Section 1. Product and Company Identification

Product Name: Bleomycin Sulfate
Product ID: B4518
Chemical Name (Synonyms): Blenoxane; Blexane
Supplier: LKT Laboratories, Inc
545 Phalen Blvd.
St. Paul, MN 55130 USA
Ph: 651-644-8424 Fax: 651-644-8357
www.lktlabs.com - getinfo@lktlabs.com

Emergency Phone #: 1-800-424-9300

Section 2. Hazards Identification

GHS Classification
Germ cell mutagenicity (Category 1B), H340
Carcinogenicity (Category 2), H351
Reproductive toxicity (Category 2), H361

GHS Label elements including precautionary statements

Pictogram

Signal word: Danger

Hazard and precautionary statements
Hazard statements
H340 - May cause genetic defects.
H351 - Suspected of causing cancer.
H361 - Suspected of damaging fertility or the unborn child.

Precautionary statements
P201 - Obtain special instructions before use.
P202 - Do not handle until all safety precautions have been read and understood.
P281 - Use personal protective equipment as required.
P308 + P313 - IF exposed or concerned: Get medical advice/attention.
P405 - Store locked up.
P501 - Dispose of contents/container to an approved waste disposal plant.

HMIS Classification
Health hazard: 0
Chronic health hazard: *
Flammability: 0
Physical hazard: 0

NFPA Rating
Health hazard: 0
Fire hazard: 0
Reactivity hazard: 0

Potential Health Effects
Inhalation - May be harmful if inhaled. May cause respiratory irritation.
Skin - May be harmful if absorbed through skin. May cause skin irritation.
Eyes - May cause eye irritation.
Ingestion - May be harmful if swallowed.
Section 3. Composition/Information on Ingredients

Substances

<table>
<thead>
<tr>
<th>Formula</th>
<th>Formula Wt.</th>
<th>CAS No.</th>
<th>EC No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>C₅₅H₈₄N₁₇O₂₁S₃•H₂SO₄</td>
<td>1512.63</td>
<td>9041-93-4</td>
<td>232-925-2</td>
</tr>
</tbody>
</table>

Section 4. First Aid Measures

General advice
Move out of dangerous area. Consult a physician. Show this safety data sheet to the doctor in attendance.

Eye Contact
Flush eyes with water as a precaution.

Skin Contact
Wash off with soap and plenty of water. Consult a physician.

Inhalation
If breathed in, move person into fresh air. If not breathing, give artificial respiration. Consult a physician.

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

Section 5. Firefighting Measures

Flash Point
Not available.

Extinguishing Media
Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

Firefighting Procedures
Wear self-contained breathing apparatus for firefighting if necessary.

Unusual Fire Hazards
Not known.

Section 6. Accidental Release Measures

Personal Precautions
Use personal protective equipment. Avoid dust formation. Avoid breathing dust, vapors, mist, or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

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

Methods and materials for containment and cleanup
Pick up and arrange disposal without creating dust. Sweep up and shovel. Keep in suitable, closed containers for disposal.

Section 7. Handling and Storage

Handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

Storage Conditions
Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: +4°C

Hazardous Decomposition Products
Not available.

Other Remarks
Strongly hygroscopic.
Section 8. Exposure Controls/Personal Protection

**Personal protective equipment**

EXPOSURE CONTROLS
Contains no substances with occupational exposure limit values. Wash hands before breaks and at the end of workday.

PERSONAL PROTECTION
Eye/face protection: Safety glasses with side-shields conforming to EN 166. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU).

Skin protection: Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal technique (without touching glove’s outer surface) to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices. Wash and dry hands. Full and Splash contact - Material: Nitrile rubber. Minimum layer thickness: 0.11 mm, Break through time: 480 min., Material tested: Dermatril® (KCL 740 / Aldrich Z677272, Size M).

Body protection: Impervious clothing. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

Respiratory protection: Where risk assessment shows air-purifying respirators are appropriate use a full-face particle respirator type N100 (US) or type P3 (EN 143) 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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Section 9. Physical and Chemical Properties

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Color</th>
</tr>
</thead>
<tbody>
<tr>
<td>Solid.</td>
<td>White crystal powder.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Volatility</th>
</tr>
</thead>
<tbody>
<tr>
<td>Boiling Point</td>
<td>Not available.</td>
</tr>
<tr>
<td>Melting Point</td>
<td>71°C</td>
</tr>
<tr>
<td>Solubility</td>
<td>Not available.</td>
</tr>
<tr>
<td>Water solubility</td>
<td>Soluble in water to 20 mg/mL, DMSO to 100 mg/mL, Methanol.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>pH</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flash Point</td>
<td>Not available.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Ignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Lower explosion limit</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Autoignition temperature</th>
</tr>
</thead>
<tbody>
<tr>
<td>Upper explosion limit</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Vapor pressure</th>
</tr>
</thead>
<tbody>
<tr>
<td>Water solubility</td>
<td>Soluble in water to 20 mg/mL.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Odor</th>
</tr>
</thead>
<tbody>
<tr>
<td>Partition coefficient: n-octanol/water</td>
<td>Not available.</td>
</tr>
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</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Odor Threshold</th>
</tr>
</thead>
<tbody>
<tr>
<td>Relative vapor density</td>
<td>Not available.</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Physical State</th>
<th>Evaporation rate</th>
</tr>
</thead>
</table>

Section 10. Stability and Reactivity

**Stability**
Stable under recommended storage conditions.

**Materials To Avoid**
Strong oxidizing agents.

**Hazardous Decomposition Products**
Not available.
Section 11. Toxicological Information

Oral LD50 Not available.

Inhalation LC50 Not available.

Dermal LD50 Not available.

Other information on acute toxicity Not available.

Skin corrosion/irritation Not available.

Serious eye damage/irritation Not available.

Respiratory or skin sensitization Not available.

Germ cell mutagenicity In vivo tests showed mutagenic effects.

Carcinogenicity This product is or contains a component that has been reported to be possibly carcinogenic based on its IARC, ACGIH, NTP, or EPA classification.

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.

ACGIH: No component 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 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 Suspected human reproductive toxicant.

Aspiration Hazard Not available.

Synergistic effects Not available.

Additional Information RTECS: EC5991990

Section 12. Ecological Information

Toxicity Not available.

Mobility in soil Not available.

PBT and vPvB assessment not available as chemical safety assessment not required/not
Persistence and degradability Not available.

Bioaccumulative potential Not available.

Section 13. Disposal Considerations

Waste Disposal
Dispense of material according to all federal, state and local regulations. Offer material to a licensed, professional waste disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Dispose of as unused product.

Section 14. Transport Information

DOT (US) Not dangerous goods.

IATA Not dangerous goods.

IMDG Not dangerous goods.

Further Information

Section 15. Regulatory Information

Reach No.

SARA 302 Components No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

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.

SARA 311/312 Components Chronic health hazard

Massachusetts Right To Know Components No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know Components Bleomycin, sulfate CAS #: 9041-93-4 Revision Date:

New Jersey Right To Know Components Bleomycin, sulfate CAS #: 9041-93-4 Revision Date:

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.

Section 16. Other Information

Other information The information in this document is believed to be correct but is not necessarily complete. LKT does not guarantee the accuracy of the information. The burden of verifying the information in this document rests solely upon the user.