

**Material Safety Data Sheet**Tetanus Toxin from *Clostridium tetani*  
Product #190A, 190B**1. PRODUCT AND COMPANY INFORMATION**

Product Name : Tetanus Toxin from *Clostridium tetani*  
Synonym : N/A  
Product Number : 190A, 190B

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

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24 Hour Emergency Phones : (800) 424-9300 Chemtrec® Domestic  
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**2. COMPOSITION / INFORMATION ON INGREDIENTS**

## Product #190A

Component	CAS No.	Percent (%)
Tetanus Toxin	9012-63-9	~21
Sodium Chloride (NaCl)	7647-14-5	~49
HEPES, potassium salt	82207-62-3	~13
HEPES free acid	7365-45-9	~17

## Product #190B

Component	CAS No.	Percent (%)
Tetanus Toxin	9012-63-9	~21
Sodium Chloride (NaCl)	7647-14-5	~49
HEPES, potassium salt	82207-62-3	~13
HEPES free acid	7365-45-9	~17

**3. HAZARDS IDENTIFICATION****Emergency Overview**

Warning. Irritant. Toxic.

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.

**NFPA Rating****Health Hazard:** 4**Fire:** 0

<b>Reactivity Hazard:</b>	0
<b>HMIS Rating</b>	
<b>Health Hazard:</b>	4*
<b>Fire:</b>	0
<b>Physical Hazard:</b>	0
<b>Potential Health Effects</b>	
<b>Inhalation</b>	May be fatal if inhaled. Causes respiratory tract irritation
<b>Skin</b>	May be fatal if absorbed through skin. May cause skin irritation.
<b>Eyes</b>	May cause eye irritation
<b>Ingestion</b>	May be fatal if swallowed
For additional information on toxicity, please refer to Section 11.	

#### 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.

##### **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.

#### 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.

#### 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.

#### 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°C prior to and following reconstitution. DO NOT FREEZE.

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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 HEPES, 1.25% Lactose, pH 7.4)
<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**

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

9 ng

RTECS: LD<sub>50</sub> mice, 3 ng/kg subcutaneous, LD<sub>LO</sub> mice, 100 pg/kg ip

#### **Signs and Symptoms of Exposure**

This material is a powerful neurotoxin. Exposure may cause muscle spasms, muscle rigidity, paralysis and death.

#### **Additional Information**

RTECS: XW5807000

Toxicity Data Reference: Guidebook to Protein Toxins and Their Use in Cell Biology, Eds. Rappuoli, R. and Montecucco, C., 1997, Oxford University Press Inc., New York, p. 101.

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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: II

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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.