1. IDENTIFICATION

Product Identifier: Cefoperazone sodium
Product Number: C010
Distributor Name: TOKU-E Company
Distributor Address: 715 W Orchard Dr, Suite 3
Bellingham, WA 98225
Phone Number: (360) 734-1789
Emergency Phone Number (International): +1 (352) 323-3500
Emergency Phone Number (US only): 1 (800) 535-5053
Safety Data Sheet Issued by: TOKU-E USA
CAS Number: [62893-20-3]
EC/REACH Number: [263-751-5]
Recommended Use: Third-generation cephalosporin antibiotic
Restrictions on Use: Not for human or animal use

2. HAZARD(S) IDENTIFICATION

GHS Classification
Respiratory sensitization (Category 1)
Skin sensitization (Category 1)

GHS Label Elements, Including Precautionary statements
Signal Word: Danger

Hazard Statements
H317: May cause an allergic skin reaction
H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary Statements
P261: Avoid breathing dust/ fumes/ gas/ mist/ vapors/ spray
P272: Contaminated work clothing should not be allowed out of the workplace
P280: Wear protective gloves/ eye protection/ face protection
P285: In case of inadequate ventilation, wear respiratory protection
P302 + P352: IF ON SKIN: Wash with plenty of soap and water
P304+P341: IF INHALED: If breathing is difficult, remove victim to fresh air and keep at rest in
Hazards not otherwise classified (HNOC) by GHS
None

3. COMPOSITION/INFORMATION ON INGREDIENTS

Synonym(s) Cefoperazone;
Sodium cefoperazone;
T-1551;
5-Thia-1-azabicyclo(4.2.0)oct-2-ene-2-carboxylic acid, 7-(((4-ethyl-2,3-dioxo-1-
piperazinyl)carbonyl)amino) (4-hydroxyphenyl)
acetyl)amino)-3-(((1-methyl-1H-tetrazol-5-
yl)thio)methyl)-8-oxo-, monosodium salt,(6R-
alpha,7-beta(R*))-

Formula \( C_{25}H_{26}N_{9}NaO_{8}S_{2} \)
Molecular Weight 667.65 g/mol
CAS-No. \([62893-20-3]\)
EC-No. \([263-751-5]\)
Index-No. Not available
Hazardous components Cefoperazone sodium
Respiratory sensitization (Category 1)
Skin sensitization (Category 1)

4. FIRST-AID MEASURES

General Advice Consult a physician. Show this Safety Data Sheet to the medical provider

If Inhaled If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a doctor

In Case of Skin Contact Wash thoroughly with plenty of soap and water. Consult a physician

In Case of Eye Contact Rinse thoroughly with plenty of water for at least 15 minutes, consult a doctor

If Swallowed Never give anything by mouth to an unconscious person. Consult a doctor. Rinse mouth with water.
Most important symptoms and effects, both acute and delayed  
Indication of any immediate medical attention and special treatment needed

Please see Section 2 and/or Section 11

No data available

5. FIRE-FIGHTING MEASURES

Suitable Extinguishing Media
Water spray, alcohol-resistant foam, dry chemical, carbon dioxide

Special Protective Equipment for Firefighters
Wear self-contained breathing apparatus

Hazardous Combustion Products
Formed under fire conditions: Carbon, Nitrogen, Sodium, and Sulfur oxides

6. ACCIDENTAL RELEASE MEASURES

General
Evacuate personnel to safe location

Personal Precautions
Wear respiratory protection. Avoid dust formation and breathing vapors/mist/dust/gas. Ensure adequate ventilation

Environmental Precautions
Prevent spillage, do not let product enter drains

Methods of Containment and Cleanup
Place in suitable, closed containers for licensed disposal. Avoid dust formation

7. HANDLING AND STORAGE

Precautions for Safe Handling
Avoid contact with skin and eyes. Provide exhaust ventilation in areas where dust if formed

Precautions for Safe Storage
Keep container tightly closed and in a dry, well-ventilated place. Recommended storage temperature: -20°C

Incompatibilities
None known

8. EXPOSURE CONTROLS/ PERSONAL PROTECTION

Contains no substances with occupational exposure limit values

PPE: 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)

PPE: Hand Protection
Handle with gloves. Gloves must be inspected prior to use. Use proper glove removal techniques to avoid skin contact with this product. Dispose of contaminated gloves after use in accordance with applicable laws and good laboratory practices, and
wash and dry hands

PPE: Eye Protection
Use a face shield and safety glasses. Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166 (EU)

PPE: Skin and Body Protection
Handle with gloves. Wear protective clothing. Choose body protection according to the amount and concentration of the dangerous substance at the workplace. When deemed needed according to the concentration and amount of this product, use a complete body suit

9. PHYSICAL/ CHEMICAL PROPERTIES
Appearance White or slightly yellow powder
pH 4.5-6.5
Melting Point/Freezing Point 200-202°C
Boiling Point No data available
Flash Point No data available
Ignition Temperature No data available
Autoignition Temperature No data available
Lower Explosion Limit No data available
Upper Explosion Limit No data available
Vapor Pressure No data available
Density No data available
Water Solubility Freely soluble
Solubility in Other Solvents Ethanol (96%): Slightly soluble
Methanol: Soluble
Partition Coefficient: n-octanol/water No data available
Optical Rotation No data available
Absorbance (290nm, 5% in H2O) No data available
Water content (Karl Fisher) ≤5.0%

10. STABILITY AND REACTIVITY
Chemical Stability Stable under recommended storage conditions
Possibility of Hazardous Reactions No data available
Conditions to Avoid No data available
Materials to Avoid Oxidizing agents
Hazardous Decomposition Products Carbon, Nitrogen, Sodium, and Sulfur oxides formed under fire conditions

11. TOXICOLOGICAL INFORMATION
Oral LD<sub>50</sub>  
Rat: >12,000 mg/kg  
Remarks, Behavioral: Somnolence (general depressed activity)  
Mouse: >15,000 mg/kg  
Remarks, Behavioral: Somnolence (general depressed activity)  
Remarks, Gastrointestinal: Hypermotility, diarrhea  
Remarks, Skin and Appendages: Hair

Inhalation LC<sub>50</sub>  
No data available

Dermal LD<sub>50</sub>  
No data available

Intramuscular TD<sub>LO</sub>  
Dog: 6,000 mg/kg/30D-I  
Remarks, Skin and Appendages: Dermatitis, other (after systemic exposure)

Intraperitoneal TD<sub>LO</sub>  
Rat: 120,000 mg/kg/30D-I  
Remarks, Gastrointestinal: Peritonitis  
Remarks, Kidney, Ureter, Bladder: Changes in tubules (including acute renal failure, acute tubular necrosis)  
Remarks, Nutritional and Gross Metabolic: Weight loss or decreased weight gain  
Rat: 728 g/kg/26W-I  
Remarks, Gastrointestinal: Peritonitis  
Remarks, Kidney, Ureter, Bladder: Urine volume increased  
Remarks, Nutritional and Gross Metabolic: Weight loss or decreased weight gain

Intraperitoneal LD<sub>50</sub>  
Rat: >12,000 mg/kg  
Remarks, Behavioral: Muscle contraction or spasticity  
Remarks, Gastrointestinal: Other changes  
Mouse: 8,200 mg/kg  
Remarks, Lungs, Thorax or Respiration: Acute pulmonary edema

Intravenous TD<sub>LO</sub>  
Human, Man: 57 mg/kg/4D-I  
Remarks, Sense Organs and Special Senses (Olfaction): Effect, not otherwise specified  
Remarks, Kidney, Ureter, Bladder: Hematuria  
Remarks, Blood: Hemorrhage  
Human, Woman: 220 mg/kg/5D-I  
Remarks, Gastrointestinal: Ulceration or bleeding from large intestine  
Remarks, Blood: Hemorrhage  
Dog: 70,000 mg/kg/35D-I  
Remarks, Sense Organs and Special Senses (Eye): Lacrimation  
Remarks, Gastrointestinal: Hypermotility, diarrhea  
Remarks, Kidney, Ureter, Bladder: Changes in tubules (including acute renal failure, acute
<table>
<thead>
<tr>
<th>Exposure Route</th>
<th>Species</th>
<th>Concentration</th>
<th>Remarks</th>
</tr>
</thead>
<tbody>
<tr>
<td>Intravenous LD&lt;sub&gt;10&lt;/sub&gt;</td>
<td>Dog</td>
<td>6,000 mg/kg</td>
<td>tubular necrosis)</td>
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<td></td>
<td>Remarks, Sense Organs and Special Senses (Eye):</td>
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<td></td>
<td>Lacrimation</td>
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<td></td>
<td></td>
<td>Remarks, Gastrointestinal: Hypermotility, diarrhea,</td>
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<td></td>
<td></td>
<td>nausea or vomiting</td>
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<tr>
<td>Intravenous LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Rat</td>
<td>4,260 mg/kg</td>
<td>Remarks, Lungs, Thorax, or Respiration: Acute</td>
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<td></td>
<td>pulmonary edema</td>
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<td>Mouse: 3,840 mg/kg</td>
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<td>Remarks, Lungs, Thorax, or Respiration: Acute</td>
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<td>pulmonary edema</td>
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<tr>
<td>Parenteral TD&lt;sub&gt;10&lt;/sub&gt;</td>
<td>Human</td>
<td>622 mg/kg/10D-I</td>
<td>Remarks, Gastrointestinal: Other changes</td>
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<td></td>
<td>Remarks, Kidney, Ureter, Bladder: Hematuria</td>
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<td></td>
<td></td>
<td>Remarks, Blood: Other changes</td>
</tr>
<tr>
<td>Subcutaneous LD&lt;sub&gt;50&lt;/sub&gt;</td>
<td>Rat</td>
<td>&gt;12,000 mg/kg</td>
<td>Remarks, Skin and Appendages: Dermatitis, other</td>
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<td></td>
<td>(after systemic exposure)</td>
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<td>Mouse: 13,000 mg/kg</td>
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<tr>
<td>Skin Corrosion/Irritation</td>
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<td>No data available</td>
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<tr>
<td>Serious Eye Damage/ Eye Irritation</td>
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<td>No data available</td>
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<tr>
<td>Respiratory or Skin Sensitization</td>
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<td>No data available</td>
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<tr>
<td>Germ Cell Mutagenicity</td>
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<td>No data available</td>
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<tr>
<td>Carcinogenicity</td>
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<td></td>
<td>IARC: No component of this product present at</td>
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<td>levels greater than or equal to 0.1% is identified as</td>
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<td>probable, possible, or confirmed human</td>
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<td>carcinogen by IARC</td>
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<td>ACGIH: No component of this product present at</td>
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<td>levels greater than or equal to 0.1% is identified as</td>
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<td>a carcinogen or potential carcinogen by ACGIH</td>
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<td>NTP: No component of this product present at</td>
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<td>levels greater than or equal to 0.1% is identified as</td>
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<td>a known or anticipated carcinogen by NTP</td>
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<td>OSHA: No component of this product present at</td>
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<td>levels greater than or equal to 0.1% is identified as</td>
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<td>a carcinogen or potential carcinogen by OSHA</td>
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<tr>
<td>Reproductive Toxicity</td>
<td>Intravenous TD&lt;sub&gt;10&lt;/sub&gt;</td>
<td>Rat, 7-17 days after conception: 2,750 mg/kg</td>
<td>Remarks: Maternal effects, other</td>
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<tr>
<td>Specific Target Organ Toxicity: Single Exposure (Globally Harmonized System)</td>
<td>No data available</td>
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<tr>
<td>Specific Target Organ Toxicity: Repeated Exposure (Globally Harmonized System)</td>
<td>No data available</td>
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<tr>
<td>Aspiration Hazard</td>
<td>No data available</td>
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<tr>
<td>Potential Health Effects</td>
<td>See Section 2, Hazard(s) Identification</td>
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<tr>
<td>Signs and Symptoms of Exposure</td>
<td>Cephalosporins are associated with</td>
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gastrointestinal disturbance, increased liver enzymes, lymphocytosis, cholestatic jaundice, and diarrhea. Because of the similarity in structure of the penicillins and cephalosporins, those who are allergic to one class of agents may manifest cross-allergenicity when a member of another class is encountered.

To the best of our knowledge, the chemical, physical, and toxicological properties of this material have not been thoroughly investigated.

Synergistic Effects
Additional Information

RTECS: X10374000

12. ECOLOGICAL INFORMATION

Toxicity
Persistence and Degradability
Bioaccumulative Potential
Mobility in Soil
PBT and vPvB Assessment

No data available
No data available
No data available
No data available
No data available

Treat as if harmful if released into environment

13. DISPOSAL CONSIDERATIONS

Product
Contaminated Packaging

Dispose of product through a licensed disposal company
Dispose of as unused product

14. TRANSPORTATION INFORMATION

DOT (US)
IMDG
IATA

Not Dangerous Goods
Not Dangerous Goods
Not Dangerous Goods

15. REGULATORY INFORMATION

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 Hazards

Acute Health Hazard

Massachusetts Right to Know Components

No components are subject to the Massachusetts Right to Know Act

Pennsylvania Right to Know Components

Cefoperazone
CAS-No. [62893-20-3]
Revision Date: Not available

New Jersey Right to Know Components

Cefoperazone
CAS-No. [62893-20-3]
California Prop. 65 Components

This product does not contain any chemicals known to the State of California to cause birth defects, cancer, or any other reproductive harm.

EU Information

SDS in accordance with REACH 1907/2006
EC No. [263-751-5]
CAS-No. [62893-20-3]
Name: 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[[4-ethyl-2,3-dioxo-1-piperazinyl]carbonyl]amino][4-hydroxyphenyl]acetyl]amino]-3-[[1-methyl-1H-tetrazol-5-yl]thio]methyl]-8-oxo-, monosodium salt, [6R-[6α,7β(R*)]]-
Envisaged Registration Deadline: 30/11/2010
See GHS Information under Section 2, Hazard Identification

16. OTHER INFORMATION

Date of last revision: 2016-02-11

The above information is believed to be correct but does not purport to be all-inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. TOKU-E Company shall not be held liable for any damage resulting from handling or from contact with the above product. Please see reverse side of invoice or packing slip for additional terms and conditions of sale.