Office of Laboratory Security

MSDS

# MATERIAL SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

## SECTION I - INFECTIOUS AGENT

**NAME:** ***Bacillus cereus***

**SYNONYM OR CROSS REFERENCE:** *Bacillus cereus* food poisoning

**CHARACTERISTICS:** Large (1 x 3-4 µm), aerobic, gram-positive rod; spore forming; motile; produces heat stable and heat labile toxins

## SECTION II - HEALTH HAZARD

**PATHOGENICITY:** Opportunistic pathogen; intoxication characterized by two forms: an emetic form with severe nausea and vomiting and a diarrheal form with abdominal cramps and diarrhea; both forms are usually mild and self-limiting (24 hrs); immunocompromised individuals are susceptible to bacteremia, endocarditis, meningitis, pneumonia; also associated with posttraumatic endophthalmitis (ocular infection - rare)

**EPIDEMIOLOGY:** Worldwide; common cause of foodborne disease, especially in Europe

**HOST RANGE:** Humans

**INFECTIOUS DOSE:** Greater that $10^6$ organisms by ingestion (>$10^5$ organisms/g of food)

**MODE OF TRANSMISSION:** Ingestion of foods kept at ambient conditions after cooking; emetic form frequently associated with cooked rice

**INCUBATION PERIOD:** Emetic form 1-6 hours, average 4 hours; diarrheal form 6-24 hours, average 17 hours

**COMMUNICABILITY:** Not communicable from person to person

## SECTION III - DISSEMINATION

**RESERVOIR:** Ubiquitous organism of the soil; commonly found in low levels in raw, dried and processed foods

**ZOONOSIS:** None

**VECTORS:** None

## SECTION IV - VIABILITY

**DRUG SUSCEPTIBILITY:** Sensitive to chloramphenicol, aminoglycosides,

vancomycin, clindamycin, erythromycin

**DRUG RESISTANCE:** Resistant to penicillin, ampicillin, cephalosporins, trimethoprim

**SUSCEPTIBILITY TO DISINFECTANTS:** Spores are relatively resistant; inactivated by 2% glutaraldehyde, 5% sodium hypochlorite; prolonged contact times required

**PHYSICAL INACTIVATION:** Spores destroyed by heating at 100°C for 10 min; ionizing radiation destroys spores with 540 krad

**SURVIVAL OUTSIDE HOST:** Spores are relatively resistant to heat and dessication; survive cooking

## SECTION V - MEDICAL

**SURVEILLANCE:** Monitor for symptoms and confirm by identification of organism in suspected food and faeces of patients

**FIRST AID/TREATMENT:** Supportive therapy

**IMMUNIZATION:** None available

**PROPHYLAXIS:** None available

## SECTION VI - LABORATORY HAZARDS

**LABORATORY-ACQUIRED INFECTIONS:** None reported to date

**SOURCES/SPECIMENS:** Contaminated food sources, stool

**PRIMARY HAZARDS:** Ingestion of contaminated material

**SPECIAL HAZARDS:** None

## SECTION VII - RECOMMENDED PRECAUTIONS

**CONTAINMENT REQUIREMENTS:** Biosafety level 2 practices, containment equipment and facilities for activities involving clinical specimens and cultures

**PROTECTIVE CLOTHING:** Laboratory coat; gloves when skin contact with infectious materials is unavoidable

**OTHER PRECAUTIONS:** Good personal hygiene and frequent handwashing

## SECTION VIII - HANDLING INFORMATION

**SPILLS:** Allow aerosols to settle; wearing protective clothing, gently cover spill with absorbent paper towel and apply 5% sodium hypochlorite starting at the perimeter and working towards the centre; allow sufficent contact time before clean up

**DISPOSAL:** Decontaminate all wastes before disposal; steam sterilization, chemical disinfection, incineration

**STORAGE:** In sealed containers that are appropriately labelled

## SECTION IX - MISCELLANEOUS INFORMATION

**Date prepared:** November 1999

**Prepared by:** Office of Laboratory Security, PHAC

Although the information, opinions and recommendations contained in this Material Safety Data Sheet are compiled from sources believed to be reliable, we accept no responsibility for the accuracy, sufficiency, or reliability or for any loss or injury resulting from the use of the information. Newly discovered hazards are frequent and this information may not be completely up to date.



[Material Safety Data Sheets - Index]

Last Updated: 2001-01-23 Important Notices

# SAFETY DATA SHEET (SDS)

## 1. Product Identification:

| | |
|---|---|
| **Product Name:** | *Enterobacter aerogenes* Z052, titered (1 mL) |
| **Catalog Number:** | 0801518 |
| **Product ID Number (CAS #)** | No Data Available |
| **Intended use of the product:** | For research use only. |

**ZeptoMetrix Corporation**
**878 Main Street**
**Buffalo, New York 14202**
**Phone: (716)-882-0920 Fax: (716)-882-0959**

| | |
|---|---|
| **Emergency telephone number:** | 1-800-274-5487 (US Toll Free) Monday-Friday 8:15 am- 4:45 pm EST |

## 2. Hazard(s) Identification:

**Classification of the substance or chemical:**

**Classification:** No Data Available

**Hazard Pictograms**

| | |
|---|---|
| **Signal word:** | Danger |
| **Hazard statements:** | Potential Biohazard, Use Universal Precautions |
| **Precautionary statement:** | This substance is not hazardous as defined by OSHA 29CFR 1910.1200 but this product should be handled according to good lab practices, with proper personal protective equipment, proper engineering controls and within the parameters of the purchaser's safety program. |
| **Other hazards:** | No Data Available |
| **Unknown acute toxicity:** | No Data Available |

## 3. Composition/Information on Ingredients:

| Component Name | CAS Number | Concentration | Classification |
|---|---|---|---|
| Microbial Culture at Biosafety Level 2 | N/A | N/A | N/A |

## 4. First Aid/Emergency Measures:

**Description of first aid measures**

| | |
|---|---|
| First-aid measures general: | If you feel unwell, seek medical advice. |
| First-aid measures after Eye Contact: | Rinse cautiously with copious amounts of water for several minutes. |
| First-aid measures after Skin Contact: | Remove contaminated clothing and immediately rinse skin with copious amounts of water followed by washing with soap and copious amounts of water. |
| First-aid measures after Ingestion: | If the person is unconscious, seek emergency medical attention: never give anything by mouth to an unconscious person. If the person is conscious, wash mouth out with copious amounts of water and call a physician. Do not induce vomiting unless directed to do so by a physician. |
| First-aid measures after Inhalation: | If person is unconscious, seek emergency medical attention. If person is conscious, remove to fresh air and call a physician. |

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

| | |
|---|---|
| Symptoms/injuries after Eye Contact: | Seek medical assistance if required. |
| Symptoms/injuries after Skin Contact: | Seek medical assistance if required. |
| Symptoms/injuries after Ingestion: | Seek medical assistance if required. |
| Symptoms/injuries after Inhalation: | Seek medical assistance if required. |

**Indication of any immediate medical attention and special treatment needed :** No Data Available

## 5. Fire and Explosion Measures:

**Extinguishing Media**

| | |
|---|---|
| Suitable extinguishing media: | Use an extinguishing agent suitable for the surrounding area. |
| Unsuitable extinguishing media: | Use an extinguishing agent suitable for the surrounding area. |

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

| | |
|---|---|
| Fire hazard: | No Data Available |
| Explosion hazard: | No Data Available |
| Reactivity: | No Data Available |

**Advice for firefighters**

| | |
|---|---|
| Firefighting instructions: | Exercise caution when fighting a fire. |
| Protection during firefighting: | Firefighters should wear protective gear. Do not enter fire area without proper protective equipment, including respiratory protection. |

## 6. Accidental Release Measures:

**Personal precautions, protective equipment and emergency procedures**

| | |
|---|---|
| General measures: | Use appropriate personal protection equipment (PPE) and appropriate laboratory procedures. |

**For non-emergency personnel**

| | |
|---|---|
| Protective equipment: | Use appropriate personal protection equipment (PPE). |
| Emergency procedures: | Use appropriate emergency laboratory procedures. |

**For emergency responders**

| | |
|---|---|
| Protective equipment: | Use appropriate personal protection equipment (PPE). |
| Emergency procedures: | Use appropriate emergency procedures. |

**Methods and material for containment and cleaning up**

| | |
|---|---|
| For containment: | Contain material in accordance to State and Federal regulations. |
| Methods for cleaning up: | Follow and dispose of material in accordance to State and Federal waste disposal regulations. |

## 7. Handling and Storage:

**Precautions for safe handling**

| | |
|---|---|
| Precautions for safe handling: | Handle in accordance with good laboratory practices and Biosafety Level 2 safety procedures. Please reference the 5th edition of Biosafety in Microbiological and Biomedical Laboratories (BMBL) for a detailed discussion on biological safety (http://www.cdc.gov/biosafety/publications/bmbl5/index.htm). |

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

| | |
|---|---|
| Storage conditions: | Keep container closed when not in use. Do not store in a frost-free freezer. |
| Incompatible products: | No Data Available |
| Incompatible materials: | No Data Available |
| Storage: | Recommended storage temperature -65°C or below. |

## 8. Exposure Controls and Personal Protection:

**Exposure Controls**

| | |
|---|---|
| Appropriate engineering controls: | Handle in accordance with good laboratory practices and safety practices. |
| Personal Protective Equipment: | Use laboratory coat, protective gloves, safety glasses and suitable protective clothing. |

Pictograms:

| | |
|---|---|
| Eye/Face protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Skin and body protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Respiratory protection: | NA |
| Hand protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Mechanical protection: | NA. |
| Special work practices: | NA |

## 9. Physical and Chemical Properties:

| Information on basic physical and chemical properties | |
|---|---|
| Physical State: | Liquid |
| Appearance/color: | Cloudy to clear |
| Odor: | No Data Available |
| Odor threshold: | No Data Available |
| pH: | No Data Available |
| Melting point/freezing point: | No Data Available |
| Boiling point: | No Data Available |
| Flash point: | No Data Available |
| Evaporation rate: | No Data Available |
| Flammability: | No Data Available |
| Upper/lower flammability or explosive limits: | No Data Available |
| Vapor pressure: | No Data Available |
| Vapor density: | No Data Available |
| Relative density: | No Data Available |
| Solubility(ies): | No Data Available |
| Partition coefficient: | No Data Available |
| Auto-ignition temperature: | No Data Available |
| Decomposition temperature: | No Data Available |
| Viscosity: | No Data Available |
| **Other information:** | Organisms will settle, please mix gently before using. |

## 10. Stability and Reactivity:

| | |
|---|---|
| Reactivity: | No Data Available |
| Chemical stability: | No Data Available |
| Possibility of hazardous reactions: | No Data Available |
| Conditions to avoid: | No Data Available |
| Incompatible materials: | No Data Available |
| Hazardous decomposition products: | No Data Available |

## 11. Toxicological Information:

| Information on toxicological effects | |
|---|---|
| Skin corrosion/irritation: | No Data Available |
| Eye damage/irritation: | No Data Available |
| Respiratory damage/irritation: | No Data Available |
| Ingestion damage/irritation: | No Data Available |
| Specific target organ toxicity (single exposure): | No Data Available |
| Specific target organ toxicity (repeated exposure): | No Data Available |
| Numerical measure of toxicity: | No Data Available |
| Symptoms/injuries after skin contact: | No Data Available |
| Symptoms/injuries after eye contact: | No Data Available |
| Symptoms/injuries after inhalation: | No Data Available |
| Symptoms/injuries after ingestion: | No Data Available |

## 12. Ecological Information:

| | |
|---|---|
| Ecotoxicity: | No Data Available |
| | No Data Available |
| Persistence and degradability: | No Data Available |
| | No Data Available |
| Bioaccumulative potential: | No Data Available |
| | No Data Available |
| Mobility in soil: | No Data Available |
| | No Data Available |
| Other adverse effects: | No Data Available |

## 13. Disposal Information:

| | |
|---|---|
| Waste disposal recommendations: | Dispose of material in accordance to local, State and Federal waste disposal regulations. |

## 14. Transport Information:

| In accordance with IATA Regulations | |
|---|---|
| UN number | No Data Available |
| UN proper shipping name | No Data Available |
| Department of Transportation (DOT) | No Data Available |
| Hazard Classes | No Data Available |
| Hazard labels (DOT) | No Data Available |
| Packing group (DOT) | No Data Available |
| Environmental hazards | No Data Available |
| Transport in bulk | No Data Available |
| Special precautions | No Data Available |

## 15. Regulatory Information:

| | |
|---|---|
| SARA 311/312: Hazard categories for SARA Section 311/312 Reporting | No Data Available |
| Canadian WHMIS Classification | No Data Available |
| EU Classification (90/492/EE) | No Data Available |
| EU Risk and Safety Phrases | No Data Available |
| California Proposition 65: This product contains the following substances known to the State of California to cause Reproductive Toxicity (birth defects). | No Data Available |

## 16. Other Information:

| | |
|---|---|
| Preparation Date | 2015/03/03 |

## DISCLAIMER

# Safety data sheet
**according to 1907/2006/EC, Article 31**

Printing date 18.06.2015 Revision: 18.06.2015

## SECTION 1: Identification of the substance/mixture and of the company/undertaking

· **1.1 Product identifier**

· **Trade name: E. Coli OP50-pBAD**

· **Article number:** 10030881, 10030947, 10040696
· **1.2 Relevant identified uses of the substance or mixture and uses advised against**
No further relevant information available.
· **Application of the substance / the mixture** Laboratory chemicals

· **1.3 Details of the supplier of the safety data sheet**
· **Manufacturer/Supplier:**
Bio-Rad Laboratories (Shanghai) Ltd.
3rd Floor, Build E Poly Plaza, No.18 Dong Fang Road, Pudong
Shanghai, China 200120
Tel: +86 21 6169 8500
Fax: +86 21 6169 8599
China Call Center:+86 800 820 5567, +86 21 61698504
E-mail: Sales.China@bio-rad.com

· **Information department:**
Technical services, customer support.
sales.china@bio-rad.com
· **1.4 Emergency telephone number:** 86-21-63052255

## SECTION 2: Hazards identification

· **2.1 Classification of the substance or mixture**
· **Classification according to Regulation (EC) No 1272/2008**
Acute Tox. 4 H302 Harmful if swallowed.

· **2.2 Label elements**
· **Labelling according to Regulation (EC) No 1272/2008**
The substance is classified and labelled according to the CLP regulation.
· **Hazard pictograms**

GHS07

· **Signal word** Warning

· **Hazard-determining components of labelling:**
escherichia coli bacteria - freeze dried
· **Hazard statements**
H302 Harmful if swallowed.
· **Precautionary statements**
P264 Wash thoroughly after handling.
P270 Do not eat, drink or smoke when using this product.
P301+P312 IF SWALLOWED: Call a POISON CENTER/doctor if you feel unwell.
P330 Rinse mouth.
P501 Dispose of contents/container in accordance with local/regional/national/international regulations.

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# Safety data sheet
## according to 1907/2006/EC, Article 31

Printing date 18.06.2015 Revision: 18.06.2015

**Trade name: E. Coli OP50-pBAD**

(Contd. of page 1)

· **2.3 Other hazards**
· **Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.

## SECTION 3: Composition/information on ingredients

· **3.1 Chemical characterisation: Substances**
· **CAS No. Description:**
escherichia coli bacteria - freeze dried
· **Additonal information:** For the wording of the listed risk phrases refer to section 16.

## SECTION 4: First aid measures

· **4.1 Description of first aid measures**
· **After inhalation** Supply fresh air; consult doctor in case of complaints.
· **After eye contact** Rinse opened eye for several minutes under running water.
· **After swallowing** Induce vomiting and call for medical help.
· **4.2 Most important symptoms and effects, both acute and delayed** No further relevant information available.
· **4.3 Indication of any immediate medical attention and special treatment needed**
No further relevant information available.

## SECTION 5: Firefighting measures

· **5.1 Extinguishing media**
· **Suitable extinguishing agents**
CO2, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.
· **5.2 Special hazards arising from the substance or mixture** No further relevant information available.
· **5.3 Advice for firefighters**
· **Protective equipment:** No special measures required.

## SECTION 6: Accidental release measures

· **6.1 Personal precautions, protective equipment and emergency procedures** Wear protective clothing.
· **6.2 Environmental precautions:** Do not allow to enter sewers/ surface or ground water.
· **6.3 Methods and material for containment and cleaning up:** Pick up mechanically.
· **6.4 Reference to other sections**
See Section 7 for information on safe handling
See Section 8 for information on personal protection equipment.
See Section 13 for disposal information.

## SECTION 7: Handling and storage

· **7.1 Precautions for safe handling** No special precautions are necessary if used correctly.
· **Information about protection against explosions and fires:** No special measures required.

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# Safety data sheet
## according to 1907/2006/EC, Article 31



(Contd. of page 2)

· **7.2 Conditions for safe storage, including any incompatibilities**
· **Storage**
· **Requirements to be met by storerooms and receptacles:** According to product specification
· **Information about storage in one common storage facility:** Not required.
· **Further information about storage conditions:** None.
· **7.3 Specific end use(s)** No further relevant information available.

## SECTION 8: Exposure controls/personal protection

· **Additional information about design of technical systems:** No further data; see item 7.

· **8.1 Control parameters**
· **Components with limit values that require monitoring at the workplace:** Not required.
· **Additional information:** The lists that were valid during the creation were used as basis.

· **8.2 Exposure controls**
· **Personal protective equipment**
· **General protective and hygienic measures** Wash hands before breaks and at the end of work.
· **Protection of hands:** Protective gloves.
· **Material of gloves** Synthetic gloves
· **Penetration time of glove material**
The exact break trough time has to be found out by the manufacturer of the protective gloves and has to be observed.
**Eye protection:** Safety glasses

## SECTION 9: Physical and chemical properties

| | |
|---|---|
| · **9.1 Information on basic physical and chemical properties** | |
| · **General Information** | |
| · **Appearance:** | |
| **Form:** | Solid in various forms |
| **Colour:** | Light yellow |
| · **Odour:** | Odourless |
| · **Odour threshold:** | Not determined. |
| · **pH-value:** | Not applicable. |
| · **Change in condition** | |
| **Melting point/Melting range:** | undetermined |
| **Boiling point/Boiling range:** | undetermined |
| · **Flash point:** | Not applicable |
| · **Flammability (solid, gaseous)** | Product is not flammable. |
| · **Ignition temperature:** | |
| **Decomposition temperature:** | Not determined. |
| · **Self igniting:** | Not determined. |
| · **Danger of explosion:** | Product does not present an explosion hazard. |

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**Safety data sheet**
**according to 1907/2006/EC, Article 31**

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**Trade name: E. Coli OP50-pBAD**

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| | |
|---|---|
| · **Explosion limits:** | |
| **Lower:** | Not determined. |
| **Upper:** | Not determined. |
| · **Vapour pressure:** | Not applicable. |
| · **Density:** | Not determined |
| · **Relative density** | Not determined. |
| · **Vapour density** | Not applicable. |
| · **Evaporation rate** | Not applicable. |
| · **Solubility in / Miscibility with** | |
| **Water:** | Fully miscible |
| · **Partition coefficient (n-octanol/water):** | Not determined. |
| · **Viscosity:** | |
| **dynamic:** | Not applicable. |
| **kinematic:** | Not applicable. |
| **Organic solvents:** | 0,0 % |
| **Solids content:** | 100,0 % |
| · **9.2 Other information** | No further relevant information available. |

## SECTION 10: Stability and reactivity

· **10.1 Reactivity**
· **10.2 Chemical stability**
· **Thermal decomposition / conditions to be avoided:** No decomposition if used according to specifications.
· **10.3 Possibility of hazardous reactions** No dangerous reactions known
· **10.4 Conditions to avoid** No further relevant information available.
· **10.5 Incompatible materials:** No further relevant information available.
· **10.6 Hazardous decomposition products:** No dangerous decomposition products known

## SECTION 11: Toxicological information

· **11.1 Information on toxicological effects**
· **Acute toxicity:**
· **Primary irritant effect:**
· **on the skin:** No irritant effect.
· **Sensitisation:** No sensitising effects known.

## SECTION 12: Ecological information

· **12.1 Toxicity**
· **Aquatic toxicity:** No further relevant information available.
· **12.2 Persistence and degradability** No further relevant information available.
· **12.3 Bioaccumulative potential** No further relevant information available.
· **12.4 Mobility in soil** No further relevant information available.

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# Safety data sheet
## according to 1907/2006/EC, Article 31



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· **Additional ecological information:**
· **General notes:**
Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water.
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.
· **12.5 Results of PBT and vPvB assessment**
· **PBT:** Not applicable.
· **vPvB:** Not applicable.
· **12.6 Other adverse effects** No further relevant information available.

## SECTION 13: Disposal considerations

· **13.1 Waste treatment methods**
· **Recommendation**
Must not be disposed of together with household garbage. Do not allow product to reach sewage system.

· **Uncleaned packagings:**
· **Recommendation:** Disposal must be made according to official regulations.

## SECTION 14: Transport information

| | |
|---|---|
| · **14.1 UN-Number**<br>· **ADR, ADN, IMDG, IATA** | Void |
| · **14.2 UN proper shipping name**<br>· **ADR, ADN, IMDG, IATA** | Void |
| · **14.3 Transport hazard class(es)** | |
| · **ADR, ADN, IMDG, IATA**<br>· **Class** | Void |
| · **14.4 Packing group**<br>· **ADR, IMDG, IATA** | Void |
| · **14.5 Environmental hazards:**<br>· **Marine pollutant:** | No |
| · **14.6 Special precautions for user** | Not applicable. |
| · **14.7 Transport in bulk according to Annex II of MARPOL73/78 and the IBC Code** | Not applicable. |
| · **UN "Model Regulation":** | - |

## SECTION 15: Regulatory information

· **15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture**

· **National regulations**

· **Water hazard class:** Water hazard class 1 (Self-assessment): slightly hazardous for water.

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# Safety data sheet
## according to 1907/2006/EC, Article 31

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**Trade name: E. Coli OP50-pBAD**

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· **15.2 Chemical safety assessment:** A Chemical Safety Assessment has not been carried out.

## SECTION 16: Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Department issuing SDS:** Environmental Health and Safety.
· **Contact:**
Life Science Group, Environmental Health and Safety, 2000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 741-1000

Diagnostic Group, Environmental Health and Safety, 4000 Alfred Nobel Drive, Hercules, California, 94547: 1(510) 724-7000
· **Abbreviations and acronyms:**
ADR: Accord européen sur le transport des marchandises dangereuses par Route (European Agreement concerning the International Carriage of Dangerous Goods by Road)
IMDG: International Maritime Code for Dangerous Goods
IATA: International Air Transport Association
GHS: Globally Harmonised System of Classification and Labelling of Chemicals
CAS: Chemical Abstracts Service (division of the American Chemical Society)
Acute Tox. 4: Acute toxicity, Hazard Category 4
· ***Data compared to the previous version altered.**

# SAFETY DATA SHEET (SDS)

## 1. Product Identification:

| | |
|---|---|
| **Product Name:** | *Micrococcus luteus* Z100, titered (1 mL) |
| **Catalog Number:** | 0801832 |
| **Product ID Number (CAS #)** | No Data Available |
| **Intended use of the product:** | For research use only. |

**ZeptoMetrix Corporation**
878 Main Street
Buffalo, New York 14202
Phone: (716)-882-0920 Fax: (716)-882-0959

**Emergency telephone number:** 1-800-274-5487 (US Toll Free) Monday-Friday 8:15 am- 4:45 pm EST

## 2. Hazard(s) Identification:

**Classification of the substance or chemical:**

**Classification:** No Data Available

**Hazard Pictograms**

**Signal word:** Warning

**Hazard statements:** Use Universal Precautions

**Precautionary statement:** All materials and mixtures may present unknown hazards and should be handled as if capable of transmitting infectious agents.

**Other hazards:** No Data Available

**Unknown acute toxicity:** No Data Available

## 3. Composition/Information on Ingredients:

| Component Name | CAS Number | Concentration | Classification |
|---|---|---|---|
| Microbial Culture at Biosafety Level 1 | N/A | N/A | N/A |

## 4. First Aid/Emergency Measures:

**Description of first aid measures**

| | |
|---|---|
| First-aid measures general: | If you feel unwell, seek medical advice. |
| First-aid measures after Eye Contact: | Rinse cautiously with copious amounts of water for several minutes. |
| First-aid measures after Skin Contact: | Remove contaminated clothing and immediately rinse skin with copious amounts of water followed by washing with soap and copious amounts of water. |
| First-aid measures after Ingestion: | If the person is unconscious, seek emergency medical attention: never give anything by mouth to an unconscious person. If the person is conscious, wash mouth out with copious amounts of water and call a physician. Do not induce vomiting unless directed to do so by a physician. |
| First-aid measures after Inhalation: | If person is unconscious, seek emergency medical attention. If person is conscious, remove to fresh air and call a physician. |

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

| | |
|---|---|
| Symptoms/injuries after Eye Contact: | Seek medical assistance if required. |
| Symptoms/injuries after Skin Contact: | Seek medical assistance if required. |
| Symptoms/injuries after Ingestion: | Seek medical assistance if required. |
| Symptoms/injuries after Inhalation: | Seek medical assistance if required. |

**Indication of any immediate medical attention and special treatment needed :** No Data Available

## 5. Fire and Explosion Measures:

**Extinguishing Media**

| | |
|---|---|
| Suitable extinguishing media: | Use an extinguishing agent suitable for the surrounding area. |
| Unsuitable extinguishing media: | Use an extinguishing agent suitable for the surrounding area. |

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

| | |
|---|---|
| Fire hazard: | No Data Available |
| Explosion hazard: | No Data Available |
| Reactivity: | No Data Available |

**Advice for firefighters**

| | |
|---|---|
| Firefighting instructions: | Exercise caution when fighting a fire. |
| Protection during firefighting: | Firefighters should wear protective gear. Do not enter fire area without proper protective equipment, including respiratory protection. |

## 6. Accidental Release Measures:

**Personal precautions, protective equipment and emergency procedures**

| | |
|---|---|
| General measures: | Use appropriate personal protection equipment (PPE) and appropriate laboratory procedures. |

**For non-emergency personnel**

| | |
|---|---|
| Protective equipment: | Use appropriate personal protection equipment (PPE). |
| Emergency procedures: | Use appropriate emergency laboratory procedures. |

**For emergency responders**

| | |
|---|---|
| Protective equipment: | Use appropriate personal protection equipment (PPE). |
| Emergency procedures: | Use appropriate emergency procedures. |

**Methods and material for containment and cleaning up**

| | |
|---|---|
| For containment: | Contain material in accordance to State and Federal regulations. |
| Methods for cleaning up: | Follow and dispose of material in accordance to State and Federal waste disposal regulations. |

## 7. Handling and Storage:

**Precautions for safe handling**

| | |
|---|---|
| Precautions for safe handling: | Handle in accordance with good laboratory practices and Biosafety Level 1 safety procedures. Please reference the 5th edition of Biosafety in Microbiological and Biomedical Laboratories (BMBL) for a detailed discussion on biological safety (http://www.cdc.gov/biosafety/publications/bmbl5/index.htm). |

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

| | |
|---|---|
| Storage conditions: | Keep container closed when not in use. Do not store in a frost-free freezer. |
| Incompatible products: | No Data Available |
| Incompatible materials: | No Data Available |
| Storage: | Recommended storage temperature -65°C or below. |

## 8. Exposure Controls and Personal Protection:

**Exposure Controls**

| | |
|---|---|
| Appropriate engineering controls: | Handle in accordance with good laboratory practices and safety practices. |
| Personal Protective Equipment: | Use laboratory coat, protective gloves, safety glasses and suitable protective clothing. |

Pictograms:

| | |
|---|---|
| Eye/Face protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Skin and body protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Respiratory protection: | NA |
| Hand protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Mechanical protection: | NA. |
| Special work practices: | NA |

## 9. Physical and Chemical Properties:

| Information on basic physical and chemical properties | |
|---|---|
| Physical State: | Liquid |
| Appearance/color: | Cloudy to clear |
| Odor: | No Data Available |
| Odor threshold: | No Data Available |
| pH: | No Data Available |
| Melting point/freezing point: | No Data Available |
| Boiling point: | No Data Available |
| Flash point: | No Data Available |
| Evaporation rate: | No Data Available |
| Flammability: | No Data Available |
| Upper/lower flammability or explosive limits: | No Data Available |
| Vapor pressure: | No Data Available |
| Vapor density: | No Data Available |
| Relative density: | No Data Available |
| Solubility(ies): | No Data Available |
| Partition coefficient: | No Data Available |
| Auto-ignition temperature: | No Data Available |
| Decomposition temperature: | No Data Available |
| Viscosity: | No Data Available |
| **Other information:** | Organisms will settle, please mix gently before using. |

## 10. Stability and Reactivity:

| | |
|---|---|
| Reactivity: | No Data Available |
| Chemical stability: | No Data Available |
| Possibility of hazardous reactions: | No Data Available |
| Conditions to avoid: | No Data Available |
| Incompatible materials: | No Data Available |
| Hazardous decomposition products: | No Data Available |

## 11. Toxicological Information:

| Information on toxicological effects | |
|---|---|
| Skin corrosion/irritation: | No Data Available |
| Eye damage/irritation: | No Data Available |
| Respiratory damage/irritation: | No Data Available |
| Ingestion damage/irritation: | No Data Available |
| Specific target organ toxicity (single exposure): | No Data Available |
| Specific target organ toxicity (repeated exposure): | No Data Available |
| Numerical measure of toxicity: | No Data Available |
| Symptoms/injuries after skin contact: | No Data Available |
| Symptoms/injuries after eye contact: | No Data Available |
| Symptoms/injuries after inhalation: | No Data Available |
| Symptoms/injuries after ingestion: | No Data Available |

## 12. Ecological Information:

| | |
|---|---|
| Ecotoxicity: | No Data Available |
| | No Data Available |
| Persistence and degradability: | No Data Available |
| | No Data Available |
| Bioaccumulative potential: | No Data Available |
| | No Data Available |
| Mobility in soil: | No Data Available |
| | No Data Available |
| Other adverse effects: | No Data Available |

## 13. Disposal Information:

| | |
|---|---|
| Waste disposal recommendations: | Dispose of material in accordance to local, State and Federal waste disposal regulations. |

## 14. Transport Information:

| In accordance with IATA Regulations | |
|---|---|
| UN number | No Data Available |
| UN proper shipping name | No Data Available |
| Department of Transportation (DOT) | No Data Available |
| Hazard Classes | No Data Available |
| Hazard labels (DOT) | No Data Available |
| Packing group (DOT) | No Data Available |
| Environmental hazards | No Data Available |
| Transport in bulk | No Data Available |
| Special precautions | No Data Available |

## 15. Regulatory Information:

| | |
|---|---|
| SARA 311/312: Hazard categories for SARA Section 311/312 Reporting | No Data Available |
| Canadian WHMIS Classification | No Data Available |
| EU Classification (90/492/EE) | No Data Available |
| EU Risk and Safety Phrases | No Data Available |
| California Proposition 65: This product contains the following substances known to the State of California to cause Reproductive Toxicity (birth defects). | No Data Available |

## 16. Other Information:

| | |
|---|---|
| Preparation Date | 2015/03/03 |

## DISCLAIMER

**The information, data and any recommendations contained herein ("Information") is based upon available information believed by ZeptoMetrix Corporation ("ZMC") to be reliable, however ZMC neither warrants or assumes any liability for the accuracy or completeness of the information. ZMC MAKES NO REPRESENTATION OR WARRANTY, EITHER EXPRESS OR IMPLIED ( INCLUDING ANY WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE) WITH REGARD TO THE MATERIALS OR INFORMATION DESCRIBED HEREIN, THAT THE MATERIALS WILL NOT POSE A SAFETY OR HEALTH RISK, OR THAT THE MATERIALS WILL ACCOMPLISH ANY PARTICULAR RESULT.**

**All materials and mixtures may present unknown hazards and should be handled and used with caution. When necessary or appropriate, independent opinion regarding the risk of handling or exposure should be obtained from trained professionals.**

## Safety Data Sheet

## Micrococcus roseus.

PATHOGEN SAFETY DATA SHEET - INFECTIOUS SUBSTANCES

SECTION I - INFECTIOUS AGENT

NAME: Micrococcus spp.

SYNONYM OR CROSS REFERENCE: M. luteus, M. lylae, M. antarcticus, and more recently M. endophyticus, M. flavus, M. terreus, and M. yunnanensis. Former members of the genus Micrococcus, now assigned to other genera, include Arthrobacter agilis, Nesterenkonia halobia, Kocuria kristinae, K. rosea, K. varians, Kytococcus sedentarius, and Dermacoccus nishinomiyaensis (1,2).

CHARACTERISTICS: Micrococcus spp. are gram-positive, oxidase-positive, and strictly aerobic cocci belonging to the family Micrococcaceae(2,3). They usually occur in irregular clusters, tetrads, and pairs(2,3), where individual cells are about 1 to 1.8 mm in diameter(2) and are usually non-motile and non-spore-forming(3).

SECTION II - HAZARD INDENTIFICATION

PATHOGENICITY/TOXICITY: Micrococcus spp. and closely related genera are generally regarded as harmless saprophytes that inhabit or contaminate the skin, mucosa, and perhaps also the oropharynx; however, they can be opportunistic pathogens for the immunocompromised(2,3). They have been associated with various infections, including bacteremia, continuous ambulatory peritoneal dialysis peritonitis, and infections associated with ventricular shunts and central venous catheters(2). They have also been isolated from blood and surgical specimens in some patients with coronary and infectious conditions(3). M. luteus has been reported as the causative agent in cases of intracranial abscesses, pneumonia, septic arthritis, endocarditis, and meningitis(2).

EPIDEMIOLOGY: Micrococcus spp. and closely related genera, occur worldwide and are ubiquitous. They are found on the skin of humans and other animals and in soil, marine and fresh water, plants, fomites, dust, and air(2,3). In humans, they are most frequently found on the exposed skin of face, arms, hands, and legs. M. luteus is most common and is found in nature and in clinical specimens. One study (of 115 people) reports that up to 96% of people living in 18 states of USA carried micrococci, with the majority being M. luteus(3). The carriage rates were highest on the skin of the head, legs, and arms compared to those for nares and axillae.

HOST RANGE: Humans(2,3), mammals, and some marine animals (including some fish, sharks, crustacean shellfish, shrimps, and prawns)(3).

INFECTIOUS DOSE: Unknown

MODE OF TRANSMISSION: Transmission is possible through contact with contaminated objects and/or surfaces (demonstrated by bacterial transfer associated with paper-towel dispensing)(4). Transmission via inhalation of contaminated droplets and/or aerosols may also be possible.

INCUBATION PERIOD: Unknown

COMMUNICABILITY: Not known to be transmitted directly from person-to-person. Transmission usually occurs through contaminated surfaces and/or objects.

SECTION III - DISSEMINATION

RESERVOIR: Humans and animals (ubiquitous in the environment)(2,3).

ZOONOSIS: None.

VECTORS: None.

SECTION IV - STABILITY AND VIABILITY

DRUG SUSCEPTIBILITY: Micrococcus spp. are relatively susceptible to most antibiotics, including vancomycin, penicillin, gentamicin, and clindamycin, which have been successfully used for treating infections caused by these bacteria(2).

DRUG RESISTANCE: Resistance has been found in certain strains against nitrofurantoin, macrolides (erythromycin), and lincomycin(5,6).

SUSCEPTIBILITY TO DISINFECTANTS: Gram-positive bacteria are generally susceptible to a number of disinfectants, including phenolic compounds, hypochlorites (1% sodium hypochlorite), alcohols (70% ethanol), formaldehyde (18.5 g/L; 5% formalin in water), glutaraldehyde, iodines (0.075 g/L)(7).

PHYSICAL INACTIVATION: Bacteria are generally sensitive to moist heat and dry heat(8) . Growth of micrococci may be significantly reduced at temperatures >45 °C, pH <6, and in high salt concentrations (>15%)(9).

SURVIVAL OUTSIDE HOST: Micrococci are relatively resistant to drying and to moderate temperature changes(2). They have been shown to persist on human skin for extended periods of time ranging from few months to at least one year (up to two and a half years for several strains of M. luteus)(3). They do not survive well and die quickly in natural soil.

SECTION V - FIRST AID / MEDICAL

SURVEILLANCE: Monitor for symptoms. Micrococcus spp. can be isolated from biological

samples (taken from skin) using culture techniques (on agar media)(2,3). No immunological or biochemical detection techniques are currently available.

Note: All diagnostic methods are not necessarily available in all countries.

FIRST AID/TREATMENT: Appropriate antibiotic therapy should be administered as required, treatment should be supportive.

IMMUNISATION: None.

PROPHYLAXIS: None.

SECTION VI - LABORATORY HAZARDS

LABORATORY-ACQUIRED INFECTIONS: No cases of laboratory-acquired infections have been reported to date.

SOURCES/SPECIMENS: Skin (particularly in exposed regions of the body) of humans and animals, dairy products, and various environmental sources, including soil, marine and fresh water, plants, fomites, dust, and air(2,3).

PRIMARY HAZARDS: Likelihood of infection is low; however, avoid accidental parenteral inoculation, ingestion, and inhalation of infectious droplets.

SPECIAL HAZARDS: None

SECTION VII - EXPOSURE CONTROLS / PERSONAL PROTECTION

RISK GROUP CLASSIFICATION: Risk Group 1(10). This risk group applies to the genus as a whole, and may not apply to every species within the genus.

CONTAINMENT REQUIREMENTS: Containment Level 1 facilities, equipment, and operational practices for work involving infectious or potentially infectious materials.

PROTECTIVE CLOTHING: Properly fastened protective laboratory clothing. Gloves when direct skin contact with infected materials or animals is unavoidable(11).

OTHER PRECAUTIONS: None(11).

SECTION VIII - HANDLING AND STORAGE

SPILLS: Allow aerosols to settle. While wearing protective clothing, gently cover the spill with absorbent paper towel and apply appropriate disinfectant, starting at perimeter and working towards the centre. Allow sufficient contact time before clean up(11).

DISPOSAL: Decontaminate, either by steam sterilization, incineration, or chemical disinfection,

before disposal(11).

STORAGE: The infectious agent should be stored in sealed containers that are appropriately labelled(11).

SECTION IX - REGULATORY AND OTHER INFORMATION

REGULATORY INFORMATION: The import, transport, and use of pathogens in Canada is regulated under many regulatory bodies, including the Public Health Agency of Canada, Health Canada, Canadian Food Inspection Agency, Environment Canada, and Transport Canada. Users are responsible for ensuring they are compliant with all relevant acts, regulations, guidelines, and standards.

UPDATED: November 2010

PREPARED BY: Pathogen Regulation Directorate, Public Health Agency of Canada.

Although the information, opinions and recommendations contained in this Pathogen Safety Data Sheet are compiled from sources believed to be reliable, we accept no responsibility for the accuracy, sufficiency, or reliability or for any loss or injury resulting from the use of the information. Newly discovered hazards are frequent and this information may not be completely up to date.

BIONEER CORPORATION

# MATERIAL SAFETY DATA SHEET

## 1. PRODUCT AND COMPANY IDENTIFICATION

**Product Name:** ***S. cerevisiae*** **VN-Fusion Library, Active Plasmid**

**Company Name & Address:** BIONEER CORPORATION
49-3, Munpyeong-dong,
Daedeok-gu, Daejeon 306-220
Korea
Tel.: +82-42-930-8508
Fax: +82-42-930-8600

NOTE : If this product is a kit or is supplied with more than one material, please refer to the MSDS for each component for hazard information.

Product USE :

This products are for laboratory research use only and are not intended for human or animal diagnostics, therapeutic, or other clinical use.

## 2. COMPOSITION/INFORMATION ON INGREDIENTS

The following list shows components of this product classified as hazardous based on physical properties and health effects :

| Component | CAS NO. | Percent |
|---|---|---|
| No hazardous components | | |

## 3. HAZARDS IDENTIFICATION

**< Emergency Overview>**

Occupational exposure presents little or no health hazard

Potential Health Effects:

Eye :

May cause irritation of the eye.

Skin:

May cause skin irritation.

Inhalation:

No toxicity expected from inhalation.

Ingestion:

Mildly irritating to mouth, throat, and stomach. Can cause abdominal discomfort.

Chronic:

No data on cancer.

## 4. FIRST AID MEASURES

Eye:

Fluse with water in an eyewash for at least 15minutes, holding eyelids open. Remove contact lenses, clean before re-use. Obtain medical attention if symptoms develop(redness, itching, etc.)

Skin:

Wash with plenty of soap and water. Obtain medical attention if symptoms develop(redness, itching, etc.). Remove contaminated Clothes, wash before re-use.

Inhalation:

Remove person to fresh air. Obtain medical attention unless effects are mild and temporary.

Ingestion:

Give plenty of water, if conscious. If vomiting coours naturally, wash mouth out. Be prepared to induce vomiting upon a physician's advice. Obtain medical attention if symptoms develop.

Note to Physicain: Treat symptomatically.

## 5. FIRE FIGHTING MEASURES

| | |
|---|---|
| Flashpoint Deg C: | Not Available |
| Upper Flammable Limit %: | Not Available |
| Lower Flammable Limit %: | Not Available |
| Autoignition Temperature Deg C: | Not Available |

Extinguishing Media :

Use means appropriate for surrounding materials.

Firefighting Techniques / Equipment :

Standard turnout gear("bunker gear'). Positive-pressure self-contained

Breathing apparatus.

Hazardous Combustion Products:

Includes carbon dioxide, carbon monoxide, dense somke

## 6. ACCIDENTAL RELEASE MEASURES

Accidental releases may be subject to special reporting requirements and other regulatory mandates. Refer to section 8 personal protection equipment recommendations.

Spill Cleanup:

Absorb spill : Common absorbent materials should be effective. Deposit in appropriate containers for removal and disposal.

## 7. HANDLING AND STORAGE

Storage of some material is regulated by federal, state, and /or local laws.

Storage pressure: Ambient

Handling Precedures: Keep closed or covered when not in use.

Storage Procedures : Suitable for most general chemical storage areas.

## 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

**Exposure limits**

| Component | OSHA PEL | AGCIH TWA |
|---|---|---|
| No Hazardous components | (ppm) | (ppm) |

**Engineering Controls:**

Area ventilation is generally adequate.

**Personal Protective Equipment :**

Eye :

Safety goggles (glasses).

Skin :

Protective gloves, a lab coat.

Respiratory :

No respiratory protection will be needed under normal industrial operating conditions.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|---|---|
| Apperance / physical state : | Liquid solution / suspension |
| Odor: | No odor |
| | Not established. |
| | Not established. |
| | Not established. |
| Specific Gravity / Density : | 1.00 |
| Octanol / water partition coeff : | Not established. |
| Volatiles : | Not established. |
| Evaporation Rate : | 0.3 (BUTYLY Acetate = 1.0) |
| Viscosity : | 0.98 cp at 20C |

## 10. STABILITY AND REACTIVITY

Stability

Stable under ordinary conditions of use and storage.

Conditions to Avoid: Strong oxidizers.

Hazardous Decomposition Prodects:

## 10-1. STABILITY AND REACTIVITY (CONT.)

Carbon monoxide. Carbon dioxide.

Harzardous Polymerization: Not expected to occur.

## 11. TOXICOLOGICAL INFORMATION

Acute Toxicity :

Dermal/Skin : Not determined.

Inhalation/Respiratory : Not determined.

Oral / Ingestion: Not determined.

Target Organs : No data found.

Carcinogenicity :

NTP : Not tested

IARC : Not listed

OSHA : Not regulated.

Other Toxicological Information

## 12. ECOLOGICAL INFORMATION

No data available.

## 13. DISPOSAL CONSIDERATIONS

Burn the material in a chemical incinerator equipped with an afterburner and scrubber.

Observe all federal state and local environmental regulations.

## 14. TRANSPORT INFORMATION

Not regulated.

## 15. REGULATORY INFORMATION

UNITED STATES :

TSCA :

This product is solely for research and development purpose only and may not be used, processed of distributed for a commercial purpose. It may only be handled by technically

qualified individuals.

Prop 65 Listed Chemicals : PROP 65 PERCENT

No Prop 65 Chemicals.

No 313 Chemicals.

CANADA

DSL/NDSL: Not determined.

Component WHMIS Classification

No Hazardous components

EUROPEAN UNION:

Product risk phrases: None assigned.

Product safety phrases : Not applicable.

Product Classification : Not Classification as hazardous

Component EINECS Number

No hazardous components

**16. OTHER INFORMATION**

HMIS Rating 0-4 :

Fire : Not Determined

Health : Not Determined

Reactivity : Not Determined

Abbreviations

N/A – Data is not applicable or not available

SARA – Superfund and Reauthorization Act

HMIS – Hazard Material Information System

WHMIS – Workplace Hazard Material Information System

NTP – National Toxicology Program

OSHA – Occupational Agency for Research on Cancer

IARC – International Agency for Drinking Water and Toxic Enforcement Act of 1986

PROP 65- California Inventory of Existing Commercial Chemical Substances

This information is based on our present knowledge and shall be used only as a guide. However, this shall not constitute a guarantee for any specific product features. BIONEER is not held liable for any damage resulting from handing or from contact with the above products.

# SAFETY DATA SHEET (SDS)

## 1. Product Identification:

| | |
|---|---|
| **Product Name:** | *Serratia marcescens* Z053, titered (1 mL) |
| **Catalog Number:** | 0801723 |
| **Product ID Number (CAS #)** | No Data Available |
| **Intended use of the product:** | For research use only. |

**ZeptoMetrix Corporation**
**878 Main Street**
**Buffalo, New York 14202**
**Phone: (716)-882-0920 Fax: (716)-882-0959**

**Emergency telephone number:** 1-800-274-5487 (US Toll Free) Monday-Friday 8:15 am- 4:45 pm EST

## 2. Hazard(s) Identification:

**Classification of the substance or chemical:**

**Classification:** No Data Available

**Hazard Pictograms**

| | |
|---|---|
| **Signal word:** | Warning |
| **Hazard statements:** | Use Universal Precautions |
| **Precautionary statement:** | All materials and mixtures may present unknown hazards and should be handled as if capable of transmitting infectious agents. |
| **Other hazards:** | No Data Available |
| **Unknown acute toxicity:** | No Data Available |

## 3. Composition/Information on Ingredients:

| Component Name | CAS Number | Concentration | Classification |
|---|---|---|---|
| Microbial Culture at Biosafety Level 1 | N/A | N/A | N/A |

## 4. First Aid/Emergency Measures:

**Description of first aid measures**

| | |
|---|---|
| ~~First-aid measures general:~~ | ~~If you feel unwell, seek medical advice.~~ |
| First-aid measures after Eye Contact: | Rinse cautiously with copious amounts of water for several minutes. |
| First-aid measures after Skin Contact: | Remove contaminated clothing and immediately rinse skin with copious amounts of water followed by washing with soap and copious amounts of water. |
| First-aid measures after Ingestion: | If the person is unconscious, seek emergency medical attention: never give anything by mouth to an unconscious person. If the person is conscious, wash mouth out with copious amounts of water and call a physician. Do not induce vomiting unless directed to do so by a physician. |
| First-aid measures after Inhalation: | If person is unconscious, seek emergency medical attention. If person is conscious, remove to fresh air and call a physician. |

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

| | |
|---|---|
| Symptoms/injuries after Eye Contact: | Seek medical assistance if required. |
| Symptoms/injuries after Skin Contact: | Seek medical assistance if required. |
| Symptoms/injuries after Ingestion: | Seek medical assistance if required. |
| Symptoms/injuries after Inhalation: | Seek medical assistance if required. |

**Indication of any immediate medical attention and special treatment needed :** No Data Available

## 5. Fire and Explosion Measures:

**Extinguishing Media**

| | |
|---|---|
| Suitable extinguishing media: | Use an extinguishing agent suitable for the surrounding area. |
| Unsuitable extinguishing media: | Use an extinguishing agent suitable for the surrounding area. |

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

| | |
|---|---|
| Fire hazard: | No Data Available |
| Explosion hazard: | No Data Available |
| Reactivity: | No Data Available |

**Advice for firefighters**

| | |
|---|---|
| Firefighting instructions: | Exercise caution when fighting a fire. |
| Protection during firefighting: | Firefighters should wear protective gear. Do not enter fire area without proper protective equipment, including respiratory protection. |

## 6. Accidental Release Measures:

**Personal precautions, protective equipment and emergency procedures**

| | |
|---|---|
| General measures: | Use appropriate personal protection equipment (PPE) and appropriate laboratory procedures. |

**For non-emergency personnel**

| | |
|---|---|
| Protective equipment: | Use appropriate personal protection equipment (PPE). |
| Emergency procedures: | Use appropriate emergency laboratory procedures. |

**For emergency responders**

| | |
|---|---|
| Protective equipment: | Use appropriate personal protection equipment (PPE). |
| Emergency procedures: | Use appropriate emergency procedures. |

**Methods and material for containment and cleaning up**

| | |
|---|---|
| For containment: | Contain material in accordance to State and Federal regulations. |
| Methods for cleaning up: | Follow and dispose of material in accordance to State and Federal waste disposal regulations. |

## 7. Handling and Storage:

**Precautions for safe handling**

| | |
|---|---|
| Precautions for safe handling: | Handle in accordance with good laboratory practices and Biosafety Level 1 safety procedures. Please reference the 5th edition of Biosafety in Microbiological and Biomedical Laboratories (BMBL) for a detailed discussion on biological safety (http://www.cdc.gov/biosafety/publications/bmbl5/index.htm). |

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

| | |
|---|---|
| Storage conditions: | Keep container closed when not in use. Do not store in a frost-free freezer. |
| Incompatible products: | No Data Available |
| Incompatible materials: | No Data Available |
| Storage: | Recommended storage temperature -65°C or below. |

## 8. Exposure Controls and Personal Protection:

**Exposure Controls**

| | |
|---|---|
| Appropriate engineering controls: | Handle in accordance with good laboratory practices and safety practices. |
| Personal Protective Equipment: | Use laboratory coat, protective gloves, safety glasses and suitable protective clothing. |

Pictograms:

| | |
|---|---|
| Eye/Face protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Skin and body protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Respiratory protection: | NA |
| Hand protection: | Wear in accordance with good laboratory practices and safety procedures. |
| Mechanical protection: | NA. |
| Special work practices: | NA |

## 9. Physical and Chemical Properties:

| Information on basic physical and chemical properties | |
|---|---|
| Physical State: | Liquid |
| Appearance/color: | Cloudy to clear |
| Odor: | No Data Available |
| Odor threshold: | No Data Available |
| pH: | No Data Available |
| Melting point/freezing point: | No Data Available |
| Boiling point: | No Data Available |
| Flash point: | No Data Available |
| Evaporation rate: | No Data Available |
| Flammability: | No Data Available |
| Upper/lower flammability or explosive limits: | No Data Available |
| Vapor pressure: | No Data Available |
| Vapor density: | No Data Available |
| Relative density: | No Data Available |
| Solubility(ies): | No Data Available |
| Partition coefficient: | No Data Available |
| Auto-ignition temperature: | No Data Available |
| Decomposition temperature: | No Data Available |
| Viscosity: | No Data Available |
| **Other information:** | Organisms will settle, please mix gently before using. |

## 10. Stability and Reactivity:

| | |
|---|---|
| Reactivity: | No Data Available |
| Chemical stability: | No Data Available |
| Possibility of hazardous reactions: | No Data Available |
| Conditions to avoid: | No Data Available |
| Incompatible materials: | No Data Available |
| Hazardous decomposition products: | No Data Available |

## 11. Toxicological Information:

| Information on toxicological effects | |
|---|---|
| Skin corrosion/irritation: | No Data Available |
| Eye damage/irritation: | No Data Available |
| Respiratory damage/irritation: | No Data Available |
| Ingestion damage/irritation: | No Data Available |
| Specific target organ toxicity (single exposure): | No Data Available |
| Specific target organ toxicity (repeated exposure): | No Data Available |
| Numerical measure of toxicity: | No Data Available |
| Symptoms/injuries after skin contact: | No Data Available |
| Symptoms/injuries after eye contact: | No Data Available |
| Symptoms/injuries after inhalation: | No Data Available |
| Symptoms/injuries after ingestion: | No Data Available |

## 12. Ecological Information:

| | |
|---|---|
| Ecotoxicity: | No Data Available |
| | No Data Available |
| Persistence and degradability: | No Data Available |
| | No Data Available |
| Bioaccumulative potential: | No Data Available |
| | No Data Available |
| Mobility in soil: | No Data Available |
| | No Data Available |
| Other adverse effects: | No Data Available |

## 13. Disposal Information:

| | |
|---|---|
| Waste disposal recommendations: | Dispose of material in accordance to local, State and Federal waste disposal regulations. |

## 14. Transport Information:

| In accordance with IATA Regulations | |
|---|---|
| UN number | No Data Available |
| UN proper shipping name | No Data Available |
| Department of Transportation (DOT) | No Data Available |
| Hazard Classes | No Data Available |
| Hazard labels (DOT) | No Data Available |
| Packing group (DOT) | No Data Available |
| Environmental hazards | No Data Available |
| Transport in bulk | No Data Available |
| Special precautions | No Data Available |

## 15. Regulatory Information:

| | |
|---|---|
| SARA 311/312: Hazard categories for SARA Section 311/312 Reporting | No Data Available |
| Canadian WHMIS Classification | No Data Available |
| EU Classification (90/492/EE) | No Data Available |
| EU Risk and Safety Phrases | No Data Available |
| California Proposition 65: This product contains the following substances known to the State of California to cause Reproductive Toxicity (birth defects). | No Data Available |

## 16. Other Information:

| | |
|---|---|
| Preparation Date | 2015/03/04 |

## DISCLAIMER

MONTANA STATE UNIVERSITY | Office of Research Compliance

# PATHOGEN SAFETY DATA SHEET

## *Staphylococcus epidermidis*

| CHARACTERISTICS | |
|---|---|
| *Morphology* | Gram-positive cocci, usually occurs in clusters, non-spore forming, non-motile, coagulase positive, facultative anaerobes. |
| *Growth Conditions* | Tryptic Soy Broth |

| HEALTH HAZARDS | |
|---|---|
| *Host Range* | Humans. |
| *Modes of Transmission* | It is part of the normal human flora, typically the skin flora. Although it is usually not pathogenic, patients with compromised immune systems are at risk of developing infection. It is a particular concern for people with catheters or other surgical implants because it is known to form biofilms. |
| *Signs and Symptoms* | Biofilm growth on plastic devices placed within the body. It can also cause endocarditis, most often in patients with defective heart valves. |
| *Infectious Dose* | Unknown. |
| *Incubation Period* | Unknown. |

| MEDICAL PRECAUTIONS/TREATMENT | |
|---|---|
| *Prophylaxis* | None. |
| *Vaccines* | None. |
| *Treatment* | Antibiotics are largely ineffective. The most common treatment is to remove or replace the infected implant. |
| *Surveillance* | Monitor for symptoms. |
| *MSU Requirements* | Report any exposures. |

| LABORATORY HAZARDS | |
|---|---|
| *Laboratory Acquired Infections (LAIs)* | None reported. |
| *Sources* | Part of the normal human flora. |

| SUPPLEMENTAL REFERENCES | |
|---|---|
| *Canadian MSDS:* | http://www.phac-aspc.gc.ca/lab-bio/res/psds-ftss/index-eng.php |
| *BMBL:5th Edition* | http://www.cdc.gov/biosafety/publications/bmbl5/BMBL.pdf |

| CONTAINMENT REQUIREMENTS | |
|---|---|
| *BSL2* | For all procedures involving known or potentially infected cultures. |
| *ABSL2* | For all procedures utilizing infected animals |

| SPILL PROCEDURES | |
|---|---|
| *Small* | Notify others working in the lab. Remove and don new PPE. Cover area of the spill with absorbent material and add 10 % Bleach. Allow 30 minutes hour of contact time. After 30 minutes and then cleanup and dispose of materials. |
| Large | For assistance, contact MSU's Biosafety Officer (406-994-6998) or Safety and Risk Management (406-994-2711). |

| EXPOSURE PROCEDURES | |
|---|---|
| *Mucous membrane* | Flush eyes, mouth or nose for 5 minutes at eyewash station. |
| *Other Exposures* | Wash area with soap and water for 5 minutes. |
| *Reporting* | Immediately report incident to supervisor, complete a first report of injury report, and submit to Safety and Risk Management. |
| *Medical Follow-up* | **During business hours:**<br>Montana Occupational Health<br>2075 Charlotte St. Suite 3<br>Bozeman, MT<br>**After business hours:**<br>Bozeman Deaconess Hospital<br>Emergency Room<br>915 Highland Blvd<br>Bozeman, MT |

| VIABILITY | |
|---|---|
| *Disinfection* | Susceptible to 10 % Bleach, and 70 % ethanol. |
| *Inactivation* | Inactivated by dry heat (1 hour at 160-170°C). |
| *Survival Outside Host* | Can survive on dry surfaces for long periods. |

| PERSONAL PROTECTIVE EQUIPMENT (PPE) | |
|---|---|
| *Minimum PPE Requirements* | At minimum, gloves, closed toed shoes, lab coat, and appropriate face and eye protection prior to working with *S. epidermidis*. Additional PPE may be required depending on lab specific SOPs. |
| *Additional Precautions* | None. |