Section 1 - Product and Company Information

Product Name: AMPHOTERICIN B FROM STREPTOMYCES SSP. FOR CELL BIOLOGY
Product Number: 100411
Brand: Fluka Chemical

Company: Sigma-Aldrich
Street Address: 3050 Spruce Street
City, State, Zip, Country: SAINT LOUIS, MO 63103 US
Technical Phone: 800-325-5832
Fax: 800-325-5062
Emergency Phone: 314-776-6555

Section 2 - Composition/Information on Ingredient

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>CAS #</th>
<th>SARA 312</th>
<th>SC no</th>
<th>Annex 1 Index Number</th>
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</thead>
<tbody>
<tr>
<td>AMPHOTERICIN B</td>
<td>1387-69-3</td>
<td>No</td>
<td>215-742-2</td>
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</tbody>
</table>

Formula: C47H73NO17
Synonyms: Abelcet, AmBisome, Amphimorcan, Amphotericin B, Amphiopaque, Fungizone, Mycostatin-F, NS 718, NSC 527017

Section 3 - Hazards Identification

Emergency Overview: Irritating to eyes, respiratory system and skin.
Target organ(s): Kidneys.

HMS Rating:
Health: 2
Flammability: 0
Reactivity: 0

NFPA Rating:
Health: 2
Flammability: 0
Reactivity: 0

*additional chronic hazards present.
For additional information on toxicity, please refer to Section 11.

Section 4 - First Aid Measures

Oral Exposure: If swallowed, wash out mouth with water provided person is conscious. Call a physician.

Inhalation Exposure: If inhaled, remove to fresh air. If not breathing give artificial respiration. If breathing is difficult, give oxygen.

Dermal Exposure: In case of contact, immediately wash skin with soap and copious amounts of water.

Section 5 - Fire Fighting Measures

Autoignition Temp: N/A
Extinguishing Media:
Suitable: Water spray. Carbon dioxide, dry chemical powder, or appropriate foam.

Firefighting:
Protective Equipment:
Wear self-contained breathing apparatus and protective clothing to prevent contact with skin and eyes.

Specific Hazard(s):
Emits toxic fumes under fire conditions.

Section 6 - Accidental Release Measures

Procedures of Personal Precaution(s):
Wear respirator, chemical safety goggles, rubber boots, and heavy rubber gloves.

Methods for Cleaning Up:
Sweep up, place in a bag and hold for waste disposal. Avoid raising dust. Ventilate area and wash spill site after material pickup is complete.

Section 7 - Handling and Storage

Handling:

User Exposure:
Do not breathe dust. Avoid contact with eyes, skin, and clothing. Avoid prolonged or repeated exposure.

Storage:
Suitable: Keep tightly closed. Store at 2-8°C.

Special Requirements:
Light and moisture sensitive.

Section 8 - Exposure Controls / PPE

Engineering Controls:
Safety shower and eye bath. Mechanical exhaust required.

Personal Protective Equipment:

Respiratory:
Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU). Where risk assessment shows air-purifying respirators are appropriate use a dust mask type N95 (US) or type P1 (EN 143)

Hand:
Compatible chemical-resistant gloves.

Eye:
Chemical safety goggles.

Fluka Chemical - 100411
Sigma-Aldrich Corporation
www.sigma-aldrich.com
General Hygiene Measures
Wash thoroughly after handling.

Section 9 - Physical/Chemical Properties

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Molecular Weight</td>
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<tr>
<td>pH</td>
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</tr>
<tr>
<td>BP/VP Range</td>
<td>N/A</td>
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<tr>
<td>MP/MP Range</td>
<td>N/A</td>
</tr>
<tr>
<td>Freezing Point</td>
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<tr>
<td>Vapor Pressure</td>
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<tr>
<td>Vapor Density</td>
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<tr>
<td>Saturated Vapor Conc.</td>
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<tr>
<td>SG/Density</td>
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<tr>
<td>Bulk Density</td>
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<tr>
<td>Odor Threshold</td>
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<tr>
<td>Volatility</td>
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<tr>
<td>VOC Content</td>
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<tr>
<td>Water Content</td>
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<tr>
<td>Solvent Content</td>
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<tr>
<td>Evaporation Rate</td>
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<td>Viscosity</td>
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<td>Partition Coefficient</td>
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<tr>
<td>Decomposition Temp.</td>
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<tr>
<td>Flash Point 'F'</td>
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<tr>
<td>Flash Point 'C'</td>
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<td>Explosion Limits</td>
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<td>Flammability</td>
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<tr>
<td>Autoignition Temp</td>
<td>N/A</td>
</tr>
<tr>
<td>Solubility</td>
<td>N/A</td>
</tr>
<tr>
<td>N/A = not available</td>
<td></td>
</tr>
</tbody>
</table>

Section 10 - Stability and Reactivity

Stability
Stable

Conditions to Avoid
Exposure to light may affect product quality. Exposure to moisture may affect product quality.

Hazardous Decomposition Products
Carbon monoxide, carbon dioxide, and nitrogen oxides

Hazardous Polymerization
Will not occur.

Section 11 - Toxicological Information

Route of Exposure

Skin Contact
Causes skin irritation.

Skin Absorption
May be harmful if absorbed through the skin.

Eye Contact
Causes eye irritation.

Inhalation
Material is irritating to mucous membranes and upper respiratory tract. May be harmful if inhaled.

Ingestion
May be harmful if swallowed.

Sensitization
Sensitization
Prolonged or repeated exposure may cause allergic reactions in certain sensitive individuals.

Target Organ(s) or System(s)
Kidneys.

Signs and Symptoms of Exposure
Exposure can cause: Nausea, headache, and vomiting. Convulsions. Chills, fever, malaise, muscle and joint pain, rash, anorexia, diarrhea, gastrointestinal cramps, hypertension, hypotension, cardioarhythmias, ventricular fibrillation, cardiac arrest, blurred vision, tinnitus, vertigo, anaemia and hypokalemia.

RTECS Number: BU2825000

Toxicity Data

Intravenous - Woman: 22 mg/kg (LD50)
Remarks: Blood Leukopenia

Intravenous - Man: 164 mg/kg (LD50)
Remarks: Cardiac Other changes

Oral - Rat: > 5000 mg/kg (LD50)

Intraperitoneal - Rat: > 5 GM/kg (LD50)

Intravenous - Rat: 1600 mg/kg (LD50)

Intramuscular - Rat: > 5 GM/kg (LD50)

Intraperitoneal - Mouse: 27740 mg/kg (LD50)

Intravenous - Mouse: 1200 mg/kg (LD50)

Intramuscular - Mouse: > 5 GM/kg (LD50)

Intravenous - Dog: 5 mg/kg (LD50)
Remarks: Kidney, Urinary, Bladder other changes.

Chronic Exposure - Teratogen
Species  Group  Route of Administration  Exposure Time  Result/Effects on Embryo or Fetus: Teratogenic (except death, e.g., stunted fetuses)

Rat  5500 mg/kg  Intravenous  (6-16D PREG)  Result/Effects on Embryo or Fetus: Teratogenic (except death, e.g., stunted fetuses)
Chronic Exposure - Mutagen
Species | Dose | Cell Type | Mutation Test | Route of Application | Exposure Time
---------|------|-----------|---------------|----------------------|----------------
Human | 100 MCG/L | Other cell types | Other mutation test systems | Oral | (500 MALE)
Human | 10 UMC/L | lymphocyte | DNA inhibition | Oral | (500 MALE)
Hamster | 50 MG/L | lung | DNA inhibition | Intravenous | 11D
Hamster | 50 MG/L | lung | Other mutation test systems | Intravenous | 11D
Rabbit | 20 MG/KG | Intravenous | inability | (100 MALE)
Rabbit | 20 MG/KG | intravenous | Other mutation test systems | (100 MALE)

Chronic Exposure - Reproductive Hazard
Species | Route of Application | Exposure Time | Result | Paternal Effects: Prostate, seminal vesicle, Cowper's gland, accessory glands.
---------|----------------------|---------------|--------|--------------------------------------------------------
Dog | Oral | 600 MG/KG | (500 MALE)
Rabbit | Intravenous | 20 MG/KG | (100 MALE)

Section 12 - Ecological Information
No data available.

Section 13 - Disposal Considerations

Appropriate Method of Disposal of Substance or Preparation
Contact a licensed professional waste disposal service to dispose of this material. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

Section 14 - Transport Information

DOT

Proper Shipping Name: None
Non-Hazardous for Transport: This substance is considered to be nonhazardous for transport.

IATA

Non-Hazardous for Air Transport: Non-hazardous for air transport.

Section 15 - Regulatory Information

EU Additional Classification

Symbol of Danger: Xi
Indication of Danger
Instant.

Risk Statements
R: 36/37/38
Irritating to eyes, respiratory system and skin.

Safety Statements
S: 26 36
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing.

US Classification and Label Text

Indication of Danger
Instant.

Risk Statements
Irritating to eyes, respiratory system and skin.

Safety Statements
In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
Wear suitable protective clothing.

US Statements
Target organ(s): Kidneys.

United States Regulatory Information
SARA Listed: No