

# Ceftiofur SDS/MSDS (Safety Data Sheet)

## 1. PRODUCT AND COMPANY IDENTIFICATION

Product identifier

\* Product Name: Ceftiofur

\* Catalog Number: S5356

\* CAS Number: 80370-57-6

\* IUPAC Name: 5-Thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid, 7-[[[(2Z)-2-(2-amino-4-thiazolyl)-2-(methoxyimino)acetyl]amino]-3-[[[(2-furanylcarbonyl)thio]methyl]-8-oxo-, (6R,7R)-

Relevant identified uses and uses advised against

\* Identified uses: For research and development use only; laboratory chemicals; manufacture of substances.

\* Uses advised against: Not for pharmaceutical, household, or other unapproved uses.

Details of the supplier

\* Company: Selleck Chemicals

\* TollFree: +1 877 796-6397

\* Tel: +1 832 582-8158

\* Fax: +1 832 582-8590

Emergency telephone number

\* Emergency phone #: +1 832 582-8158

## 2. HAZARDS IDENTIFICATION

### 2.1 GHS classification in accordance with 29 CFR 1910 (OSHA HCS):

Skin sensitization: Category 1. H317

Respiratory sensitization: Category 1. H334

### 2.2 GHS Label elements, including precautionary statements

Hazard Pictogram(s)



Signal Word

Danger

Hazard statement(s)

H317: May cause an allergic skin reaction

H334: May cause allergy or asthma symptoms or breathing difficulties if inhaled

Precautionary statement(s)

None.

|                   |                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                                  |
|-------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <b>Prevention</b> | <p>P233: Keep container tightly closed.</p> <p>P260: Do not breathe dust/fume/gas/mist/vapors/spray.</p> <p>P261: Avoid breathing dust/fume/gas/mist/vapors/spray.</p> <p>P271: Use only outdoors or in a well-ventilated area.</p> <p>P272: Contaminated work clothing should not be allowed out of the workplace.</p> <p>P280: Wear protective gloves/protective clothing/eye protection/face protection/hearing protection.</p> <p>P284: [In case of inadequate ventilation] Wear respiratory protection.</p> |
| <b>Response</b>   | <p>P302+P352: IF ON SKIN: wash with plenty of water.</p> <p>P304+P340: IF INHALED: Remove person to fresh air and keep comfortable for breathing.</p> <p>P321: Specific treatment (see information on this label and safety datasheet)).</p> <p>P333+P317: If skin irritation or rash occurs: Get medical help.</p> <p>P342+P316: If experiencing respiratory symptoms: Get emergency medical help immediately.</p> <p>P362+P364: Take off contaminated clothing and wash it before reuse.</p>                   |
| <b>Storage</b>    | P403: Store in a well-ventilated place.                                                                                                                                                                                                                                                                                                                                                                                                                                                                          |
| <b>Disposal</b>   | P501: P501 Dispose of contents/ container to an approved waste disposal plant.                                                                                                                                                                                                                                                                                                                                                                                                                                   |

## 2.3 Other hazards

None.

## 3. COMPOSITION/INFORMATION ON INGREDIENTS

### 3.1 Substances

Product name: Cefitofur

CAS Number: 80370-57-6

PubChem CID: 6328657

Molecular formula: C<sub>19</sub>H<sub>17</sub>N<sub>5</sub>O<sub>7</sub>S<sub>3</sub>

Molecular weight: 523.6 g/mol

IUPAC name: (6R,7R)-7-[[[(2Z)-2-(2-amino-1,3-thiazol-4-yl)-2-methoxyiminoacetyl]amino]-3-(furan-2-carbonylsulfanylmethyl)-8-oxo-5-thia-1-azabicyclo[4.2.0]oct-2-ene-2-carboxylic acid

### 3.2 Mixtures

Not applicable (pure substance).

## 4. FIRST-AID MEASURES

### 4.1 Description of first aid measures

Inhalation: Move to fresh air. Keep at rest in a position comfortable for breathing. Seek medical attention if symptoms persist.

Skin contact: Wash with plenty of soap and water. Remove contaminated clothing. Seek medical attention if irritation develops.

Eye contact: Rinse cautiously with water for several minutes. Remove contact lenses if present and easy to do. Continue rinsing. Seek medical attention.

Ingestion: Rinse mouth. Do NOT induce vomiting unless directed by medical personnel. Seek medical attention.

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

See Section 11 (Toxicological Information).

#### **4.3 Indication of any immediate medical attention and special treatment needed**

Treat symptomatically. Contact a poison control center or physician for severe exposure.

### **5. FIRE-FIGHTING MEASURES**

#### **5.1 Extinguishing media**

Suitable: Water spray, dry chemical, carbon dioxide (CO<sub>2</sub>), alcohol-resistant foam.

Unsuitable: None known.

#### **5.2 Specific hazards arising from the substance or mixture**

Combustible. Heating may produce toxic fumes.

#### **5.3 Advice for firefighters**

Wear self-contained breathing apparatus (SCBA) and full protective clothing.

Fight fire from upwind. Cool containers with water spray until fire is extinguished.

### **6. ACCIDENTAL RELEASE MEASURES**

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

Wear appropriate personal protective equipment (see Section 8).

Avoid breathing dust/vapor. Ensure adequate ventilation.

Evacuate personnel to safe areas. Keep people away from and upwind of spill.

#### **6.2 Environmental precautions**

Prevent product from entering drains, waterways, or soil.

Contain spill with inert absorbent material.

#### **6.3 Methods and materials for containment and cleaning up**

SRP: At the time of review, criteria for land treatment or burial (sanitary landfill) disposal practices are subject to significant revision. Prior to implementing land disposal of waste residue (including waste sludge), consult with environmental regulatory agencies for guidance on acceptable disposal practices.

### **7. HANDLING AND STORAGE**

#### **7.1 Precautions for safe handling**

Store unconstituted product at controlled room temperature, 20 to 25 °C (68 to 77 °F), unless otherwise specified by manufacturer. Store reconstituted product either in a refrigerator at 2 to 8 °C (36 to 46 °F) for up to seven days or at controlled room temperature, 20 to 25 °C (68 to 77 °F), for up to twelve hours, unless otherwise specified by manufacturer. Protect from light. /Ceftiofur sodium for injection/

Store below 40 °C (104 °F), preferably between 15 and 30 °C (59 and 86 °F), unless otherwise specified by manufacturer. Protect from freezing. /Ceftiofur hydrochloride injection/

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

Store unconstituted product at controlled room temperature, 20 to 25 °C (68 to 77 °F), unless otherwise specified by manufacturer. Store reconstituted product either in a refrigerator at 2 to 8 °C (36 to 46 °F) for up to seven days or at controlled room temperature, 20 to 25 °C (68 to 77 °F), for up to twelve hours, unless otherwise specified by manufacturer. Protect from light. /Ceftiofur sodium for injection/

Store below 40 °C (104 °F), preferably between 15 and 30 °C (59 and 86 °F), unless otherwise specified by manufacturer. Protect from freezing. /Ceftiofur hydrochloride injection/

Store away from incompatible materials (see Section 10).

[Note: Specific storage temperature not available in public databases. Refer to supplier Certificate of Analysis (COA) for exact storage conditions.]

## **8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

### **8.1 Exposure controls**

#### **8.1.1 Occupational exposure limits (OEL)**

OSHA PEL: Not established.

ACGIH TLV: Not established.

NIOSH REL: Not established.

No occupational exposure limit values are established for this substance.

Use the lowest feasible exposure level (ALARA principle).

#### **8.1.2 Appropriate engineering controls**

Use only in a chemical fume hood or with local exhaust ventilation.

Ensure adequate ventilation to keep airborne concentrations below exposure limits.

### **8.2 Individual protection measures**

#### **8.2.1 Eye/face protection**

Wear safety glasses with side shields.

#### **8.2.2 Skin protection**

Wear protective gloves. Recommended material: Nitrile rubber.

Wear suitable protective clothing (lab coat).

#### **8.2.3 Respiratory protection**

Use NIOSH-approved dust/mist respirator (N95 or higher) if ventilation is inadequate.

#### **8.2.4 Thermal hazards**

Not applicable.

## **9. PHYSICAL AND CHEMICAL PROPERTIES**

### **9.1 Information on basic physical and chemical properties**

a) Appearance: Solid powder (typical for research compounds)

b) Odor: No data available

c) Odor threshold: No data available

d) pH: No data available

e) Melting point/freezing point: No data available

f) Initial boiling point and boiling range: No data available

g) Flash point: No data available

h) Evaporation rate: No data available

- i) Flammability (solid, gas): No data available
- j) Upper/lower flammability or explosive limits: No data available
- k) Vapor pressure: No data available
- l) Vapor density: No data available
- m) Relative density: No data available
- n) Water solubility: Soluble in DMSO; slightly soluble in water
- o) Partition coefficient: n-octanol/water: Log P (n-octanol/water): 0.2
- p) Auto-ignition temperature: No data available
- q) Decomposition temperature: No data available
- r) Viscosity: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: No data available

## 9.2 Other information

Topological Polar Surface Area (TPSA): 256 Å<sup>2</sup>

Complexity: 945

## 10. STABILITY AND REACTIVITY

### 10.1 Reactivity

No specific reactivity hazards identified under normal handling conditions.

### 10.2 Chemical stability

Stable under recommended storage conditions.

### 10.3 Possibility of hazardous reactions

No hazardous reactions under normal conditions.

### 10.4 Conditions to avoid

Avoid heat, sparks, open flames, direct sunlight, and moisture.

Avoid strong oxidizing agents, strong acids, and strong bases.

### 10.5 Incompatible materials

Strong oxidizing agents, strong acids, strong bases.

### 10.6 Hazardous decomposition products

Thermal decomposition may produce: Carbon monoxide (CO), Carbon dioxide (CO<sub>2</sub>), Nitrogen oxides (NO<sub>x</sub>), Sulfur oxides (SO<sub>x</sub>).

See also Section 5 (Fire-fighting measures) for combustion products.

## 11. TOXICOLOGICAL INFORMATION

### 11.1 Information on toxicological effects

#### Acute toxicity:

No acute toxicity data available.

#### Skin corrosion/irritation:

No data available.

**Serious eye damage/eye irritation:**

No data available.

**Respiratory or skin sensitization:**

May cause allergy or asthma symptoms or breathing difficulties if inhaled (H334).

**Germ cell mutagenicity:**

No data available.

**Carcinogenicity:**

No data available.

**Reproductive toxicity:**

No data available.

**Specific target organ toxicity (single exposure):**

No data available.

**Specific target organ toxicity (repeated exposure):**

No data available.

**Aspiration hazard:**

No data available.

## 11.2 Additional information

No additional toxicological information available.

## 12. ECOLOGICAL INFORMATION

### 12.1 Toxicity

Ceftiofur's production and use as a veterinary antibacterial medicine may result in its release to the environment through various waste streams. If released to air, an estimated vapor pressure of  $6 \times 10^{-20}$  mm Hg at 25 °C indicates ceftiofur will exist solely in the particulate phase in the atmosphere. Particulate-phase ceftiofur will be removed from the atmosphere by wet or dry deposition. Ceftiofur contains chromophores that absorb at wavelengths  $>290$  nm indicating that this substance may be susceptible to direct photolysis by sunlight; however photodegradation of ceftiofur sodium has been reported to be minimal. If released to soil, ceftiofur is expected to have slight mobility based upon an estimated Koc of 3,700. An estimated pKa of 3.7 (carboxylic acid) indicates that this compound will exist primarily as an anion in the environment and anions generally have higher mobility in soils than their neutral counterparts. Volatilization from moist soil surfaces is not expected to be an important fate process because anions do not volatilize. Volatilization from dry soil surfaces is not expected based on the estimated vapor pressure. Half-lives reported for the aerobic biodegradation of ceftiofur sodium in clay loam at pH 5, and at pH 7, and silty clay loam at pH 9 were 22.2, 49, and 41.1 days, respectively. If released into water, ceftiofur is expected to adsorb to suspended solids and sediment based upon the estimated Koc; however, adsorption may be less than this Koc indicates

### 12.2 Persistence and degradability

No data available.

### 12.3 Bioaccumulative potential

Log P (n-octanol/water): 0.2

Low potential for bioaccumulation (Log P  $< 3$ ).

### 12.4 Mobility in soil

No data available.

#### **12.5 Results of PBT and vPvB assessment**

PBT/vPvB assessment not available.

#### **12.6 Other adverse effects**

No other adverse ecological effects identified.

### **13. DISPOSAL CONSIDERATIONS**

#### **13.1 Waste treatment methods**

Waste Treatment Methods: Waste material must be disposed of in accordance with national and local regulations. Leave chemicals in original containers and do not mix with other waste. Handle uncleaned containers in the same manner as the product itself.

### **14. TRANSPORT INFORMATION**

#### **14.1 UN number**

Not regulated as dangerous goods (research quantities typically exempt).

#### **14.2 UN proper shipping name**

Not subject to transport regulations (small quantities for research use).

#### **14.3 Transport hazard class(es)**

Not classified as dangerous goods for transport (research quantities).

#### **14.4 Packing group**

Not applicable (not regulated as dangerous goods in typical research quantities).

#### **14.5 Environmental hazards**

Marine pollutant: No (not classified as environmentally hazardous per GHS).

#### **14.6 Special precautions for user**

Transport in original packaging. Ensure containers are tightly sealed.

For bulk or commercial quantities, consult applicable transport regulations (DOT, IATA, IMDG).

#### **14.7 Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code**

Not applicable.

### **15. REGULATORY INFORMATION**

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

US EPA / TSCA: Subject to EPA TSCA regulations

EU ECHA / REACH: Not available in public databases.

##### **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 (short-term) health hazard

**Massachusetts Right To Know Components:**

This material contains components subject to the Massachusetts Right to Know Act. See Section 2 for hazard classification.

**Pennsylvania Right To Know Components:**

This material contains components subject to the Pennsylvania Right to Know Act. See Section 2 for hazard classification.

**New Jersey Right To Know Components:**

This material contains components subject to the New Jersey Right to Know Act. See Section 2 for hazard classification.

**California Prop. 65 Components:**

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

**Other regulatory listings:**

- FDA Requirements: Implantation or injectable dosage form new animal drugs. Ceftiofur crystalline free acid. ... (1) Swine. Indications for use: For the treatment of swine respiratory disease (SRD) associated with Actinobacillus pleuropneumoniae, Pasteurella multocida, Haemophilus parasuis, and Streptococcus suis. ..

**15.2 Chemical safety assessment**

A chemical safety assessment has not been carried out for this substance.

For research-use-only compounds, no CSA is required under REACH Annex I.

**16. OTHER INFORMATION**

Revision Date: 2026/09/09

Further Information: The information provided is believed to be correct but is not exhaustive and should be used only as a guideline based on current knowledge. It does not represent a guarantee of the properties of the product. Selleck Chemicals Corporation and its Affiliates shall not be held liable for any damage resulting from handling or contact with the product.