Material Safety Data Sheet

Cefoxitin Sodium Salt

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME
Cefoxitin Sodium Salt

STATEMENT OF HAZARDOUS NATURE

NFPA

SUPPLIER
Santa Cruz Biotechnology, Inc.
2145 Delaware Avenue
Santa Cruz, California 95060
800.457.3801 or 831.457.3800

EMERGENCY
ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS
C16-H16-N3-Na-O7-S2, "(6R, cis)-", 3-(((aminocarbonyl)oxy)methyl)-7-methoxy-8-oxo-7-((2-, thienylacetyl)amino)-5-thia-1-azabicyclo[4.2.0]oct-2-en-2-carboxylic, "acid monosodium salt", "cephoxitin sodium", Cenomycin, Mefoxin, Mefoxitin, Merxin, "cephamycin/ cephalosporin/ antibiotic"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

<table>
<thead>
<tr>
<th></th>
<th>Min</th>
<th>Max</th>
</tr>
</thead>
<tbody>
<tr>
<td>Flammability</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Toxicity</td>
<td>2</td>
<td></td>
</tr>
<tr>
<td>Body Contact</td>
<td>0</td>
<td></td>
</tr>
<tr>
<td>Reactivity</td>
<td>1</td>
<td></td>
</tr>
<tr>
<td>Chronic</td>
<td>2</td>
<td></td>
</tr>
</tbody>
</table>

CANADIAN WHMIS SYMBOLS

Flam: 1
Tox: 2
Bod: 0
Reac: 1
Chro: 2
EMERGENCY OVERVIEW

RISK
Ingestion may produce health damage*. Cumulative effects may result following exposure*. Possible respiratory and skin sensitiser*.

* (limited evidence).

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED
- Accidental ingestion of the material may be damaging to the health of the individual.
- The most common side effects of cephalosporins include acute, life-threatening kidney failure. Neurological symptoms may occur.

EYE
- Although the material is not thought to be an irritant (as classified by EC Directives), direct contact with the eye may cause transient discomfort characterised by tearing or conjunctival redness (as with windburn). Slight abrasive damage may also result.

SKIN
- The material is not thought to produce adverse health effects or skin irritation following contact (as classified by EC Directives using animal models). Nevertheless, good hygiene practice requires that exposure be kept to a minimum and that suitable gloves be used in an occupational setting.
- Open cuts, abraded or irritated skin should not be exposed to this material.
- Entry into the blood-stream, through, for example, cuts, abrasions or lesions, may produce systemic injury with harmful effects. Examine the skin prior to the use of the material and ensure that any external damage is suitably protected.

INHALED
- The material is not thought to produce either adverse health effects or irritation of the respiratory tract following inhalation (as classified by EC Directives using animal models).
- Nevertheless, adverse systemic effects have been produced following exposure of animals by at least one other route and good hygiene practice requires that exposure be kept to a minimum and that suitable control measures be used in an occupational setting.
- Persons with impaired respiratory function, airway diseases and conditions such as emphysema or chronic bronchitis, may incur further disability if excessive concentrations of particulate are inhaled.

CHRONIC HEALTH EFFECTS
- Substance accumulation, in the human body, may occur and may cause some concern following repeated or long-term occupational exposure. There is some evidence that inhaling this product is more likely to cause a sensitisation reaction in some persons compared to the general population. There is limited evidence that, skin contact with this product is more likely to cause a sensitisation reaction in some persons compared to the general population. Long term exposure to high dust concentrations may cause changes in lung function i.e. pneumoconiosis; caused by particles less than 0.5 micron penetrating and remaining in the lung. Prime symptom is breathlessness; lung shadows show on X-ray. Exposure to small quantities may induce hypersensitivity reactions characterised by acute bronchospasm, hives (urticaria), deep dermal wheals (angioneurotic oedema), running nose (rhinitis) and blurred vision. Anaphylactic shock and skin rash (non-thrombocytopenic purpura) may occur. An individual may be predisposed to such anti-body mediated reaction if other chemical agents have caused prior sensitisation (cross-sensitivity). Prolonged use of cephalosporins may result in resistance and super-infection of non-susceptible organisms, rarely resulting in intestinal inflammation. Loss of white blood cells and platelets has been reported; side effects are more common in those with pre-existing liver and kidney damage. Skin rashes, anaemia and gallstones have been seen. Cephalosporins are distributed in the milk of lactating women; however there is no information about their effect on the foetus and infant. In general the material poses little anaphylactic risk and has a low sensitising potential. Chronic overexposure may produce tolerance and the suggested exposure limit for workers is lower than that for nuisance dusts.
Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

<table>
<thead>
<tr>
<th>NAME</th>
<th>CAS RN</th>
<th>%</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cefoxitin Sodium Salt</td>
<td>33564-30-6</td>
<td>&gt;98</td>
</tr>
</tbody>
</table>

Section 4 - FIRST AID MEASURES

**SWALLOWED**
- If swallowed do NOT induce vomiting.
- If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain open airway and prevent aspiration.
- Observe the patient carefully.
- Never give liquid to a person showing signs of being sleepy or with reduced awareness; i.e. becoming unconscious.

**EYE**
If this product comes in contact with the eyes:
- Wash out immediately with fresh running water.
- Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.
- Seek medical attention without delay; if pain persists or recurs seek medical attention.
- Removal of contact lenses after an eye injury should only be undertaken by skilled personnel.

**SKIN**
If skin contact occurs:
- Immediately remove all contaminated clothing, including footwear.
- Flush skin and hair with running water (and soap if available).
- Seek medical attention in event of irritation.

**INHALED**
- If dust is inhaled, remove from contaminated area.
- Encourage patient to blow nose to ensure clear passage of breathing.
- If irritation or discomfort persists seek medical attention.

**NOTES TO PHYSICIAN**
- Treat symptomatically.
- Widely distributed in body fluids and tissues. It appears in pleural, pericardial, peritoneal and synovial fluids and diffuses across the placenta into foetal circulation. Little passes into normal cerebrospinal fluid. Plasma half-life is about 45-60 mins. with about 70% bound to plasma proteins. 77%-99% appears in the urine within 12 hours. Low concentrations are achieved in the bile.

Section 5 - FIRE FIGHTING MEASURES

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vapour Pressure (mmHG)</td>
<td>Negligible</td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
<td>Not available</td>
</tr>
<tr>
<td>Specific Gravity (water=1)</td>
<td>Not available</td>
</tr>
<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not available</td>
</tr>
</tbody>
</table>

**EXTINGUISHING MEDIA**
- Water spray or fog.
- Foam.
- Dry chemical powder.
- BCF (where regulations permit).

**FIRE FIGHTING**
- Alert Fire Brigade and tell them location and nature of hazard.
- Wear breathing apparatus plus protective gloves.
- Prevent, by any means available, spillage from entering drains or water courses.
- Use water delivered as a fine spray to control fire and cool adjacent area. When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 100 metres in all directions.

**GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS**
- Combustible solid which burns but propagates flame with difficulty; it is estimated that most organic dusts are combustible (circa 70%) - according to the circumstances under which the combustion process occurs, such materials may cause fires and / or dust explosions.
- Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or
some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions).

- Avoid generating dust, particularly clouds of dust in a confined or unventilated space as dusts may form an explosive mixture with air, and any source of ignition, i.e. flame or spark, will cause fire or explosion. Dust clouds generated by the fine grinding of the solid are a particular hazard; accumulations of fine dust (420 micron or less) may burn rapidly and fiercely if ignited - particles exceeding this limit will generally not form flammable dust clouds; once initiated, however, larger particles up to 1400 microns diameter will contribute to the propagation of an explosion.

- In the same way as gases and vapours, dusts in the form of a cloud are only ignitable over a range of concentrations; in principle, the concepts of lower explosive limit (LEL) and upper explosive limit (UEL) are applicable to dust clouds but only the LEL is of practical use; - this is because of the inherent difficulty of achieving homogeneous dust clouds at high temperatures (for dusts the LEL is often called the "Minimum Explosible Concentration", MEC)

Combustion products include: carbon monoxide (CO), carbon dioxide (CO2), nitrogen oxides (NOx), sulfur oxides (SOx), other pyrolysis products typical of burning organic material.

Both the free acid and sodium salt melt and char in a match or meker burner flame. The flame self-extinguishes as soon as an ignition source is removed. Both compounds will contribute to an existing fire.

**FIRE INCOMPATIBILITY**

- Avoid contamination with oxidising agents i.e. nitrates, oxidising acids, chlorine bleaches, pool chlorine etc. as ignition may result

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**Section 6 - ACCIDENTAL RELEASE MEASURES**

**MINOR SPILLS**
Environmental hazard - contain spillage.
- Clean up waste regularly and abnormal spills immediately.
- Avoid breathing dust and contact with skin and eyes.
- Wear protective clothing, gloves, safety glasses and dust respirator.
- Use dry clean up procedures and avoid generating dust.

**MAJOR SPILLS**
Environmental hazard - contain spillage.
Moderate hazard.
- CAUTION: Advise personnel in area.
- Alert Emergency Services and tell them location and nature of hazard.
- Control personal contact by wearing protective clothing.
- Prevent, by any means available, spillage from entering drains or water courses.

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**Section 7 - HANDLING AND STORAGE**

**PROCEDURE FOR HANDLING**
- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.
- Use in a well-ventilated area.
- Prevent concentration in hollows and sumps.
- Organic powders when finely divided over a range of concentrations regardless of particulate size or shape and suspended in air or some other oxidizing medium may form explosive dust-air mixtures and result in a fire or dust explosion (including secondary explosions)
- Minimise airborne dust and eliminate all ignition sources. Keep away from heat, hot surfaces, sparks, and flame.
- Establish good housekeeping practices.
- Remove dust accumulations on a regular basis by vacuuming or gentle sweeping to avoid creating dust clouds.

**RECOMMENDED STORAGE METHODS**
- Glass container is suitable for laboratory quantities
- Polyethylene or polypropylene container.
- Check all containers are clearly labelled and free from leaks.

**STORAGE REQUIREMENTS**
- Store in original containers.
- Keep containers securely sealed.
- Store in a cool, dry area protected from environmental extremes.
- Store away from incompatible materials and foodstuff containers.

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**Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION**

**EXPOSURE CONTROLS**
The following materials had no OELs on our records
cefoxitin sodium: CAS:33564-30-6

PERSONAL PROTECTION

**RESPIRATOR**

**EYE**
When handling very small quantities of the material eye protection may not be required.
For laboratory, larger scale or bulk handling or where regular exposure in an occupational setting occurs:
- Chemical goggles
- Face shield. Full face shield may be required for supplementary but never for primary protection of eyes
- Contact lenses may pose a special hazard; soft contact lenses may absorb and concentrate irritants. A written policy document, describing the wearing of lenses or restrictions on use, should be created for each workplace or task. This should include a review of lens absorption and adsorption for the class of chemicals in use and an account of injury experience. Medical and first-aid personnel should be trained in their removal and suitable equipment should be readily available. In the event of chemical exposure, begin eye irrigation immediately and remove contact lens as soon as practicable. Lenses should be removed at the first signs of eye redness or irritation - lens should be removed in a clean environment only after workers have washed hands thoroughly. [CDC NIOSH Current Intelligence Bulletin 59], [AS/NZS 1336 or national equivalent]

**HANDS/FEET**

NOTE:
- The material may produce skin sensitisation in predisposed individuals. Care must be taken, when removing gloves and other protective equipment, to avoid all possible skin contact.
- Contaminated leather items, such as shoes, belts and watch-bands should be removed and destroyed.

Suitability and durability of glove type is dependent on usage. Important factors in the selection of gloves include:
- frequency and duration of contact,
- chemical resistance of glove material,
- glove thickness and
- dexterity
- Rubber gloves (nitrile or low-protein, powder-free latex, latex/ nitrile). Employees allergic to latex gloves should use nitrile gloves in preference.
- Double gloving should be considered.
- PVC gloves.
- Change gloves frequently and when contaminated, punctured or torn.

**OTHER**
- For quantities up to 500 grams a laboratory coat may be suitable.
- For quantities up to 1 kilogram a disposable laboratory coat or coverall of low permeability is recommended. Coveralls should be buttoned at collar and cuffs.
- For quantities over 1 kilogram and manufacturing operations, wear disposable coverall of low permeability and disposable shoe covers.
- For manufacturing operations, air-supplied full body suits may be required for the provision of advanced respiratory protection.

**ENGINEERING CONTROLS**
- Enclosed local exhaust ventilation is required at points of dust, fume or vapour generation.
- HEPA terminated local exhaust ventilation should be considered at point of generation of dust, fumes or vapours.
- Barrier protection or laminar flow cabinets should be considered for laboratory scale handling.
- When handling quantities up to 500 gram in either a standard laboratory with general dilution ventilation (e.g. 6-12 air changes per hour) is preferred.

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**PHYSICAL AND CHEMICAL PROPERTIES**

**PHYSICAL PROPERTIES**

Solid.
Mixes with water.

<table>
<thead>
<tr>
<th>State</th>
<th>Divided solid</th>
<th>Molecular Weight</th>
<th>Viscosity</th>
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<tr>
<td>Property</td>
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<tr>
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<td>--------------------------------------------</td>
<td></td>
<td></td>
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<tr>
<td>Boiling Range (°F)</td>
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<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Flash Point (°F)</td>
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<td></td>
</tr>
<tr>
<td>Decomposition Temp (°F)</td>
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</tr>
<tr>
<td>Autoignition Temp (°F)</td>
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<td></td>
<td></td>
</tr>
<tr>
<td>Upper Explosive Limit (%)</td>
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<tr>
<td>Lower Explosive Limit (%)</td>
<td>Not available</td>
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<tr>
<td>Volatile Component (%vol)</td>
<td>Negligible</td>
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<tr>
<td>Solubility in water (g/L)</td>
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<tr>
<td>pH (1% solution)</td>
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<tr>
<td>pH (as supplied)</td>
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<tr>
<td>Vapour Pressure (mmHg)</td>
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<tr>
<td>Specific Gravity (water=1)</td>
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<tr>
<td>Relative Vapour Density (air=1)</td>
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<tr>
<td>Evaporation Rate</td>
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</table>

**APPEARANCE**
Somewhat hygroscopic powder with slight characteristic odour; mixes with water.

**Section 10 - CHEMICAL STABILITY**

**CONDITIONS CONTRIBUTING TO INSTABILITY**
- Presence of incompatible materials.
- Product is considered stable.
- Hazardous polymerisation will not occur.

**STORAGE INCOMPATIBILITY**
- Avoid reaction with oxidising agents

For incompatible materials - refer to Section 7 - Handling and Storage.

**Section 11 - TOXICOLOGICAL INFORMATION**

**cefoxitin sodium**

**TOXICITY AND IRRITATION**
No data for this material.

**Section 12 - ECOLOGICAL INFORMATION**

This material and its container must be disposed of as hazardous waste.

**Ecotoxicity**

<table>
<thead>
<tr>
<th>Ingredient</th>
<th>Persistence: Water/Soil</th>
<th>Persistence: Air</th>
<th>Bioaccumulation</th>
<th>Mobility</th>
</tr>
</thead>
<tbody>
<tr>
<td>cefoxitin sodium</td>
<td>No Data Available</td>
<td>No Data Available</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Section 13 - DISPOSAL CONSIDERATIONS**

**Disposal Instructions**
All waste must be handled in accordance with local, state and federal regulations. Legislation addressing waste disposal requirements may differ by country, state and/ or territory. Each user must refer to laws operating in their area. In some areas, certain wastes must be tracked. A Hierarchy of Controls seems to be common - the user should investigate:
- Reduction
- Reuse
- Recycling
- Disposal (if all else fails)

This material may be recycled if unused, or if it has not been contaminated so as to make it unsuitable for its intended use. Shelf life considerations should also be applied in making decisions of this type. Note that properties of a material may change in use, and recycling or reuse may not always be appropriate. In most instances the supplier of the material should be consulted.
- DO NOT allow wash water from cleaning or process equipment to enter drains.
- It may be necessary to collect all wash water for treatment before disposal.
- In all cases disposal to sewer may be subject to local laws and regulations and these should be considered first.
- Where in doubt contact the responsible authority.
Recycle wherever possible.
Consult manufacturer for recycling options or consult local or regional waste management authority for disposal if no suitable treatment or disposal facility can be identified.
Dispose of by: burial in a land-fill specifically licenced to accept chemical and/or pharmaceutical wastes or Incineration in a licenced apparatus (after admixture with suitable combustible material)
Decontaminate empty containers. Observe all label safeguards until containers are cleaned and destroyed.

Section 14 - TRANSPORTATION INFORMATION

DOT:
Symbols: G Hazard class or Division: 9
Identification Numbers: UN3077 PG: III
Label Codes: 9 Special provisions: 8, 146, 335, B54, IB8, IP3, N20, T1, TP33
Packaging: Exceptions: 155 Packaging: Non-bulk: 213
Packaging: Exceptions: 155 Quantity limitations: No limit
Packaging: Exceptions: Cargo aircraft only: No limit Vessel stowage: Location: A
Vessel stowage: Other: None

Hazardous materials descriptions and proper shipping names:
Environmentally hazardous substance, solid, n.o.s

Air Transport IATA:
ICAO/IATA Class: 9 ICAO/IATA Subrisk: None
UN/ID Number: 3077 Packing Group: III
Special provisions: A97
Cargo Only
Packing Instructions: 956 Maximum Qty/Pack: 400 kg
Passenger and Cargo
Packing Instructions: 956 Maximum Qty/Pack: 400 kg
Passenger and Cargo Limited Quantity
Packing Instructions: Y956 Maximum Qty/Pack: 30 kg G

Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains cefoxitin sodium)

Maritime Transport IMDG:
IMDG Class: 9 IMDG Subrisk: None
UN Number: 3077 Packing Group: III
EMS Number: F-A,S-F Special provisions: 274 335
Limited Quantities: 5 kg Marine Pollutant: Yes
Shipping name: ENVIRONMENTALLY HAZARDOUS SUBSTANCE, SOLID, N.O.S. (contains cefoxitin sodium)
Section 15 - REGULATORY INFORMATION

cefoxitin sodium (CAS: 33564-30-6) is found on the following regulatory lists;
"Canada List of Prohibited and Restricted Cosmetic Ingredients (The Cosmetic Ingredient "Hotlist")", "Canada Substances in Products Regulated Under the Food and Drugs Act (F&DA) That Were In Commerce between January 1, 1987 and September 13, 2001 (English)"

Section 16 - OTHER INFORMATION

LIMITED EVIDENCE
- Ingestion may produce health damage*.
- Cumulative effects may result following exposure*.
- Possible respiratory and skin sensitiser*.
* (limited evidence).
- Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references. A list of reference resources used to assist the committee may be found at: www.chemwatch.net/references.
- The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings.
- For detailed advice on Personal Protective Equipment, refer to the following U.S. Regulations and Standards:
  OSHA Standards - 29 CFR:
  1910.132 - Personal Protective Equipment - General requirements
  1910.133 - Eye and face protection
  1910.134 - Respiratory Protection
  1910.136 - Occupational foot protection
  1910.138 - Hand Protection
  Eye and face protection - ANSI Z87.1
  Foot protection - ANSI Z41
  Respirators must be NIOSH approved.

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