

## Safety Data Sheet

Botulinum Neurotoxin Type E, Nicked, from *Clostridium botulinum*  
Product #141A

### 1. PRODUCT AND COMPANY IDENTIFICATION

#### 1.1 Product identifiers

Product name : Botulinum Neurotoxin Type E, Nicked, from *Clostridium botulinum*  
Product number : 141A

#### 1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses : Laboratory chemicals, Manufacture of substances

#### 1.3 Details of the supplier of the safety data sheet

Company : List Biological Laboratories, Inc.  
540 Division Street  
Campbell, CA 95008-6906, USA  
  
Telephone : (408) 866-6363  
(800) 726-3213  
Fax : (408) 866-6364

#### 1.4 Emergency telephone number

24 Hour Emergency : 1 (800) 255-3924 ChemTel Domestic  
Phone # : +1 (813) 248-0585 ChemTel International  
ChemTel Customer # : MIS2844833

### 2. HAZARDS IDENTIFICATION

#### 2.1 Classification of the substance or mixture

##### GHS Classification in accordance with 29 CFR 1910 (OSHA HCS)

Acute toxicity, Oral (Category 1), H300  
Skin irritation (Category 2), H315  
Eye irritation (Category 2), H320

#### 2.2 GHS Label elements, including precautionary statements

Pictogram



Signal Word

Danger

Hazard statement(s)  
H300 + H310 + H330  
H315  
H320

Fatal if swallowed or in contact with skin or if inhaled.  
Causes skin irritation.  
Causes eye irritation.

Precautionary statement(s)  
P260  
P262  
P264  
P270  
P271  
P280  
P282  
P301 + P314 + P330

Avoid breathing dust/fume/gas/vapours/spray.  
Do not get in eyes, on skin or on clothing.  
Wash skin thoroughly after handling.  
Do not eat, drink or smoke when using this product.  
Use in a well-ventilated area.  
Wear protective gloves/ protective clothing.  
Wear respiratory protection.  
IF SWALLOWED: Immediately call a POISON CENTER or  
doctor/physician. Rinse mouth.

P302 + P350 P304 + P340	IF ON SKIN: Gently wash with plenty of soap and water. IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable to breathing.
P305 + P351 + P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do so. Continue rinsing.
P320	Specific treatment is urgent (see supplemental first aid instructions on this label).
P337 + P313	If eye irritation occurs: Get medical advice/attention.
P361	Remove/Take off immediately all contaminated clothing.
P363	Wash contaminated clothing before reuse.
P233	Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/ container to an approved waste disposal plant.

**2.3 Hazards not otherwise classified (HNOC) or not covered by GHS**  
Biohazard. Handle as if capable of transmitting infectious agents.

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**3. COMPOSITION / INFORMATION ON INGREDIENTS**

**3.1 Mixtures**

Synonym : BoNT/E, Nicked

Component	CAS No.	Percent (%)
Botulinum Neurotoxin Type E, Nicked	N/A	~1
Citric Acid, monohydrate	77-92-9	~12
Sodium Citrate, dihydrate	6132-04-3	~17
Lactose	9004-34-6	~70

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**4. FIRST AID MEASURES**

**4.1 Description of 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.

**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. Take victim immediately to hospital. Consult a physician.

**In case of eye contact**

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

**If swallowed**

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

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

The most important known symptoms and effects are described in the labeling (see section 2.2) and/or in section 11.

**4.3 Indication of any immediate medical attention and special treatment needed**

No data available

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**5. FIREFIGHTING MEASURES**

**5.1 Extinguishing media**

**Suitable extinguishing media**

Use extinguishing media appropriate to surrounding fire conditions.

**5.2 Special hazards arising from the substance or mixture**

Not flammable or combustible.

**5.3 Protective equipment and precautions for fire-fighters**

Use an approved/certified respirator.

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**6. ACCIDENTAL RELEASE MEASURES****6.1 Personal precautions, protective equipment and emergency procedures**

Wear respiratory protection. Wear appropriate laboratory attire including lab coat, gloves and safety glasses. Nitrile gloves are recommended when handling lyophilized material. Avoid formation of dust and aerosols. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust, vapours, mist or gas.

**6.2 Environmental precautions**

Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

**6.3 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, 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 CONSIDERATIONS.

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**7. HANDLING AND STORAGE****7.1 Precautions for safe handling**

Avoid contact with skin and eyes. Wear appropriate laboratory attire including lab coat, gloves and safety glasses. Nitrile gloves are recommended when handling lyophilized material. Avoid formation of dust and aerosols. Ensure adequate ventilation.

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

Store at 2 – 8°C prior to and following reconstitution.

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**8. EXPOSURE CONTROLS / PERSONAL PROTECTION****8.1 Control parameters****Components with workplace control parameters**

Contains no substances with occupational exposure limit values.

**8.2 Exposure controls****Appropriate engineering controls**

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

**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.

**Body protection**

Complete suit protecting against chemicals, The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**

Use respirators and components tested and approved under appropriate government standards; or,

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ensure adequate ventilation using engineering controls, such as a biological safety cabinet.

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## 9. PHYSICAL AND CHEMICAL PROPERTIES

a) Appearance	Form: solid; Color: white
b) Odor	Data not available
c) Odor threshold	Data not available
d) pH	Data not available
e) Melting point / freezing point	Data not available
f) Initial boiling point and boiling range	Data not available
g) Flash point	Data not available
h) Evaporation rate	Data not available
i) Flammability (solid, gas)	Data not available
j) Upper/Lower flammability or explosive limits	Data not available
k) Vapor pressure	Data not available
l) Vapor density	Data not available
m) Relative density	Data not available
n) Solubility(ies)	Easily soluble in water
o) Partition coefficient: n-octanol/water	Data not available
p) Auto-ignition temperature	Data not available
q) Decomposition temperature	Data not available
r) Viscosity	Data not available

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## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No data available

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No data available

### 10.4 Conditions to avoid

No data available

### 10.5 Incompatible materials

No data available

### 10.6 Hazardous decomposition products

No data available

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## 11. TOXICOLOGY INFORMATION

### 11.1 Information on toxicological effects

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

#### Acute toxicity

No data available

Inhalation: No data available

Dermal: No data available

Oral: No data available

#### Skin corrosion/irritation

No data available

#### Serious eye damage/eye irritation

No data available

#### Respiratory or skin sensitisation

No data available

**Germ cell mutagenicity**

No data available

**Carcinogenicity**

IARC: No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.

NTP: No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.

OSHA: No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

**Reproductive toxicity**

No data available

**Specific target organ toxicity – single exposure**

No data available

**Specific target organ toxicity – repeated exposure**

No data available

**Additional Information**

This product is a Select Agent & Toxin. Select Agents & Toxins (SA&T) include materials that have been identified by the CDC (Centers for Disease Control and Prevention), DHHS (Dept. of Health and Human Services) and/or the USDA (US Department of Agriculture) as having the potential to pose a severe threat to public health and safety.

**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.

RTECS: No data available

**Toxicity Data References:**

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

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

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.

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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**

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 the State of California to cause cancer, birth defects or any other reproductive harm.

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**16. OTHER INFORMATION****NFPA Rating**

Health Hazard: 4

Fire Hazard: 0

Reactivity Hazard: 0

**HMIS Rating**

Health Hazard: 4

Chronic Health Hazard: \*

Flammability: 0

Physical Hazard: 0

Version: 3.0 / Issued Date: 01/2019

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.