxysilane**

Acute oral toxicity	LD50 Rat: > 5000 mg/kg Method: OECD Test Guideline 401
Acute inhalation toxicity	LC50 Rat: 5.88 mg/l / 4 h / dust/mist Method: OECD Test Guideline 403 Assessment: The substance or mixture has no acute inhalation toxicity
Acute dermal toxicity	LD50 Rat: > 2000 mg/kg Method: OECD Test Guideline 402 Assessment: The substance or mixture has no acute dermal toxicity
Skin irritation	Rabbit Skin irritation Method: OECD Test Guideline 404  Rapid evaporation of the liquid may cause frostbite.
Eye irritation	Rabbit No eye irritation Method: OECD Test Guideline 405

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Sensitization	maximization 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
Assessment of STOT single exposure	Assessment: The substance or mixture is not classified as specific target organ toxicant, single exposure.
Assessment of STOT repeat exposure	Assessment: The substance or mixture is not classified as specific target organ toxicant, repeated exposure.
Risk of aspiration toxicity	No aspiration toxicity classification
Gentoxicity in vitro	Ames test Salmonella typhimurium negative Method: OECD TG 471  chromosomal aberration Chinese hamster (V 79 -cells) negative Method: OECD TG 473  chromosomal aberration Chinese hamster (CHO K1 -cells) negative Method: OECD TG 476
Gentoxicity in vivo	chromosomal aberration Mouse Oral negative Method: OECD TG 474
Carcinogenicity	No evidence that cancer may be caused.
Toxicity to reproduction	Animal model trials have produced no evidence of fertility damage.

**Ethanol; ethyl alcohol**

Acute oral toxicity	LD50 Rat: 6200 mg/kg Test substance: Ethanol (IUCRID)
Acute inhalation toxicity	LC50 Rat: 95.6 mg/l / 4 h Test substance: Ethanol RTECS
Skin irritation	Rabbit Not irritating. Method: OECD Test Guideline 404 Test substance: Ethanol The liquid removes oil from the skin. Repeated skin contact can cause dry and fragile skin.
Sensitization	Magnusson & Kligman: not sensitizing Test substance: Ethanol

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	(IUCRID)
Mutagenicity assessment	This product may cause mutagenic effects.

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**12. Ecological information****12.1. Toxicity**

*no data available*

**12.2. Persistence and degradability**

Biodegradability                      no data available

**12.3. Bioaccumulative potential**

Bioaccumulation                      no data available

**12.4. Mobility in soil**

Mobility                                  no data available.

**12.5. Other adverse effects**

Further Information                      No ecotoxicological studies are available.

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**13. Disposal considerations****13.1. Waste treatment methods****Product**

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.

**Uncleaned packaging**

Packaging material should be recycled or disposed of in accordance with federal, state and local regulations.

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

14.1. UN number:	UN 1170
14.2. UN proper shipping name:	Ethanol solution
14.3. Transport hazard class(es):	3
14.4. Packing group:	II
14.5. Environmental hazards (Marine pollutant):	--
14.6. Special precautions for user:	No



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**Air transport ICAO-TI/IATA-DGR**

- 14.1. UN number: UN 1170  
14.2. UN proper shipping name: Ethanol solution  
14.3. Transport hazard class(es): 3  
14.4. Packing group: II  
14.5. Environmental hazards: --  
14.6. Special precautions for user: Yes  
IATA-C: ERG-Code 3L  
Maximum Net Quantity per Package 60 L  
IATA-P: ERG-Code 3L  
Maximum Net Quantity per Package 5 L

**Sea transport IMDG-Code/GGVSee (Germany)**

- 14.1. UN number: UN 1170  
14.2. UN proper shipping name: ETHANOL SOLUTION (ETHYL ALCOHOL SOLUTION)  
14.3. Transport hazard class(es): 3  
14.4. Packing group: II  
14.5. Environmental hazards (Marine pollutant): --  
14.6. Special precautions for user: No  
EmS: F-E, S-D  
14.7. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code: for transport approval see regulatory information

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**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

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**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**

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

- None listed

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:	3
Physical Hazard:	1

**NFPA Ratings**

Health:	2
Flammability:	3
Reactivity:	1

**16. Other information****Further information**

Revision date 04/21/2015

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

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**Legend**

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

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