

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	2 10 / 13

Signal word	Danger
Hazard statement	H225 - Highly flammable liquid and vapor. H315 - Causes skin irritation. H402 - Harmful to aquatic life.
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. P273 - Avoid release to the environment. 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

• Ethanol	60%	
CAS-No.	64-17-5	
Flammable liquids		Category 2
• NJTSR No.56705700001-5318P	30%	
CAS-No.	Trade Secret	
Flammable liquids		Category 4
Skin irritation		Category 2
Acute aquatic toxicity		Category 3

4. First aid measures**4.1. Description of first aid measures****General advice**

Remove contaminated or saturated clothing immediately and follow safe disposal procedures.

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.

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	3 10 / 13

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 for at least 15 minutes. If discomfort persists further: Consult an ophthalmologist.

Ingestion

If accidentally swallowed, rinse mouth thoroughly with water and afterwards, drink plenty of water. In case of discomfort, obtain medical attention.

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

After absorbing large amount of substance, apply therapy for irritative effects. If substance has been swallowed, early endoscopy is recommended in order to assess mucosa lesions in the esophagus and stomach which may appear. If necessary, suck away leftover substance. Allergic reactions cannot be excluded. Apply 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: Use water spray or fog, foam, dry chemical or CO₂.

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.

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

Ensure adequate ventilation. Use personal protective equipment. 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

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	4 10 / 13

7.1. Precautions for safe handling

Wear personal protective equipment (see section 8). Keep away from heat, sparks, flames and other sources of ignition. Keep container tightly closed. Use only with adequate ventilation.

Vapors may spread long distances and travel to areas away from the work site before igniting or flashing back to the vapor source.

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

• Ethanol		
CAS-No.	64-17-5	
Control parameters	1000 ppm 1900 mg/m ³	Permissible exposure limit:(OSHA Z1)
Control parameters	1000 ppm 1900 mg/m ³	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/m ³	Time Weighted Average (TWA):(TN OEL)

8.2. Exposure controls**Engineering measures**

Provide good ventilation or extraction.

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 aspirators.

Hand protection

Glove material for example, butyl-rubber

Material thickness 0.5 mm

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	5 10 / 13

Break through time \geq 480 min

Glove material for example, Fluorinated rubber (Viton)

Material thickness 0.4 mm

Break through time \geq 480 min

Use impermeable gloves.

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.

Selection of protective gloves to meet the requirements of specific workplaces.

Suitability for specific workplaces should be clarified with protective glove manufacturers.

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**

Physical state	liquid
Color	colorless
Form	liquid
Odor	alcohol-like
Odor Threshold	no data available
pH	no data available
Melting point/range	no data available
Boiling point/range	no data available
Flash point	14.44 °C
Evaporation rate	no data available
Flammability (solid, gas)	no data available
Lower explosion limit	not determined
Upper explosion limit	not determined
Vapor pressure	not determined
Relative vapor density	no data available
Relative density	no data available
Water solubility	no data available

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	6 10 / 13

Partition coefficient: n-octanol/water	no data available
Autoignition temperature	not determined
Thermal decomposition	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.

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

Keep away from heat and sources of ignition.

10.5. Incompatible materials

Water, oxidizing substances

10.6. Hazardous decomposition products

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**Ethanol**

Acute oral toxicity	LD50 Rat: 7060 mg/kg
	RTECS
Acute inhalation toxicity	LD50 Rat: 10470 mg/kg
	Method: OECD Test Guideline 401
	Literature
Acute inhalation toxicity	LC50 Rabbit: 117 - 125 mg/l / 4 h / vapor
	Method: OECD Test Guideline 403

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	7 10 / 13

	Literature
Acute dermal toxicity	LD50 Rabbit: > 20000 mg/kg Literature
Skin irritation	Rabbit not irritating Method: OECD Test Guideline 404 Literature
Eye irritation	Rabbit not irritating Method: OECD Test Guideline 405 Literature
Sensitization	Local Lymphnode Assay Mouse: No sensitizing effects. Method: OECD TG 429 Literature
Assessment of STOT single exposure	No evidence for hazardous properties
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 Literature
	Gene mutation TK +/- mouse lymphoma cell (L5178Y) negative Method: OECD TG 476 Literature
Mutagenicity assessment	This product contains an ingredient that has been shown to produce mutagenic effects in in vivo testing.

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

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	8 10 / 13

	Rapid evaporation of the liquid may cause frostbite.
Eye irritation	Rabbit No eye irritation Method: OECD Test Guideline 405
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.
Polysiloxane, containing propyl- and ethoxy groups	
Skin irritation	No skin irritation

12. Ecological information**12.1. Toxicity**

no data available

12.2. Persistence and degradability

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	9 10 / 13

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.

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

Waste must be disposed of in accordance with federal, provincial 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.

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 |

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)

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	10 10 / 13

- 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

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

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	11 10 / 13

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 :	0

NFPA Ratings

Health :	2
Flammability :	3
Reactivity :	0

16. Other information**Further information**

Revision date 04/30/2015

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.

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	12 10 / 13

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

SAFETY DATA SHEET**Protectosil® 40 H**

Material no.		Version	3.1 / US
Specification	159101	Revision date	04/30/2015
Order number		Print date	09/16/2015
		Page	13 10 / 13

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