



Material Safety Data Sheet

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Phone Calls: 301-816-8129
8 a.m. to 5 p.m. EST Mon. - Fri.

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ENDOTOXIN

Catalog Number: 1235503

Revision Date:

October 19, 2009

SECTION 1 - PRODUCT AND COMPANY IDENTIFICATION

Common Name: Endotoxin

Manufacturer: U. S. Pharmacopeia

Responsible Party: Reference Standards Technical Services

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Product Use: USP Reference Standards and Authentic Substances are used for chemical tests and assays in analytical, clinical, pharmaceutical, and research laboratories.

SECTION 2 - HAZARD INFORMATION

EMERGENCY OVERVIEW : Endotoxin is pyrogenic. This material contains polyethylene glycol, an irritant.

Adverse Effects: Endotoxins are pyrogenic (fever-causing) constituents of the cell wall of gram-negative bacteria. Endotoxins can cause fever, chills, pain in the back and legs, headache, and discomfort. Polyethylene glycol may cause skin and eye irritation, nausea, vomiting, and diarrhea. Lactose may cause abdominal pain, diarrhea, bloating, and gas. Possible allergic reaction to material if inhaled, ingested, or in contact with skin.

Overdose Effects: n/f

Acute: Possible eye, skin, gastrointestinal, and/or respiratory tract irritation.

Chronic: Possible hypersensitization.

Medical Conditions Aggravated by Exposure: Hypersensitivity to material.

Cross Sensitivity: n/f

Target Organs: n/f

For additional information on toxicity, see Section 11.

SECTION 3 - COMPOSITION/INFORMATION ON INGREDIENTS

Common Name: Endotoxin

Formula: n/f

Synonym: n/f

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Chemical Name: Endotoxin, E. coli

CAS: See Composition

RTECS Number: See Composition

Chemical Family: Lipopolysaccharide (endotoxin)

Therapeutic Category: n/f

Composition: Endotoxin (CAS # 67924-63-4; RTECS # JZ2650000): Approximately 0.01%
Polyethylene glycol 8000 ((C₂H₄O)_n . H₂O; CAS # 25322-68-3; RTECS # TQ4105000): Approximately 9%
Lactose (C₁₂H₂₂O₁₁ . H₂O; CAS # 64044-51-5): Approximately 90.9%

SECTION 4 - FIRST AID MEASURES

Inhalation: May cause irritation. Remove to fresh air.

Eye: May cause irritation. Flush with copious quantities of water for at least 15 minutes.

Skin: May cause irritation. Flush with copious quantities of soap and water.

Ingestion: May cause irritation. Flush out mouth with water.

General First Aid Procedures: Remove from exposure. Remove contaminated clothing. For treatment advice, seek guidance from an occupational health physician or other licensed health-care provider familiar with workplace chemical exposures. In the United States, the national poison control center phone number is 1-800-222-1222. If person is not breathing, give artificial respiration. If breathing is difficult, give oxygen if available. Persons developing serious hypersensitivity (anaphylactic) reactions must receive immediate medical attention.

Note to Physicians

Overdose Treatment: n/f

SECTION 5 - FIREFIGHTING MEASURES

Extinguisher Media: Water spray, dry chemical, carbon dioxide, or foam as appropriate for surrounding fire and materials.

Fire and Explosion Hazards: This material is assumed to be combustible. As with all dry powders, it is advisable to ground mechanical equipment in contact with dry material to dissipate the potential buildup of static electricity.

Firefighting Procedures: As with all fires, evacuate personnel to a safe area. Firefighters should use self-contained breathing equipment and protective clothing.

SECTION 6 - ACCIDENTAL RELEASE MEASURES

Spill Response: Wear approved respiratory protection, chemically compatible gloves, and protective clothing. Wipe up spillage or collect spillage using a high-efficiency vacuum cleaner. Avoid breathing dust. Place spillage in appropriately labeled container for disposal. Wash spill site.

SECTION 7 - HANDLING AND STORAGE

Handling: As a general rule, when handling USP Reference Standards, avoid all contact and inhalation of dust, mists, and/or vapors associated with the material. Clean equipment and work surfaces with suitable detergent or solvent after use. After removing gloves, wash hands and other exposed skin thoroughly. Use of a designated area is recommended for handling of potent materials.

Storage: Store in tight container as defined in the USP-NF. This material should be handled and stored per label instructions to ensure product integrity. Store unopened vial and solution in a refrigerator.

SECTION 8 - EXPOSURE CONTROL / PERSONAL PROTECTION

Engineering Controls: Airborne exposure should be controlled primarily by engineering controls such as general dilution ventilation, local exhaust ventilation, or process enclosure. Local exhaust ventilation is generally preferred to general

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exhaust because it can control the contaminant at its source, preventing dispersion into the work area. An industrial hygiene survey involving air monitoring may be used to determine the effectiveness of engineering controls. Effectiveness of engineering controls intended for use with highly potent materials should be assessed by use of nontoxic surrogate materials.

Avoid any open handling of this material, particularly for grinding, crushing, weighing, or other dust-generating or aerosol-generating procedures. Use a laboratory fume hood, vented enclosure, glovebox, or other effective containment.

Respiratory Protection: Where respirators are deemed necessary to reduce or control occupational exposures, use NIOSH-approved respiratory protection and have an effective respirator program in place (applicable U.S. regulation OSHA 29 CFR 1910.134).

Gloves: Chemically compatible. For handling solutions, ensure that the glove material is protective against the solvent being used. Use handling practices that minimize direct hand contact. Employees who are sensitive to natural rubber (latex) should use nitrile or other synthetic nonlatex gloves. Use of powdered latex gloves should be avoided due to the risk of latex allergy. This material is extremely potent. To reduce the risk of contamination of skin and surfaces, wear two pairs of gloves. Remove the outer gloves after handling and cleanup of the material, and remove the inner gloves only after removing other personal protective equipment.

Eye Protection: Safety glasses with sideshields are recommended. Face shields or goggles may be required if splash potential exists or if corrosive materials are present. Approved eye protection (e.g., bearing the ANSI Z87 or CSA stamp) is preferred. Maintain eyewash facilities in the work area.

Protective Clothing: For handling of laboratory scale quantities, a disposable lab coat or isolation gown over street clothes is recommended. Where significant quantities are handled, work clothing and booties may be necessary to prevent take-home contamination.

Exposure Limits: AIHA WEEL : 10 mg/m³ (aerosol) (polyethylene glycol)

SECTION 9 - PHYSICAL AND CHEMICAL PROPERTIES

Properties as indicated on the MSDS are general and not necessarily specific to the USP Reference Standard Lot provided.

Appearance and Odor: White powder

Odor Threshold: n/f

pH: n/f

Melting Range: n/f

Boiling Point: n/f

Flash Point: n/f

Autoignition Temperature: n/f

Evaporation Rate: n/f

Upper Flammability Limit: n/f

Lower Flammability Limit: n/f

Vapor Pressure: n/f

Vapor Density: n/f

Specific Gravity: n/f

Solubility in Water: Freely soluble

Fat Solubility: n/f

Other Solubility: n/f

Partition Coefficient: n-octanol/water: n/f

Percent Volatile: n/f

Reactivity in Water: n/f

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Explosive Properties: n/f**Oxidizing Properties:** n/f**Formula:** n/f**Molecular Weight:** n/f

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SECTION 10 - STABILITY AND REACTIVITY

Conditions to Avoid: Heat

Incompatibilities: Strong acids, strong bases, strong oxidizing agents (polyethylene glycol)

Decomposition Products: When heated to decomposition, material emits acrid smoke and irritating fumes. Emits toxic fumes under fire conditions.

Stable? Yes **Hazardous Polymerization?** No

SECTION 11 - TOXICOLOGICAL PROPERTIES

Oral Rat: LD50: >2000 mg/kg (lactose); >50 grams/kg (polyethylene glycol 8000)

Oral Mouse: LD50: n/f

Other Toxicity Data: Intraperitoneal Rat LD50 : 7600 micrograms/kg (endotoxin)
Dermal Rabbit LD50 : >20 grams/kg (polyethylene glycol 8000)

Irritancy Data:

For polyethylene glycol 8000 :
Eye/Rabbit : mild (Draize; 500 mg/24 hours)
Skin/Rabbit : mild (Draize; 500 mg/24 hours)
For lactose :
Eye/Rabbit : non-irritant (Draize)
Skin/Rabbit : non-irritant (Draize)

Corrosivity: n/f

Sensitization Data: n/f

Listed as a Carcinogen by: **NTP:** No **IARC:** No **OSHA:** No

Other Carcinogenicity Data: No

Mutagenicity Data: n/f

Reproductive and Developmental Effects: Studies of pregnant rats treated intraperitoneally with E. coli endotoxin showed an increase in hydrocephalus and/or neuronal necrosis in the fetuses. Intravenous doses up to 1000 micrograms produced resorptions and fetal mortality, but did not increase congenital defects in rats. Guinea pigs given 10 and 20 microgram/kg doses had an increased incidence of malformations and resorptions.
When mice, rats, and rabbits were given 400 to 4000 mg/kg doses of lactose, the rabbits had high maternal mortality, and the mice and rats had an increase in external and visceral defects.

SECTION 12 - ECOLOGICAL INFORMATION

Ecological Information: n/f

SECTION 13 - DISPOSAL CONSIDERATIONS

Disposal: Dispose of waste in accordance with all applicable Federal, State, and local laws.

SECTION 14 - TRANSPORT INFORMATION

Shipping Name: n/f

Class: n/f

UN Number: n/f

Packing Group: n/f

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Additional Transport Information: n/f

SECTION 15 - REGULATORY INFORMATION
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U.S. Regulatory Information: n/f**International Regulatory Information:** n/f

SECTION 16 - OTHER INFORMATION

Revision: 19-Oct-09**Previous Revision Date:** 11-Nov-02