

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 1 10 / 12 |

1. Identification**1.1. Product identifier**

Trade name Protectosil® BHN PLUS

1.2. Recommended use of the chemical and restrictions on use

Relevant applications identified For industrial use

1.3. Details of the supplier of the safety data sheetCompany 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 973-929-8060
Services:**2. Hazards identification****2.1. Classification of the substance or mixture**

Classification according to Regulation 29CFR 1910.1200

| | | |
|------------------------|------------|------|
| Flammable liquids | Category 3 | H226 |
| Skin irritation | Category 2 | H315 |
| Acute aquatic toxicity | Category 3 | H402 |

2.2. Label elements

Statutory basis Classification according to Regulation 29CFR 1910.1200

Symbol(s)



SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 2 10 / 12 |

| | |
|--|--|
| Signal word | Warning |
| Hazard statement | H226 - 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**3.1. Substances not applicable****3.2. Mixtures**

| | |
|-------------------------------------|--------------|
| • NJTSR No.56705700001-6651P | 92% |
| CAS-No. | Trade Secret |
| Flammable liquids | |
| Skin irritation | |
| • NJTSR No.56705700001-6740P | <= 8% |
| | Trade Secret |
| Flammable liquids | |

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

Remove contaminated or saturated clothing immediately and dispose of safely.

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 3 10 / 12 |

Inhalation

If aerosol or mists are inhaled, take affected persons out into the fresh air. Possible discomforts include severe irritation of mucus lining (nose, throat, eyes), cough, sneezing and flow of tears. In case of persistent discomfort, obtain medical attention immediately.

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

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes.

Do not allow contaminated water to contact the unaffected eye or face during irrigation of an affected eye. 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.

Never administer anything by mouth to an individual who rapidly losing consciousness, unconscious or convulsing.

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

If required, therapy of irritative effect.

If substance has been swallowed:

Early endoscopy in order to assess mucosa lesions in the oesophagus and stomach which may appear. If necessary, aspirate leftover substance.

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

Suitable extinguishing media: water spray, foam, Carbon dioxide (CO₂), dry powder

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

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**

Use personal protective equipment.

6.2. Environmental precautions

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

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 4 10 / 12 |

6.3. Methods and material for containment and cleaning up

Soak up with absorbent material, e.g., sand, silica gel, acid binder, universal binder or sawdust. Place in a marked, sealable container and dispose of in accordance with existing federal, provincial, state and local regulations.

Additional advice

Defect containers must be isolated and sealed immediately.

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 contact with eyes, skin and clothing. Avoid breathing vapor or mist. Use with adequate ventilation. Ground and bond containers when transferring material. Use explosion-proof equipment. Follow all MSDS/label precautions even after the container is emptied because it may retain product residues. Wash thoroughly after handling.

7.2. Conditions for safe storage, including any incompatibilities**Advice on protection against fire and explosion**

Normal measures for preventive fire protection.

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.

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

Protect from moisture.

German storage class

3 - Flammable liquids

8. Exposure controls / personal protection**8.1. Control parameters****8.2. Exposure controls****Engineering measures**

Use process enclosures, local exhaust ventilation or other engineering controls to control 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, Polychloroprene (PCP)

Material thickness 0.5 mm

Break through time \geq 480 min

Glove material for example, Fluorinated rubber (FKM)

Material thickness 0.4 mm

Break through time \geq 480 min

Use impermeable gloves.

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 5 10 / 12 |

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 to light yellow |
| Form | liquid |
| Odor | no data available |
| Odor Threshold | not determined |
| pH | not determined |
| Melting point/range | no data available |
| Boiling point/range | 186 °C (760 hPa) |
| Flash point | 48 °C Method: DIN EN ISO 2719 (Pensky-Martens, Closed Cup) |
| Evaporation rate | not determined |
| Flammability (solid, gas) | no data available |
| Lower explosion limit | not determined |
| Upper explosion limit | not determined |
| Vapor pressure | not determined |
| Relative density | 0.87 |
| Density | 0.87 g/cm ³ (20 °C) |
| Water solubility | negligible reacts slowly with water |
| Autoignition temperature | not determined |
| Thermal decomposition | not determined |
| Viscosity, dynamic | not determined |

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|--------|---------------|------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 6 10 / 12 |

9.2. Other information

% VOC (gm/l) 400

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

A void high temperatures and sources of ignition.

10.5. Incompatible materials

Water, Acids, Oxidizing agents

10.6. Hazardous decomposition products

Ethanol in case of hydrolysis, Silicone polymers.

This product is stable under normal storage conditions.

Product will not undergo hazardous polymerization.

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

No toxicological studies are available on the mixture.

Acute inhalation toxicity Acute toxicity estimate : 6.39 mg/l / 4 h / dust/mist
Method: Calculation method

carcinogenicity assessment Contains ethylbenzene which is classified as an IARC 2B carcinogen (possible carcinogenic to humans).

Further information The toxicological properties of this product have not been fully investigated.

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

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|--------|---------------|------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 7 10 / 12 |

| | | |
|------------------------------------|--|---|
| | Method: | OECD Test Guideline 404 |
| | | 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: Method: | > 1000 mg/kg 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. |

12. Ecological information**12.1. Toxicity**

No ecotoxicological studies are available on the mixture.

12.2. Persistence and degradability**12.3. Bioaccumulative potential**

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|--------|---------------|------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 8 10 / 12 |

12.4. Mobility in soil**12.5. Other adverse effects**

Further Information

The data is based to the main component.

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

Waste must be disposed of in accordance with federal, state and local regulations. Incineration is the preferred method.

Uncleaned packaging

Do not reuse empty containers and dispose of in accordance with the regulations issued by the appropriate local authorities.

If there is product residue in the emptied container, follow directions for handling on the container's label.

Incorrect disposal or reuse of this container is illegal and can be dangerous.

Other countries: observe the national 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. (Alkyl ester) |
| 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 |

Air transport ICAO-TI/IATA-DGR

- | | |
|-------------------------------------|---------------------------------------|
| 14.1. UN number: | UN 1993 |
| 14.2. UN proper shipping name: | Flammable liquid, n.o.s.(Alkyl ester) |
| 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.(Alkyl ester) |
| 14.3. Transport hazard class(es): | 3 |
| 14.4. Packing group: | III |
| 14.5. Environmental hazards (Marine pollutant): | -- |

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 9 10 / 12 |

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

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 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

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 10 10 / 12 |

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 05/01/2015

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.

SAFETY DATA SHEET**Protectosil® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 11 10 / 12 |

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® BHN PLUS**

| | | | |
|---------------|---------------|---------------|-------------------|
| Material no. | | Version | 4.1 / US |
| Specification | 141246 | Revision date | 05/01/2015 |
| Order number | | Print date | 09/16/2015 |
| | | Page | 12 10 / 12 |

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