

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 03.12.2009

Revision: 20.08.2008

1 Identification of the substance/preparation and of the company/undertaking

- **Product details**
- **Trade name:** CAPROLACTAM SULPHATE
- **Application of the substance / the preparation** Intermediate for organic synthesis
- **Manufacturer/Supplier:**
- **Manufacturer**
 UBE Chemical Europe, S.A.
 Polígono El Serrallo s/n
 12100 Grao de Castellón (Spain)
 Tel: +34 964 73 80 00
 Fax: +34 964 73 81 80
- **Information in case of emergency:**
 Telephone in Spain: 704.1000.87
 International telephone: +44 (0) 208 762 8322

2 Hazards identification

- **Hazard description:**








C Corrosive

- **Information concerning particular hazards for human and environment:**
 The product has to be labelled due to the calculation procedure of the "General Classification guideline for preparations of the EU" in the latest valid version.
 R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
 R 35 Causes severe burns.
 R 37 Irritating to respiratory system.
- **Classification system:**
 The classification is according to the latest editions of the EU-lists, and extended by company and literature data.

3 Composition/information on ingredients

- **Chemical characterization**
- **Description:** Mixture of substances listed below with nonhazardous additions.

- **Dangerous components:**

CAS: 7664-93-9 EINECS: 231-639-5	sulphuric acid	 C; R 35	55.5%
CAS: 105-60-2 EINECS: 203-313-2	1,6-hexanolactam	 Xn,  Xi; R 20/22-36/37/38	41.0%
CAS: 7446-11-9 EINECS: 231-197-3	sulphur trioxide	 T,  C; R 23/24/25-34	3.5%

- **Additional information:** For the wording of the listed risk phrases refer to section 16.

4 First aid measures

- **General information:**
 Immediately remove any clothing soiled by the product.
 Symptoms of poisoning may even occur after several hours; therefore medical observation for at least 48 hours after the accident.

(Contd. on page 2)

Safety Data Sheet
according to 1907/2006/EC, Article 31

Printing date 03.12.2009

Revision: 20.08.2008

Trade name: CAPROLACTAM SULPHATE

- **After inhalation:**
Supply fresh air. If required, provide artificial respiration. Keep patient warm. Consult doctor if symptoms persist.
In case of unconsciousness place patient stably in side position for transportation.
- **After skin contact:** Immediately wash with water and soap and rinse thoroughly.
- **After eye contact:**
Rinse opened eye for several minutes under running water. Then consult a doctor.
- **After swallowing:**
Call for a doctor immediately.
Drink plenty of water and provide fresh air. Call for a doctor immediately.

5 Fire-fighting measures

- **Suitable extinguishing agents:** Use fire extinguishing methods suitable to surrounding conditions.
- **Protective equipment:** Wear self-contained respiratory protective device.

6 Accidental release measures

- **Person-related safety precautions:** Wear protective equipment. Keep unprotected persons away.
- **Measures for environmental protection:** Do not allow to enter sewers/ surface or ground water.
- **Measures for cleaning/collecting:**
Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).
Use neutralizing agent.
Dispose contaminated material as waste according to item 13.
Ensure adequate ventilation.

7 Handling and storage

- **Handling:**
- **Information for safe handling:**
Ensure good ventilation/exhaustion at the workplace.
Prevent formation of aerosols.
- **Information about fire - and explosion protection:** No special measures required.
- **Storage:**
- **Requirements to be met by storerooms and receptacles:**
Store in cool, dry conditions in well sealed receptacles.
- **Information about storage in one common storage facility:** Not required.
- **Further information about storage conditions:** Keep container tightly sealed.

8 Exposure controls/personal protection

- **Additional information about design of technical facilities:** No further data; see item 7.
- **Ingredients with limit values that require monitoring at the workplace:**
The product does not contain any relevant quantities of materials with critical values that have to be monitored at the workplace.
- **Additional information:** The lists valid during the making were used as basis.
- **Personal protective equipment:**
- **General protective and hygienic measures:**
Keep away from foodstuffs, beverages and feed.

(Contd. on page 3)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 03.12.2009

Revision: 20.08.2008

Trade name: CAPROLACTAM SULPHATE

Immediately remove all soiled and contaminated clothing
 Wash hands before breaks and at the end of work.
 Avoid contact with the eyes and skin.

· **Respiratory protection:**

In case of brief exposure or low pollution use respiratory filter device. In case of intensive or longer exposure use self-contained respiratory protective device.

· **Protection of hands:**



Protective gloves

The glove material has to be impermeable and resistant to the product/ the substance/ the preparation.

Due to missing tests no recommendation to the glove material can be given for the product/ the preparation/ the chemical mixture.

Selection of the glove material on consideration of the penetration times, rates of diffusion and the degradation

· **Material of gloves**

The selection of the suitable gloves does not only depend on the material, but also on further marks of quality and varies from manufacturer to manufacturer. As the product is a preparation of several substances, the resistance of the glove material can not be calculated in advance and has therefore to be checked prior to the application.

· **Penetration time of glove material**

The exact break through time has to be found out by the manufacturer of the protective gloves and has to be observed.

· **Eye protection:**



Tightly sealed goggles

· **Body protection:** Acid resistant protective clothing

9 Physical and chemical properties

· **General Information**

Form:	Fluid
Colour:	Light brown
Odour:	Characteristic

· **Change in condition**

Melting point/Melting range: Undetermined.
Boiling point/Boiling range: 270°C

· **Flash point:** 139°C

· **Ignition temperature** 375°C

· **Self-igniting:** 228 °C

· **Danger of explosion:** Product does not present an explosion hazard.

· **Explosion limits:**

Lower:	1.5 Vol %
Upper:	8.0 Vol %

(Contd. on page 4)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 03.12.2009

Revision: 20.08.2008

Trade name: CAPROLACTAM SULPHATE

· Vapour pressure at 20°C:	0 hPa
· Density at 20°C:	1.5066 g/cm ³
· Solubility in / Miscibility with water:	Not miscible or difficult to mix.
· Viscosity: Dynamic at 90°C:	105 cP
· Solvent content: Organic solvents:	0.0 %
· Solids content:	55.5 %

10 Stability and reactivity

- **Thermal decomposition / conditions to be avoided:**
No decomposition if used according to specifications.
- **Dangerous reactions** No dangerous reactions known.
- **Dangerous decomposition products:** No dangerous decomposition products known.

11 Toxicological information

- **Acute toxicity:**

- **LD/LC50 values relevant for classification:**

105-60-2 1,6-hexanolactam

Oral	LD50	1000 mg/kg (con) 1155-1650 mg/kg (rat)
Dermal	LD50	1000 mg/kg (rabbit)
Inhalative	LC50/4 h	8.16 mg/l (rat)

- **Primary irritant effect:**
- **on the skin:** Strong caustic effect on skin and mucous membranes.
- **on the eye:** Strong caustic effect.
- **Sensitization:** No sensitizing effects known.
- **Additional toxicological information:**
The product shows the following dangers according to the calculation method of the General EU Classification Guidelines for Preparations as issued in the latest version:
Harmful
Corrosive
Irritant
Swallowing will lead to a strong caustic effect on mouth and throat and to the danger of perforation of esophagus and stomach.

12 Ecological information

- **General notes:**

Water hazard class 1 (German Regulation) (Self-assessment): slightly hazardous for water
Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

(Contd. on page 5)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 03.12.2009

Revision: 20.08.2008

Trade name: CAPROLACTAM SULPHATE

Must not reach sewage water or drainage ditch undiluted or unneutralized.

13 Disposal considerations

- **Product:**
- **Recommendation**
Must not be disposed together with household garbage. Do not allow product to reach sewage system.
- **Uncleaned packaging:**
- **Recommendation:** Disposal must be made according to official regulations.

14 Transport information

· Land transport ADR/RID (cross-border)



- **ADR/RID class:** 8 Corrosive substances.
- **Danger code (Kemler):** 80
- **UN-Number:** 1760
- **Packaging group:** II
- **Hazard label:** 8
- **Description of goods:** 1760 CORROSIVE LIQUID, N.O.S. (SULPHURIC ACID, SULPHUR TRIOXIDE, STABILIZED)

· Maritime transport IMDG:



- **IMDG Class:** 8
- **UN Number:** 1760
- **Label** 8
- **Packaging group:** II
- **EMS Number:** F-A,S-B
- **Marine pollutant:** No
- **Proper shipping name:** CORROSIVE LIQUID, N.O.S. (SULPHURIC ACID, SULPHUR TRIOXIDE, STABILIZED)

· Air transport ICAO-TI and IATA-DGR:



- **ICAO/IATA Class:** 8
- **UN/ID Number:** 1760
- **Label** 8
- **Packaging group:** II

(Contd. on page 6)

Safety Data Sheet

according to 1907/2006/EC, Article 31

Printing date 03.12.2009

Revision: 20.08.2008

Trade name: CAPROLACTAM SULPHATE

· **Proper shipping name:** CORROSIVE LIQUID, N.O.S. (SULPHURIC ACID, SULPHUR TRIOXIDE, STABILIZED)

15 Regulatory information

· **Labelling according to EU guidelines:**

The product has been classified and marked in accordance with EU Directives / Ordinance on Hazardous Materials.

· **Code letter and hazard designation of product:**



C Corrosive

· **Hazard-determining components of labelling:**

1,6-hexanolactam
sulphur trioxide
sulphuric acid

· **Risk phrases:**

20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
35 Causes severe burns.
37 Irritating to respiratory system.

· **Safety phrases:**

1/2 Keep locked up and out of the reach of children.
26 In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
36/37/39 Wear suitable protective clothing, gloves and eye/face protection.
45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
56 Dispose of this material and its container to hazardous or special waste collection point.

16 Other information

This information is based on our present knowledge. However, this shall not constitute a guarantee for any specific product features and shall not establish a legally valid contractual relationship.

· **Relevant R-phrases**

20/22 Harmful by inhalation and if swallowed.
23/24/25 Toxic by inhalation, in contact with skin and if swallowed.
34 Causes burns.
35 Causes severe burns.
36/37/38 Irritating to eyes, respiratory system and skin.

· **Department issuing MSDS:** Corporate Social Responsibility-Product liability

· **Contact:** E-mail: sds.ube.eu@ube.es