1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1 Product identifiers
Product name: Ceftazidime hydrate
Product Number: C3809
Brand: Sigma

1.2 Relevant identified uses of the substance or mixture and uses advised against
Identified uses: Laboratory chemicals, Manufacture of substances

1.3 Details of the supplier of the safety data sheet
Company: Sigma-Aldrich Pte Ltd
1 Science Park Road
#02-14 The Capricorn
Singapore Science Park Road II
SINGAPORE 117528
SINGAPORE
Telephone: +65 6779 1200
Fax: +65 6779 1822

1.4 Emergency telephone number
Emergency Phone #: 1-800-262-8200

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture
Classification according to Regulation (EC) No 1272/2008 [EU-GHS/CLP]
Eye irritation (Category 2)
Respiratory sensitization (Category 1)
Skin sensitization (Category 1)

Classification according to EU Directives 67/548/EEC or 1999/45/EC
May cause sensitization by inhalation and skin contact.

2.2 Label elements
Labelling according Regulation (EC) No 1272/2008 [CLP]
Pictogram

Signal word: Danger

Hazard statement(s)
H317 May cause an allergic skin reaction.
H319 Causes serious eye irritation.
H334 May cause allergy or asthma symptoms or breathing difficulties if inhaled.

Precautionary statement(s)
P261 Avoid breathing dust/ fume/ gas/ mist/ vapours/ spray.
P280 Wear protective gloves.
P305 + P351 + P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
P342 + P331 If experiencing respiratory symptoms: Call a POISON CENTER or doctor/ physician.
Supplemental Hazard Statements

Hazard symbol(s)  

R-phrase(s)  
R42/43  May cause sensitization by inhalation and skin contact.

S-phrase(s)  
S22  Do not breathe dust.
S36/37  Wear suitable protective clothing and gloves.
S45  In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).

2.3 Other hazards - none

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms  
1-(((6R,7R)-7-[[2Z]-2-amino-4-thiazolyl][1-carboxy-1-methylethoxy]imino]acetyl]amino]-2-carboxy-8-oxo-5-thia-1-azabicyclo[4.2.0]o

Formula  
$C_{22}H_{22}N_{6}O_{7}S_{2} \cdot xH_{2}O$

Molecular Weight  
546,58 g/mol

<table>
<thead>
<tr>
<th>Component</th>
<th>Concentration</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ceftazidime</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>72558-82-8</td>
</tr>
<tr>
<td>EC-No.</td>
<td>276-715-9</td>
</tr>
<tr>
<td>Sodium carbonate</td>
<td></td>
</tr>
<tr>
<td>CAS-No.</td>
<td>497-19-8</td>
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<tr>
<td>EC-No.</td>
<td>207-838-8</td>
</tr>
<tr>
<td>Index-No.</td>
<td>011-005-00-2</td>
</tr>
<tr>
<td></td>
<td>10 - 20 %</td>
</tr>
</tbody>
</table>

4. FIRST AID MEASURES

4.1 Description of first aid measures

General advice  
Consult a physician. Show this safety data sheet to the doctor in attendance.

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

In case of skin contact  
Wash off with soap and plenty of water. Consult a physician.

In case of eye contact  
Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

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

4.2 Most important symptoms and effects, both acute and delayed  
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated. 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 the other class is encountered, anaphylaxis.
4.3 Indication of any immediate medical attention and special treatment needed
no data available

5. FIREFIGHTING MEASURES

5.1 Extinguishing media
Suitable extinguishing media
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.

5.2 Special hazards arising from the substance or mixture
Carbon oxides, nitrogen oxides (NOx), Sulphur oxides, Sodium oxides

5.3 Advice for firefighters
Wear self contained breathing apparatus for fire fighting if necessary.

5.4 Further information
no data available

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures
Use personal protective equipment. Avoid dust formation. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas. Avoid breathing dust.

6.2 Environmental precautions
Do not let product enter drains.

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

6.4 Reference to other sections
For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling
Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Provide appropriate exhaust ventilation at places where dust is formed.

7.2 Conditions for safe storage, including any incompatibilities
Store in cool place. Keep container tightly closed in a dry and well-ventilated place.
Recommended storage temperature: 2 - 8 °C

7.3 Specific end uses
no data available

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

8.2 Exposure controls
Appropriate engineering controls
Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

Personal protective equipment

Eye/face protection
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).

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.

The selected protective gloves have to satisfy the specifications of EU Directive 89/686/EEC and the standard EN 374 derived from it.

**Body Protection**
Complete suit protecting against chemicals. The type of protective equipment must be selected according to the concentration and amount of the dangerous substance at the specific workplace.

**Respiratory protection**
For nuisance exposures use type P95 (US) or type P1 (EU EN 143) particle respirator. For higher level protection use type OV/AG/P99 (US) or type ABEK-P2 (EU EN 143) respirator cartridges. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

### 9. PHYSICAL AND CHEMICAL PROPERTIES

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

<table>
<thead>
<tr>
<th>Property</th>
<th>Value</th>
</tr>
</thead>
</table>
| **a)** Appearance | Form: powder  
Colour: white |
| **b)** Odour | no data available |
| **c)** Odour 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)** Vapour pressure | no data available |
| **l)** Vapour density | no data available |
| **m)** Relative density | no data available |
| **n)** Water solubility | soluble |
| **o)** Partition coefficient: n-octanol/water | no data available |
| **p)** Autoignition 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 safety information

no data available
10. STABILITY AND REACTIVITY

10.1 Reactivity
no data available

10.2 Chemical stability
no data available
Contains the following stabiliser(s):
Sodium carbonate (10 %)

10.3 Possibility of hazardous reactions
no data available

10.4 Conditions to avoid
no data available

10.5 Incompatible materials
Strong oxidizing agents, Strong acids, Nitric acid, Peroxides, permanganates, e.g. potassium permanganate

10.6 Hazardous decomposition products
Other decomposition products - no data available

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity
LD50 Oral - rat - > 20.000 mg/kg
Remarks: Sense Organs and Special Senses (Nose, Eye, Ear, and Taste): Eye: Other.
Behavioral: Convulsions or effect on seizure threshold. Lungs, Thorax, or Respiration: Dyspnea.

Skin corrosion/irritation
no data available

no data available

Serious eye damage/eye irritation
no data available

no data available

Respiratory or skin sensitization
no data available

no data available

May cause allergic respiratory and skin reactions

Germ cell mutagenicity
no data available

Genotoxicity in vitro - Human - leukocyte
Unscheduled DNA synthesis

Carcinogenicity
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.

Reproductive toxicity
no data available

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

Potential health effects

**Inhalation**  May be harmful if inhaled. May cause respiratory tract irritation.
**Ingestion**  May be harmful if swallowed.
**Skin**  May be harmful if absorbed through skin. May cause skin irritation.
**Eyes**  Causes serious eye irritation.

Signs and Symptoms of Exposure
To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated., 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 the other class is encountered., anaphylaxis

Additional Information
RTECS: Not available

12. **ECOLOGICAL INFORMATION**

12.1 **Toxicity**
no data available
no data available

12.2 **Persistence and degradability**
no data available

12.3 **Bioaccumulative potential**
no data available

12.4 **Mobility in soil**
no data available

12.5 **Results of PBT and vPvB assessment**
no data available

12.6 **Other adverse effects**
no data available
no data available

13. **DISPOSAL CONSIDERATIONS**

13.1 **Waste treatment methods**

**Product**
Offer surplus and non-recyclable solutions to a licensed disposal company. Dissolve or mix the material with a combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

**Contaminated packaging**
Dispose of as unused product.

14. **TRANSPORT INFORMATION**

14.1 **UN number**
ADR/RID: -  IMDG: -  IATA: -

14.2 **UN proper shipping name**
ADR/RID:  Not dangerous goods
IMDG:  Not dangerous goods
IATA:  Not dangerous goods

14.3 **Transport hazard class(es)**
ADR/RID: -  IMDG: -  IATA: -

14.4 **Packaging group**
ADR/RID: -  IMDG: -  IATA: -
14.5 Environmental hazards
   ADR/RID: no
   IMDG Marine pollutant: no
   IATA: no

14.6 Special precautions for user
   no data available

15. REGULATORY INFORMATION
   This safety datasheet complies with the requirements of Regulation (EC) No. 1907/2006.

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
   no data available

15.2 Chemical Safety Assessment
   no data available

16. OTHER INFORMATION
    Further information
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