

MATERIAL SAFETY DATA SHEET

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| Version | 2.0 | Issue Date | 14 Jul 2011 |
| Revision Date | 05 Jul 2011 | | |
| Supersedes | 01 Dec 2009 | American National Standard | ANSI Z400.1 |

SECTION 1: IDENTIFICATION OF THE SUBSTANCE AND COMPANY

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| Product Name | CONTROL STANDARD ENDOTOXIN, 2 ng |
| Brand | Endosafe |
| Product Codes | E130 |
| Manufacturer | Charles River |
| Division | Endotoxin and Microbial Detection |
| Address | 1023 Wappoo Rd Suite 43-B Charleston, SC 29407 |
| Telephone | (843) 402-4900 |
| Emergency | (843) 402-4900 |

SECTION 2: HAZARDS IDENTIFICATION

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| Emergency Overview | Lipopolysaccharides are highly pyrogenic. Administered intravenously, the minimal pyrogenic dose in humans has been estimated at 4 ng/kg. Their toxicological properties have not been fully investigated. |
| OSHA Hazards | No OSHA hazards - This product contains no substances which at their given concentration are considered hazardous. For in vitro purposes only, not for use in humans. |
| NFPA Rating | Health = 0, Fire = 1, Instability = 0 |
| HMIS Classification | Health = 0, Flammability = 1, Physical hazards = 0 |
| Potential Health Effects | |
| Eyes | May cause eye irritation |
| Skin | May be harmful if absorbed through skin, may cause skin irritation. |
| Inhalation | May be harmful if inhaled, may cause respiratory tract irritation. |
| Ingestion | May be harmful if swallowed. |

SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

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| Chemical Name | Endotoxin, Lipopolysaccharides derived from Escherichia coli 055:B5 co-lyophilized in a stabilized medium |
| Synonyms | LPS, CSE, Endotoxin |

| Components | CAS# | RTECS# | EC# | Concentration |
|--|------------|-----------|-----|---------------|
| Lipopolysaccharides, from Escherichia coli O111:B4 | 73666-47-4 | OJ0895400 | - | 2 ng |

SECTION 4: FIRST AID MEASURES

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| Eye contact | Flush eyes with plenty of water. |
| Skin contact | Rinse immediately with soap and plenty of water. |
| Ingestion | Never give anything by mouth to an unconscious person. Rinse mouth with water. |
| Inhalation | Move person into fresh air. If not breathing give artificial respiration consult a physician |

SECTION 5: FIRE-FIGHTING MEASURES

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| Flash point | Not available |
| Ignition temperature | Not available |
| Extinguishing media | Use extinguishing measures that are appropriate to local circumstances and the surrounding environment. |
| Additional information | This material is assumed to be combustible. Burning may produce irritating fumes. |

SECTION 6: ACCIDENTAL RELEASE MEASURES

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| Personal precautions | Use personal protective equipment. Avoid dust formation. Avoid breathing dust. Ensure adequate ventilation. |
| Environmental precautions | Prevent product from entering drains. |
| Methods for cleaning | Use a wet sponge or damp cloth. Keep in suitable, closed containers for disposal |

SECTION 7: HANDLING AND STORAGE

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| Handling | Wear personal protective equipment and avoid contact with skin and eyes. Good laboratory technique should be used in handling product. |
| Storage | Recommended storage temperature: 2 - 8 °C |

SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

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| Engineering measures | Contains no substances with occupational exposure limit values |
| Respiratory protection | Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multipurpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). |

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| Eye protection | Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). |
| Skin and body protection | Wear appropriate protective gloves and clothes to prevent skin exposure. |
| Hygiene measures | Handle in accordance with good industrial hygiene and safety practices. |

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

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| Physical state | Powder, lyophilized |
| Odor | Not available |
| pH | Not available |
| Melting/freezing point | Not available |
| Boiling point | Not available |
| Flash point | Not available |
| Evaporation rate | Not available |
| Flammability | Not available |
| Upper/lower flammability limits | Not available |
| Vapor pressure | Not available |
| Vapor density | Not available |
| Specific gravity | Not available |
| Water solubility | Soluble |
| Partition coefficient: n-octanol/water | Not applicable |
| Decomposition temperature | Not available |
| Viscosity | Not applicable |

SECTION 10: STABILITY AND REACTIVITY

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|---------------------------------|---|
| Stability | Stable under recommended storage conditions |
| Materials to avoid | Strong acids, bases and oxidizers |
| Conditions to avoid | Heat |
| Hazardous polymerization | Will not occur |
| Hazardous decomposition | Hazardous decomposition products formed under fire conditions – Carbon oxides |

SECTION 11: TOXICOLOGICAL INFORMATION

Acute toxicity (LD50)

Oral 48.3 mg/kg [Rat]

Intraperitoneal 10 mg/kg [Rat]

Chronic exposure Not available

Irritation and corrosion Not available

Carcinogenic effects

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

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

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

Mutagenic effects Not available

Reproductive toxicity Studies of pregnant rats treated intraperitoneally with similar E. coli endotoxin showed an increase in fetal hydrocephalus and neuronal necrosis. Intravenous doses up to 1000 µg resulted in resorptions and dead fetuses but no increase in congenital defects. Similar studies involving guinea pigs showed an increase in malformations and resorptions when given doses of 10 to 20 µg/kg intravenously.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity Not available

Persistence/degradability Not available

Bioaccumulative potential Not available

Mobility in soil Not available

SECTION 13: DISPOSAL CONSIDERATIONS

Product Observe all federal, state, and local environmental regulations

Contaminated packaging Dispose of as unused product.

SECTION 14: TRANSPORT INFORMATION

DOT Not regulated hazardous material

IATA Not regulated hazardous material

IMDG

Not regulated hazardous material

SECTION 15: REGULATORY INFORMATION

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| OSHA Hazards | No OSHA hazards |
| TSCA Status | On TSCA inventory |
| SARA 302 Components | No components in this material are subject to the reporting requirements of SARA Title III, Section 302. |
| SARA 311/312 Hazards | No components in this material are subject to the reporting requirements of SARA Title III, Section 311/312 |
| SARA 313 Components | This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313. |
| California Prop 65 | This product does not contain any chemicals known to the State of California to cause cancer, birth defects, or any other reproductive harm. |
| DSL Status | This substance is not specified on the DSL/NDSL list and has been classified according to the hazard criteria of the CPR and contains all of the information required by the CPR. |
| WHMIS Classification | Not WHMIS controlled |

SECTION 16: OTHER INFORMATION

Although the information and recommendations set forth herein (hereinafter "information") are presented in good faith and believed to be correct as of the date hereof, Charles River Endosafe makes no representations as to the completeness or accuracy thereof. Information is supplied upon the condition that the persons receiving same will make their own determination as to its safety and suitability for their purposes prior to use. In no event will Charles River Endosafe be responsible for damages of any nature whatsoever resulting from the use of or reliance upon information.

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