

## Material Safety Data Sheet

Botulinum Neurotoxin Type E Complex, Nicked, from *Clostridium botulinum*  
Product #140A, 140B

### 1. PRODUCT AND COMPANY INFORMATION

Product Name : Botulinum Neurotoxin Type E Complex, Nicked, from  
*Clostridium botulinum*

Synonym : BoNT/E Complex, Nicked

Product Number : 140A, 140B

  

Company : List Biological Laboratories, Inc.  
540 Division Street  
Campbell, CA 95008-6906, USA

Telephone : (408) 866-6363  
(800) 726-3213

Fax : (408) 866-6364

24 Hour Emergency Phones : (800) 424-9300 Chemtrec® Domestic  
Chemtrec® Customer #13248 (703) 527-3887 Chemtrec® International

### 2. COMPOSITION / INFORMATION ON INGREDIENTS

Product #: 140A

Component	CAS No.	Percent (%)
Botulinum Neurotoxin Type E Complex, Nicked	N/A	~2
Citric Acid, monohydrate	77-92-9	~41
Sodium Citrate, dihydrate	6132-04-3	~57
Lactose	9004-34-6	~0.2

Product #: 140B

Component	CAS No.	Percent (%)
Botulinum Neurotoxin Type E Complex, Nicked	N/A	~16
Citric Acid, monohydrate	77-92-9	~35
Sodium Citrate, dihydrate	6132-04-3	~49
Lactose	9004-34-6	~0.2

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

Warning. Irritant. Harmful.

Avoid contact with eyes, skin and clothing. Avoid prolonged contact with eyes, skin and clothing. Do not ingest. Avoid breathing dust. Keep container closed. Use only with adequate ventilation. Wash thoroughly after handling.

This product is a Tier 1 Select Agents & Toxins. Tier 1 Select Agents & Toxins are the organisms and toxins that have been designated by APHIS and/or CDC as presenting the greatest risk of deliberate misuse with the most significant potential for mass casualties or devastating effects to the economy,

critical infrastructure or public confidence.

#### **NFPA Rating**

**Health Hazard:** 4

**Fire:** 0

**Reactivity Hazard:** 0

#### **HMIS Rating**

**Health Hazard:** 4\*

**Fire:** 0

**Physical Hazard:** 0

#### **Potential Health Effects**

**Inhalation** May be harmful if inhaled. Causes respiratory tract irritation

**Skin** Causes skin irritation

**Eyes** Causes eye irritation

**Ingestion** Harmful if swallowed

For additional information on toxicity, please refer to Section 11.

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## **4. FIRST AID MEASURES**

### **General Advice**

Move affected person out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

Seek medical attention, since supportive therapy will be required if symptoms occur. Immune serum (available from the U.S. Public Health Service, Centers for Disease Control, at 404-639-3311 days or 404-639-2888 after hours) may also be a part of the medical treatment.

### **If inhaled**

If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

### **In case of skin contact**

Wash off with soap and plenty of water. Consult a physician.

### **In case of eye contact**

Flush eyes with water as a precaution. Consult a physician.

### **If swallowed**

Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

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## **5. FIREFIGHTING MEASURES**

### **Flammability of the product**

Not flammable or combustible.

### **Extinguishing media**

Use extinguishing media appropriate to surrounding fire conditions.

### **Protective equipment for fire-fighters**

Use an approved/certified respirator.

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## **6. ACCIDENTAL RELEASE MEASURES**

### **Personal precautions**

Wear appropriate laboratory attire including lab coat, gloves and safety glasses. Nitrile gloves are recommended when handling lyophilized material.

### **Methods and materials for containment and cleaning up**

In case of a spill or a release, take precautions to minimize worker exposure. For spills onto surface areas, the contaminated surface should be thoroughly sprayed or rinsed for at least five minutes with at

least a 0.5% sodium hypochlorite solution (equivalent to a 1:10 dilution of household bleach), then wiped dry. Autoclaving may be applied to contaminated material which is in solution or to which the autoclave steam has access. Autoclaving at  $\geq 121^{\circ}\text{C}$ ,  $\geq 15$  psi in a validated cycle will render the product safe.

Hold all material for appropriate disposal as described in Section 13 DISPOSAL CONDITIONS.

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## 7. HANDLING AND STORAGE

### Precautions for safe handling

Wear appropriate laboratory attire including lab coat, gloves and safety glasses. Nitrile gloves are recommended when handling lyophilized material.

### Recommended storage temperature

Store at  $2 - 8^{\circ}\text{C}$  prior to and following reconstitution.

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## 8. EXPOSURE CONTROLS / PERSONAL PROTECTION

### Occupational Exposure Limit

None identified.

### Personal Protective Equipment

#### Eyes

Wear safety goggles or glasses.

#### Skin

Handle with appropriate gloves. Wear nitrile gloves when handling the product in the lyophilized form. Wear appropriate laboratory clothing / lab coat.

#### Respiratory protection

Use respirators and components tested and approved under appropriate government standards; or, ensure adequate ventilation using engineering controls, such as, a biological safety cabinet or chemical fume hood.

#### Hygiene measures

Avoid contact with skin, eyes and clothing. Wash hands before breaks and immediately after handling the product.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical state and appearance</b>	Powder. (Lyophilized in 0.02M Sodium Citrate, 1.25% Lactose, pH 6.0)
<b>Color</b>	White
<b>Solubility</b>	Easily soluble in water.
<b>Odor</b>	Data not available
<b>Odor threshold</b>	Data not available
<b>Melting point / freezing point</b>	Data not available
<b>Initial boiling point and boiling range</b>	Data not available
<b>Flash point</b>	Data not available
<b>Evaporation rate</b>	Data not available
<b>Flammability (solid, gas)</b>	Data not available
<b>Upper/Lower flammability limit</b>	Data not available
<b>Upper/Lower Explosive limit</b>	Data not available
<b>Vapor pressure</b>	Data not available
<b>Vapor density</b>	Data not available
<b>Relative density</b>	Data not available
<b>Partition coefficient: n-octanol/water</b>	Data not available
<b>Auto-ignition temperature</b>	Data not available
<b>Decomposition temperature</b>	Data not available
<b>Viscosity</b>	Data not available

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## 10. STABILITY AND REACTIVITY

**Stability**

Stable under recommended storage conditions.

**Conditions to avoid**

Not applicable for this product.

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**11. TOXICOLOGY INFORMATION**

To the best of our knowledge, the chemical, physical and toxicological properties have not been fully investigated.

**Toxicity Data**

The LD<sub>50</sub> in mice is estimated at 1.1 ng/kg. Humans are assumed to be at least as sensitive.

Estimated lethal amount for a 100 lb (45.5 kg) human – without treatment or vaccinations – extrapolated from animal studies:

22.8 – 90 ng ip

RTECS: No data available

**Signs and Symptoms of Exposure**

Botulinum neurotoxin is a very potent neurotoxin which may be fatal if inhaled, ingested, injected, or introduced into a wound. The incubation period is usually 4 hours to 8 days. Symptoms include muscle weakness (especially in the face and neck early on, then the upper extremities, and finally the lower extremities), fatigue, dizziness, incoordination, an extremely dry mouth, blurred vision, sensitivity to bright lights, difficulty swallowing (drooling), difficulty speaking clearly (slurring), difficulty breathing, nausea, abdominal bloating, constipation, and difficulty urinating. There are no mentation nor sensory abnormalities and no fever.

**Additional Information**

RTECS: No data available

Toxicity Data Reference:

Gill, D.M., *Microbiol. Rev.* **46**, 86, 1982.

Arnon, S.S., Schechter, R. Inglesby T.V. *et.al.*, for the working group on civilian biodefense (2001), *JAMA*, 285, 1059-1070. *Botulinum Toxin as a Biological Weapon: Medical and Public Health Management.*

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**12. ECOLOGICAL INFORMATION**

Product is unlikely to cause a concern to the environment.

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**13. DISPOSAL CONSIDERATIONS**

Dispose of waste in accordance with appropriate Federal, state and local regulations or applicable governmental requirements.

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**14. TRANSPORT INFORMATION****IATA**

UN number: UN3462

Class: 6.1

Packing group: I

Proper shipping name: Clostridium botulinum

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**15. REGULATORY INFORMATION****OSHA Hazards**

Irritant

**SARA 302**

Not subject to reporting requirements and there are no Threshold Planning Quantities for this product.

**WHMIS**

D3 Biohazardous Infectious Material

**Safety Phrases**

S22 – Do not breathe dust

S24/25 – Avoid contact with skin and eyes

S36/37/39 – Wear suitable protective clothing, gloves and eye/face protection

**Risk Phrases**

R23/24/25 – Toxic by inhalation, in contact with skin and if swallowed

**California Prop. 65 Components**

This product does not contain any chemicals known to State of California to cause cancer, birth defects or any other reproductive harm.

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**16. OTHER INFORMATION**

Version: 1.0 / Issued Date: 07/2013

CAUTION – Not fully tested. For research use only. Not for human use.

The preceding information is based on available data and is believed to be correct, but does not purport to be all inclusive and should be used as a guide in handling this material. Users should make independent determinations of suitability and completeness of information from all sources to assure proper use and disposal of these materials, the safety and health of employees and customers, and the protection of the environment. The absence of warning must not, under any circumstance, be taken to mean that no hazard exists. List Biological Laboratories, Inc. shall not be held liable for any damage resulting from handling or from contact with the above product.