1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION AND OF THE COMPANY/UNDERTAKING

Product identifier
Product Name Enterotoxin (CPE), from Clostridium perfringens.
Product Code BTX-120

Other means of identification
UN/ID No. UN3462
Synonyms Not available.

Recommended use of the chemical and restrictions on use
Recommended Use Material is authorized for research, non-commercial purposes only.
Uses Advised Against Not available.

Details of the supplier of the safety data sheet
Supplier Address ATCC
10801 University Blvd.,
Manassas, VA,
USA, 20110-2204

Emergency telephone number
Company Phone Number (800) 359-7370/ (703) 365-2727
24 Hour Emergency Phone Number Chemtrec (US): 1-800-424-9300.
Domestic: (703) 365-2710.
International: +1(703)-527-3887.

2. HAZARDS IDENTIFICATION

Classification

Health Hazards
Not classified.

Physical Hazards
Not classified.

OSHA Regulatory Status
This chemical has biological/pharmaceutical effects on animal or human bodily functions or systems, but does not reach the criteria of any specific GHS classification label. Therefore, it is considered hazardous by “other hazards” but not classified. (29 CFR 1910.1200; Revision 3)

Label elements

<table>
<thead>
<tr>
<th>Appearance</th>
<th>Physical State</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lyophilized solid.</td>
<td>Solid.</td>
<td>Not available</td>
</tr>
</tbody>
</table>

Emergency Overview

Normal precautions common to safe manufacturing practice should be followed in handling and storage.
Precautionary Statements - Prevention
Wash face, hands and any exposed skin thoroughly after handling. 
Do not eat, drink, or smoke when using this product.

Precautionary Statements - Response
IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician. 
Specific treatment (see Product Sheet and seek Medical Treatment immediately). 
Rinse mouth.

Precautionary Statements - Storage
Store locked up.

Precautionary Statements - Disposal
Discharge, treatment, or disposal are subject to federal, state, and/or local laws.

Hazards not otherwise classified (HNOC)
Biosafety Level 2

Other information
Not available.

3. COMPOSITION/INFORMATION ON INGREDIENTS
This product is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200; Revision 3).

<table>
<thead>
<tr>
<th>Chemical Name</th>
<th>CAS No.</th>
<th>Weight-%</th>
</tr>
</thead>
<tbody>
<tr>
<td>CPE</td>
<td>N/A</td>
<td>100</td>
</tr>
</tbody>
</table>

NR-10358 is lyophilized, therefore there is no liquid in the vial. The customer is instructed to rehydrate with a 100-uL volume of de-ionized sterile water.

4. FIRST AID MEASURES

First aid measures

Eye Contact
Rinse eyes cautiously with lukewarm, gently flowing water for several minutes, while holding the eyelids open. Remove contact lenses, if present and easy to do. Continue rinsing for a duration of 15-20 minutes. Take care not to rinse contaminated water into the unaffected eye or onto the face. If eye irritation persists: Get medical advice/attention.

Skin Contact
Take off immediately all contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Wash with plenty of lukewarm, gently flowing water for a duration of 15-20 minutes or until medical aid is available. Immediately call a POISON CENTER/doctor. Wash contaminated clothing before re-use or discard. If skin irritation occurs: Get medical advice/attention.

Inhalation
Remove source of exposure or move person to fresh air and keep comfortable for breathing. If experiencing respiratory symptoms: Call a POISON CENTER/doctor. If breathing is difficult, trained personnel should administer emergency oxygen if advised to do so by the POISON CENTER/doctor. Immediately call a POISON CENTER/doctor.

Ingestion
Rinse mouth. Immediately call a POISON CENTER/doctor. If breathing has stopped, immediately start cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED). Treatment of fluid and electrolyte loss is usually achieved through oral rehydration.
Most important symptoms and effects, both acute and delayed

Symptoms
Not available.

Indication of any immediate medical attention and special treatment needed

Note to Physicians
Treat symptomatically.

5. FIRE-FIGHTING MEASURES

Suitable extinguishing media
Use extinguishing measures that are appropriate to local circumstances and the surrounding environment.

Unsuitable Extinguishing Media
None known.

Specific hazards arising from the chemical
Not available.

Hazardous Combustion Products
Not available.

Explosion data
Sensitivity to Mechanical Impact
None known.
Sensitivity to Static Discharge
None known.

Protective equipment and precautions for firefighters
As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions, protective equipment and emergency procedures

Personal Precautions
Wear appropriate personal protective equipment (see Section 8). Keep unnecessary personnel away. Ensure adequate ventilation, especially in confined areas.

Environmental precautions

Environmental Precautions
See Section 12 for additional ecological information.

Methods and material for containment and cleaning up

Methods for Containment
Prevent further leakage or spillage if safe to do so.

Methods for Cleaning Up
Patient/Victim: Wash with soap and water. Work clothes should be laundered separately. Launder contaminated clothing before re-use. Do not take clothing home. Equipment/Environment: Allow aerosols to settle; wearing protective clothing, gently cover spill with paper towel and apply 1% sodium hypochlorite, starting at perimeter and working towards the center; allow sufficient contact time before clean-up (30 min).

7. HANDLING AND STORAGE

Precautions for safe handling

Advice on Safe Handling
Use aseptic procedures. Decontamination of work surfaces daily, after finishing work and following spills (Solutions of sodium hypochlorite 0.1% or sodium hydroxide 0.1 N readily inactivate the toxin). Standard microbiological practices should be followed. Do not get in eyes, on skin or on clothing. Do not breathe vapors or mist. Use good personal hygiene practices. Eating, drinking and smoking in work areas is prohibited. Remove contaminated clothing and protective equipment before entering eating areas. Eyewash stations and
showers should be available in areas where this material is used and stored. Access to the laboratory is restricted when work is being conducted. A biohazard sign with relevant information should be posted at the entrance. "Toxins in Use - Authorized Personnel Only" should be clearly posted. Frequent and careful hand-washing and laboratory decontamination should be strictly enforced. Ventilation Requirements: Use only with adequate ventilation to control air contaminants to their exposure limits. Required HEPA-filtered vacuum lines.

Conditions for safe storage, including any incompatibilities

**Storage Conditions**

All containers must be properly labelled. Store in approved containers and protect against physical damage. Keep containers securely sealed when not in use. Containers that have been opened must be carefully resealed to prevent leakage. Empty containers retain residue and may be dangerous. The product is provided frozen and should be stored at -20°C to -40°C immediately upon arrival. At colder temperatures, the rubber stopper may become brittle and compromise the seal. Reconstituted material should be stored in aliquots at -80°C for no longer than 2 months.

**Packaging materials**

Packed aseptically in glass serum vials.

**Incompatible materials**

Not available.

8. EXPOSURE CONTROLS/PERSOANAL PROTECTION

**Control parameters**

**Exposure Guidelines**

This product, as supplied, does not contain any hazardous materials with Occupational Exposure Limits (OEL) established by the region-specific regulatory bodies.

**Appropriate engineering controls**

**Engineering Controls**

The health hazard risks of handling this material are dependent on factors, such as physical form and quantity. Site-specific risk assessments should be conducted to determine the appropriate exposure control measures. Good general ventilation should be used. Ventilation rates should be matched to conditions. If applicable, use process enclosures, local exhaust ventilation, or other engineering controls to maintain airborne levels below recommended exposure limits. If exposure limits have not been established, maintain airborne levels as low as reasonably achievable.

**Individual protection measures, such as personal protective equipment**

**Eye/Face Protection**

In laboratory, medical or industrial settings, safety glasses with side shields are highly recommended. The use of goggles or full face protection may be required depending on the industrial exposure setting. Contact a health and safety professional for specific information.

**Skin and Body Protection**

In laboratory, medical or industrial settings, gloves and lab coats are recommended. The use of additional personal protective equipment such as shoe coverings, gauntlets, hoods or head coverings may be necessary. Contact a health and safety professional for specific information.

**Respiratory Protection**

Respirators may be required for certain laboratory and manufacturing tasks if engineering controls do not maintain airborne concentrations below recommended exposure limits (where applicable) or to an acceptable level (where the exposure limits have not been established). Workplace risk assessments should be completed before specifying and implementing respirator usage. All respirators must conform to specifications for efficiency and performance indicated by OSHA Standard 29 CFR 1910.134.

**General Hygiene Considerations**

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment.
9. PHYSICAL AND CHEMICAL PROPERTIES

Information on basic physical and chemical properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Values</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Physical State</td>
<td>Solid</td>
<td></td>
</tr>
<tr>
<td>Appearance</td>
<td>Lyophilized solid.</td>
<td></td>
</tr>
<tr>
<td>Color</td>
<td>White</td>
<td></td>
</tr>
<tr>
<td>Odor</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Odor Threshold</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>pH</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Melting Point/Freezing Point</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Boiling Point/Boiling Range</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Flash Point</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Evaporation Rate</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Flammability (solid, gas)</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Flammability Limit in Air</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Upper Flammability Limit:</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Lower Flammability Limit:</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Vapor Pressure</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Vapor Density</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Specific Gravity</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Water Solubility</td>
<td>Soluble in deionized water.</td>
<td></td>
</tr>
<tr>
<td>Solubility in Other Solvents</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Partition Coefficient</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Autoignition Temperature</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Decomposition Temperature</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Kinematic Viscosity</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Dynamic Viscosity</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Explosive Properties</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Oxidizing Properties</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Softening Point</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Molecular Weight</td>
<td>~35 kDa</td>
<td></td>
</tr>
<tr>
<td>VOC Content (%)</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Density</td>
<td>Not available.</td>
<td></td>
</tr>
<tr>
<td>Bulk Density</td>
<td>Not available.</td>
<td></td>
</tr>
</tbody>
</table>

Other information

10. STABILITY AND REACTIVITY

Reactivity
Not available.

Chemical stability
Stable under normal conditions.

Possibility of hazardous reactions
Not available.

Conditions to avoid
Avoid prolonged heating. Reconstituted material should be stored in aliquots at -80°C for no longer than 2 months.

Incompatible materials
Not available.

Hazardous decomposition products
Not available.
11. TOXICOLOGICAL INFORMATION

Product Information

Acute Toxicity
No data available.

Information on toxicological effects

Symptoms
Not available.

Delayed and immediate effects as well as chronic effects from short- and long-term exposure

Skin Corrosion/Irritation
No data available.

Serious Eye Damage/Eye Irritation
No data available.

Sensitization
No data available.

Germ Cell Mutagenicity
No data available.

Carcinogenicity
No data available.

Reproductive Toxicity
No data available.

STOT - Single Exposure
Not classified.

STOT - Repeated Exposure
Not classified.

Aspiration Hazard
Not applicable.

12. ECOLOGICAL INFORMATION

Ecotoxicity
No data available.

Persistence and degradability
No data available.

Bioaccumulation
No data available.

Mobility
No data available.

Other adverse effects
No data available.

13. DISPOSAL CONSIDERATIONS

Waste treatment methods

Disposal of Wastes
Disposal should be in accordance with applicable regional, national and local laws and regulations.

Contaminated Packaging
Disposal should be in accordance with applicable regional, national and local laws and regulations. Do not reuse container.

U.S. EPA Waste Number
Not available.
California Hazardous Waste Codes  Not available.

This product does not contain substances that are listed with the State of California as hazardous waste.

### 14. TRANSPORT INFORMATION

<table>
<thead>
<tr>
<th>DOT</th>
<th>Regulated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN/ID No.</td>
<td>UN3462</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>Toxins, extracted from living sources, liquid, n.o.s. (Enterotoxin (CPE) from <em>Clostridium perfringens</em>).</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>Class 6.1</td>
</tr>
<tr>
<td>Packing Group</td>
<td>I</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>IATA</th>
<th>Regulated.</th>
</tr>
</thead>
<tbody>
<tr>
<td>UN/ID No.</td>
<td>UN3462</td>
</tr>
<tr>
<td>Proper shipping name</td>
<td>Toxins, extracted from living sources, liquid, n.o.s. (Enterotoxin (CPE) from <em>Clostridium perfringens</em>).</td>
</tr>
<tr>
<td>Hazard Class</td>
<td>Class 6.1</td>
</tr>
<tr>
<td>Packing Group</td>
<td>I</td>
</tr>
</tbody>
</table>

### 15. REGULATORY INFORMATION

#### U.S. Federal Regulations

**SARA 313**

Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA). This product does not contain any chemicals subject to the reporting requirements of the Act and Title 40 of the Code of Federal Regulations, Part 372.

**SARA 311/312 Hazard Categories**

- **Acute Health Hazard**: No
- **Chronic Health Hazard**: No
- **Fire Hazard**: No
- **Sudden Release of Pressure Hazard**: No
- **Reactive Hazard**: No

**CWA (Clean Water Act)**

This product does not contain any substances regulated as pollutants pursuant to the Clean Water Act (40 CFR 122.21 and 40 CFR 122.42).

**CERCLA**

This material, as supplied, does not contain any substances regulated as hazardous substances under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA) (40 CFR 302) or the Superfund Amendments and Reauthorization Act (SARA) (40 CFR 355). There may be specific reporting requirements at the local, regional, or state level pertaining to releases of this material.

#### U.S. State Regulations

**California Proposition 65**

No component is on the Prop 65 list.

**U.S. State Right-to-Know Regulations**

This product does not contain any substances regulated by state right-to-know regulations.

**U.S. EPA Label Information**

EPA Pesticide Registration Number  Not applicable.

### 16. OTHER INFORMATION
Prepared By: IES Engineers
Issue Date: 05-Jun-2018
Revision Date: Not applicable.
Revision Note: New SDS.

Disclaimer
BEI Resources considers that the information contained in this Safety Data Sheet is accurate, and while it is provided in good faith, it is without warranty of any kind, expressed or implied. The information contained herein is designated only as guidance for safe handling, storage and use of the substance and is not a specification nor does it guarantee any specific properties. Only competent personnel, within a controlled environment should handle all chemicals. BEI Resources is not to be held liable for any loss, injury or damage from contact with the product.

End of Safety Data Sheet