

SAFETY DATA SHEET

FACTOR Urease Inhibitor

1. Identification

Trade Name: Factor Urease Inhibitor

Family: Urease inhibitor

Formula: Proprietary NBPT blend

Manufacturer: Rosens's Inc; 700 SW 291 Hwy, Ste. 204, Liberty, MO 64068.

Phone: 877-781-9191

For Chemical Emergencies call Chemtrec at 800-424-9300

For Other Emergencies call 911 and/or Appropriate Regulatory Agencies

2. Hazard Identification

Label elements

HCS 2012 (29 CFR 1910.1200)

Pictogram :



Signal Word: Danger

Hazard Statements:

Combustible liquid. Causes serious eye damage. Causes Skin Irritation.

Suspected of damaging fertility or the unborn child.

May cause respiratory irritation.

Precautionary Statements:

Prevention

Keep away from heat/sparks/open flames/hot surfaces.- No smoking.

Do not handle until all safety precautions have been read and understood.

Use only outdoors or in a well-ventilated area.

Avoid breathing dust, fume, gas, vapors or spray mist.

Wear eye protection/ face protection.

Use personal protective equipment as required.

Response

If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

If exposed or concerned: Get medical advice/ attention.

Immediately call a POISON CENTER or doctor/ physician.

If inhaled: Remove person to fresh air and keep comfortable for breathing. Call a poison center or doctor if feeling unwell.

In case of fire: use dry sand, dry chemical, alcohol resistant foam, carbon dioxide or water spray to extinguish.

If on skin: Wash with plenty of water. If irritation occurs: Get medical advice/attention.

Storage

Store locked up. Keep container tightly closed.

Store in a well ventilated place. Keep cool.

Disposal

Dispose of contents/container in accordance with all applicable regulations.

Other hazards which do not result in classification

Repeated or prolonged contact with skin may cause dermatitis garlic-like odor of the breath

3. Composition/Information on Ingredients

Mixture

Synonyms : PROPRIETARY NBPT BLEND

Hazardous Ingredients and Impurities

Chemical Name	Identification Number CAS-No.	Concentration (%)
Phosphorothioic triamide, N-butyl-	94317-64-3	20 - 40
Proprietary solvent blend	Trade secret	60 - 80

*The specific chemical identity and/or exact percentage (concentration) of composition has been withheld as a trade secret.

4. First Aid Measures

IF SWALLOWED:

Drink 8 – 16 ounces of water if conscious. Call a physician or poison control center

immediately. Do not induce vomiting or give anything by mouth to an unconscious person.

IF IN EYES:

Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing and immediately call a poison control center or physician.

IF ON SKIN:

Wash affected skin with soap and water. Remove contaminated clothing and launder clothing before reuse. If irritation occurs, get medical attention or advice.

IF INHALED:

Remove to fresh air and keep comfortable for breathing. Call a poison center or doctor if feeling unwell. If not breathing, give artificial resuscitation. If breathing is difficult, give oxygen and call a physician.

Most important symptoms and effects, both acute and delayed

Risks

Skin contact may aggravate existing skin disease

Inhalation of product may aggravate existing chronic respiratory problems such as asthma, emphysema or bronchitis

Indication of any immediate medical attention and special treatment needed

Notes to physician

All treatments should be based on observed signs and symptoms of distress in the patient. Consideration should be given to the possibility that overexposure to materials other than this product may have occurred.

Treat symptomatically.

There is no specific antidote available.

5. Fire-fighting Measures

Flash Point (TCC): ≥ 158 deg. F

This product does not sustain combustion at 60 and 75 deg C (140 and 167 deg F) [ASTM D4206, UN TDG Test L.2 Sustained Combustibility]

Extinguishing Media: Dry sand, dry chemical, alcohol resistant foam, carbon dioxide or water spray.

Unsuitable extinguishing media: High volume water jet (frothing possible)

Special Fire Fighting Procedures: Special protective equipment for fire-fighters:

Firefighters should wear NIOSH/MSHA approved self-contained breathing apparatus and full protective clothing.

Specific hazards during fire fighting:

Container may rupture on heating.
Highly toxic gases are released.
Hazardous decomposition products formed under fire conditions.
On combustion or on thermal decomposition (pyrolysis), releases: Nitrogen oxides (NO_x)
Sulfur oxides
Carbon oxides
Oxides of phosphorus
Ammonia
Hydrogen sulfide

6. Accidental Release Measures

Personal precautions, protective equipment and emergency procedures

Use personal protective equipment.

For further information refer to section 8 "Exposure controls / personal protection."

Environmental precautions

Do not flush into surface water or sanitary sewer system.

Take all necessary measures to avoid accidental discharge of products into drains and waterways due to the rupture of containers or transfer systems.

Spills may be reportable to the National Response Center (800-424-8802) and to state and/or local agencies

Methods and materials for containment and cleaning up

Prohibition: Use only non-sparking tools.

Methods for containment: Stop leak if safe to do so. Dam up with sand or inert earth (do not use combustible materials).

Recovery: Soak up with inert absorbent material. Shovel or sweep up. Keep in suitable, closed containers for disposal. Never return spills in original containers for re-use.

Decontamination / cleaning: Clean contaminated surface thoroughly. Flush with plenty of water. Recover the cleaning water for subsequent disposal. Decontaminate tools, equipment and personal protective equipment in a segregated area.

Disposal: Dispose of in accordance with all applicable regulations.

7. Handling and Storage Information

Handling: This product must only be handled by specifically trained employees. Do not use sparking tools. Avoid contact with skin and eyes. Do not ingest. Avoid inhalation of vapor or

mist. Ensure all equipment is electrically grounded before beginning transfer operations. Wash hands after handling, and before eating, drinking, chewing gum, using tobacco, or using the toilet. Remove PPE immediately after handling this product. Wash the outside of gloves before removing. As soon as possible, wash thoroughly and change into clean clothing.

Storage: Store in original container. Keep containers tightly closed in a dry and well ventilated place. Store locked up. Do not allow product to freeze. Keep away from heat/sparks/open flames/hot surfaces and sources of ignition. Do not mix with incompatible materials. Store above 32°F and below 104°F. Do not allow water or other chemicals to be introduced into contents of container. Do not contaminate water sources with equipment wash water, spray disposal wastes or by cleaning of equipment. Do not store near feed or food or consumer products.

8. Exposure Controls / Personal Protection Information

These recommendations provide general guidance for handling this product. Because specific work environments and material handling practices vary, safety procedures should be developed for each intended application. While developing safe handling procedures, do not overlook the need to clean equipment and piping systems for maintenance and repairs. Waste resulting from these procedures should be handled in accordance with Section 13: Disposal Considerations.

Engineering Measures:

Where engineering controls are indicated by use conditions or a potential for excessive exposure exists, the following traditional exposure control techniques may be used to effectively minimize employee exposures: Effective exhaust ventilation system.

Personal Protective Equipment (PPE):

Respiratory protection:

When respirators are required, select NIOSH/MSHA approved equipment based on actual or potential airborne concentrations and in accordance with the appropriate regulatory standards and/or industrial recommendations.

Hand protection:

Recommended preventive skin protection: Gloves

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. Also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion, and the contact time.

Eye protection:

Eye and face protection requirements will vary dependent upon work environment conditions and material handling practices. Appropriate ANSI Z87 approved equipment should be selected for the particular use intended for this material.

Eye contact should be prevented through the use of:

Safety glasses with side-shields

Face-shield

Skin and body protection:

Recommended preventive skin protection:

Footwear protecting against chemicals and impervious clothing.

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures:

Personal hygiene is an important work practice exposure control measure and the following general measures should be taken when working with or handling this material:

- 1) Do not store, use, and/or consume foods, beverages, tobacco products, or cosmetics in areas where this material is stored.
- 2) Wash hands and face carefully before eating, drinking, using tobacco, applying cosmetics, or using the toilet.
- 3) Wash exposed skin promptly to remove accidental splashes or contact with material.

Protective measures:

Ensure that eyewash stations and safety showers are close to the workstation location.

Emergency equipment immediately accessible, with instructions for use. Use non-sparking tools only. The protective equipment must be selected in accordance with current local standards and in cooperation with the supplier of the protective equipment. Selection of appropriate personal protective equipment should be based on an evaluation of the performance characteristics of the protective equipment relative to the task(s) to be performed, conditions present, duration of use, and the potential hazards, and/or risks that may occur during use.

9. Physical Chemical Properties Information

pH (5% Solution): 6.0 - 7.0

Flash Point (TCC): ≥ 158 deg. F

This product does not sustain combustion at 60 and 75 deg C (140 and 167 deg F) [ASTM D4206, UN TDG Test L.2 Sustained Combustibility]

Freezing Point Range: $< 32^{\circ}\text{F}$.

% Volatile by Volume: Not available

Density: 8.9 pounds per gallon

Solubility in Water: Soluble

Evaporation Rate: (Butyl Acetate = 1) : < 1

Appearance & Odor: Green liquid free of haze or sediment; mild citrus-like odor

This physical chemical properties information are typical values based on material tested but may vary from sample to sample. Typical values should not be construed as a guaranteed analysis of any specific lot or as specification items.

10. Stability and Reactivity Information

Stability: Do not allow product to freeze. Store above 32°F.

Conditions To Avoid: Freezing temperatures, heat and sources of ignition.

Incompatible Materials:

Strong bases

Strong oxidizing agents

Strong reducing agents.

Perchloric acid Mineral acids. Organic acids

Metals in presence of moisture

Zinc

Mild steel

Carbon steel

Halogenated compounds

Hazardous Decomposition Products:

Carbon oxides

Sulfur oxides

Oxides of phosphorus

Nitrogen oxides (NO_x) Ammonia Formaldehyde Dimethyl disulfide PHOSPHINE

Hazardous Polymerization: Will not occur.

11. Toxicological Information

Acute toxicity

Acute oral toxicity: Not classified as harmful if swallowed According to the data on the components According to the classification criteria for mixtures.

Acute inhalation toxicity: Not classified as harmful by inhalation According to the data on the components According to the classification criteria for mixtures.

Acute dermal toxicity: Not classified as harmful by contact with skin According to the data on the components According to the classification criteria for mixtures.

Acute toxicity (other routes of administration): no data available

Skin corrosion/irritation

Skin irritation: Slightly irritating to rabbits on cutaneous application.

Data available only for some components. Unpublished reports

Active ingredient

Serious eye damage/eye irritation

Eye irritation: Risk of serious damage to eyes.

May cause irreversible eye damage. According to the data on the components According to the

classification criteria for mixtures.

Respiratory or skin sensitization

Sensitization: Not classified as sensitizing by skin contact According to the data on the components According to the classification criteria for mixtures.

Mutagenicity

Genotoxicity in vitro: Product is not considered to be genotoxic According to the data on the components According to the classification criteria for mixtures.

Genotoxicity in vivo: Product is not considered to be genotoxic According to the data on the components According to the classification criteria for mixtures.

Carcinogenicity

Carcinogenicity : no data available

This product does not contain any ingredient designated as probable or suspected human carcinogens by: NTP, IARC, OSHA, ACGIH

Toxicity for reproduction and development

Toxicity to reproduction / fertility: Fertility study 2 generations; Possible risk of impaired fertility. According to the data on the components According to the classification criteria for mixtures.

Developmental Toxicity/Teratogenicity: no data available

STOT

STOT-single exposure: no data available

STOT-repeated exposure: no data available

Experience with human exposure

Experience with human exposure:

Inhalation: Symptoms: Nose bleeding, vomiting.

Data available only for some components. Published data

Active ingredient

Aspiration toxicity

Aspiration toxicity : no data available

12. Ecological Information

Ecotoxicity information is not available for this product. NBPT has a very low toxicity to aquatic organisms

13. Disposal Information

Do not reuse product containers. Triple rinse (or equivalent), then offer for recycling at an ACRC site (go to <http://www.acrecycle.org/> for locations) or by reconditioning, or puncture and dispose of in a sanitary landfill or by other procedures approved by local, state and federal regulations.

This product is NOT an EPA hazardous waste.

14. Transport Information

US DOT:

Shipping Name: NOT REGULATED

TDG:

Shipping Name: NON DANGEROUS

IMO:

Shipping Name: NOT REGULATED

IATA:

Shipping Name: NOT REGULATED

15. Regulatory Information

NFPA RATINGS: Least = 0 Slight = 1 Moderate = 2 High = 3 Severe = 4

Ratings for this product: Health – 2 Flammability – 1 Instability – 0 Special

Hazards – None Specified

SARA Title III Hazard Category: Immediate Y Fire N

Sudden Release of Pressure N Delayed N Reactive N

CERCLA Reportable Quantity

Dichloromethane – CAS-No 75-09-2 – Reportable Quantity 1000 lb

SARA, Title III, Section 313: Not listed

CA Proposition 65: Not listed

16. Other Information

Revised: 01/21/2016

The information provided in this Safety Data Sheet has been compiled from our experience and data presented in various technical publications. It is the users responsibility to determine the suitability of this information for the adoption of safety precautions as may be necessary. We reserve the right to revise Safety Data Sheets from time to time as new technical information becomes available. The information contained herein is furnished without warranty of any kind.