

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**6-Caprolactam, 50 g**

Print date: 14.04.2015

Product code: 9991221

Page 1 of 8

**SECTION 1: Identification of the substance/mixture and of the company/undertaking****1.1. Product identifier**

6-Caprolactam, 50 g

CAS No: 105-60-2  
Index No: 613-069-00-2  
EC No: 203-313-2

**1.2. Relevant identified uses of the substance or mixture and uses advised against****Use of the substance/mixture**

Laboratory chemicals

**1.3. Details of the supplier of the safety data sheet****Seller**

Company name: CONATEX-DIDACTIC Lehrmittel GmbH  
Street: Im Forstgarten 1  
Place: D-66459 Kirkel  
Internet: www.conatex.com

**Supplier**

Company name: Carbolution Chemicals GmbH  
Street: Im Stadtwald, Gebäude A1.2  
Place: D-66123 Saarbrücken  
Contact person: Dr. Michael Bauer Telephone: +49 (0)681 302-71232  
e-mail: michael.bauer@carbolution-chemicals.de  
Internet: www.carbolution-chemicals.de

**1.4. Emergency telephone number:** +49 (0)681 302-71232**SECTION 2: Hazards identification****2.1. Classification of the substance or mixture****Classification according to Directive 67/548/EEC or 1999/45/EC**

Indications of danger: Xn - Harmful, Xi - Irritant  
R phrases:  
Harmful by inhalation and if swallowed.  
Irritating to eyes, respiratory system and skin.

**Classification according to Regulation (EC) No. 1272/2008 [CLP]**

Hazard categories:  
Acute toxicity: Acute Tox. 4  
Acute toxicity: Acute Tox. 4  
Serious eye damage/eye irritation: Eye Irrit. 2  
Specific target organ toxicity - single exposure: STOT SE 3  
Skin corrosion/irritation: Skin Irrit. 2  
Hazard Statements:  
Harmful if inhaled.  
Harmful if swallowed.  
Causes serious eye irritation.  
May cause respiratory irritation.  
Causes skin irritation.

**2.2. Label elements**

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 6-Caprolactam, 50 g

Print date: 14.04.2015

Product code: 9991221

Page 2 of 8

#### Hazardous components which must be listed on the label

epsilon-caprolactam

Signal word:

Warning

Pictograms:

GHS07



#### Hazard statements

H302+H332 Harmful if swallowed or if inhaled.  
 H315 Causes skin irritation.  
 H319 Causes serious eye irritation.  
 H335 May cause respiratory irritation.

#### Precautionary statements

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.  
 P305+P351+P338 IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.

## SECTION 3: Composition/information on ingredients

### 3.1. Substances

Sum formula: C<sub>6</sub>H<sub>11</sub>NO  
 Molecular weight: 113,16

#### Hazardous components

EC No	Chemical name	Quantity
CAS No	Classification according to Directive 67/548/EEC	
Index No	Classification according to Regulation (EC) No. 1272/2008 [CLP]	
203-313-2	epsilon-caprolactam	100 %
105-60-2	Xn - Harmful, Xi - Irritant R20/22-36/37/38	
613-069-00-2	Acute Tox. 4, Acute Tox. 4, Eye Irrit. 2, STOT SE 3, Skin Irrit. 2; H332 H302 H319 H335 H315	

Full text of R-, H- and EUH-phrases: see section 16.

## SECTION 4: First aid measures

### 4.1. Description of first aid measures

#### General information

In case of accident or unwellness, seek medical advice immediately (show directions for use or safety data sheet if possible).

#### After inhalation

Provide fresh air. When in doubt or if symptoms are observed, get medical advice.

#### After contact with skin

After contact with skin, wash immediately with polyethylene glycol, followed by plenty of water. Take off immediately all contaminated clothing and wash it before reuse. If skin irritation occurs: Get medical advice/attention.

#### After contact with eyes

After contact with the eyes, rinse with water with the eyelids open for a sufficient length of time, then consult an ophthalmologist immediately.

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 6-Caprolactam, 50 g

Print date: 14.04.2015

Product code: 9991221

Page 3 of 8

#### After ingestion

Rinse mouth immediately and drink plenty of water. Medical treatment necessary.

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

No data available

### SECTION 5: Firefighting measures

#### 5.1. Extinguishing media

##### Suitable extinguishing media

Co-ordinate fire-fighting measures to the fire surroundings.

#### 5.2. Special hazards arising from the substance or mixture

The product itself does not burn.

#### 5.3. Advice for firefighters

Wear a self-contained breathing apparatus and chemical protective clothing. Full protection suit.

#### Additional information

Suppress gases/vapours/mists with water spray jet. Collect contaminated fire extinguishing water separately. Do not allow entering drains or surface water.

### SECTION 6: Accidental release measures

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

Provide adequate ventilation. Avoid generation of dust. Do not breathe dust. Avoid contact with skin, eyes and clothes. Use personal protection equipment.

#### 6.2. Environmental precautions

Do not allow to enter into surface water or drains.

#### 6.3. Methods and material for containment and cleaning up

Take up mechanically. Treat the recovered material as prescribed in the section on waste disposal.

### SECTION 7: Handling and storage

#### 7.1. Precautions for safe handling

##### Advice on safe handling

If handled uncovered, arrangements with local exhaust ventilation have to be used. Avoid generation of dust. Do not breathe dust.

##### Advice on protection against fire and explosion

Only use the material in places where open light, fire and other flammable sources can be kept away.

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

##### Requirements for storage rooms and vessels

Keep container tightly closed.

### SECTION 8: Exposure controls/personal protection

#### 8.1. Control parameters

##### Exposure limits (EH40)

CAS No	Substance	ppm	mg/m <sup>3</sup>	fibres/ml	Category	Origin
105-60-2	1,6-Hexanolactam, dust and vapour	-	10		TWA (8 h)	WEL
		-	20		STEL (15 min)	WEL

#### 8.2. Exposure controls

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 6-Caprolactam, 50 g

Print date: 14.04.2015

Product code: 9991221

Page 4 of 8

#### Appropriate engineering controls

If handled uncovered, arrangements with local exhaust ventilation have to be used. Do not breathe dust.

#### Protective and hygiene measures

Remove contaminated, saturated clothing immediately. Draw up and observe skin protection programme. Wash hands and face before breaks and after work and take a shower if necessary. When using do not eat or drink.

#### Eye/face protection

Eye protection: Tightly sealed safety glasses. German Industry Norms (DIN) / European Norms (EN): DIN EN 166

#### Hand protection

Hand protection: Single-use gloves. Before using check leak tightness / impermeability. Use gloves only once. German Industry Norms (DIN) / European Norms (EN): DIN EN 374

#### Skin protection

Body protection: Lab apron. Only wear fitting, comfortable and clean protective clothing.

#### Respiratory protection

With correct and proper use, and under normal conditions, breathing protection is not required. If technical exhaust or ventilation measures are not possible or insufficient, respiratory protection must be worn. Suitable respiratory protective equipment: particulates filter device (DIN EN 143).

## SECTION 9: Physical and chemical properties

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

Physical state:	solid
Colour:	colourless
Odour:	No data available

#### Test method

pH-Value: No data available

#### Changes in the physical state

Melting point:	68 °C
Initial boiling point and boiling range:	136 °C 10 Torr
Sublimation point:	No data available
Softening point:	No data available
Flash point:	No data available

#### Flammability

Solid:	No data available
Gas:	No data available
Lower explosion limits:	No data available
Upper explosion limits:	No data available
Ignition temperature:	No data available

#### Auto-ignition temperature

Solid:	No data available
Gas:	No data available
Vapour pressure:	No data available
Vapour pressure:	No data available
Density:	No data available
Water solubility:	No data available

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 6-Caprolactam, 50 g

Print date: 14.04.2015

Product code: 9991221

Page 5 of 8

Partition coefficient:	No data available
Viscosity / dynamic:	No data available
Viscosity / kinematic:	No data available
Flow time:	No data available
Vapour density:	No data available
Evaporation rate:	No data available
Solvent separation test:	No data available
Solvent content:	No data available

#### **9.2. Other information**

Solid content:	No data available
----------------	-------------------

### SECTION 10: Stability and reactivity

#### **10.1. Reactivity**

No data available

#### **10.3. Possibility of hazardous reactions**

No data available

#### **10.4. Conditions to avoid**

No data available

#### **10.5. Incompatible materials**

Oxidizing agents, strong.

#### **10.6. Hazardous decomposition products**

No data available

### SECTION 11: Toxicological information

#### **11.1. Information on toxicological effects**

##### **Toxicokinetics, metabolism and distribution**

Toxicological data are not available.

##### **Acute toxicity**

Acute inhalation toxicity. Acute oral toxicity.

CAS No	Chemical name	Exposure routes	Method	Dose	Species	Source
105-60-2	epsilon-caprolactam	oral	LD50	1210 mg/kg	Ratte	
		inhalative vapour	ATE	11 mg/l		
		inhalative aerosol	ATE	1,5 mg/l		

##### **Irritation and corrosivity**

Causes eye irritation. Irritation to respiratory tract, Lung irritation, Cough, Dyspnoea. Causes skin irritation.

##### **Sensitising effects**

No data available

##### **Severe effects after repeated or prolonged exposure**

No data available

##### **Carcinogenic/mutagenic/toxic effects for reproduction**

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 6-Caprolactam, 50 g

Print date: 14.04.2015

Product code: 9991221

Page 6 of 8

Due to missing data no statement can be made whether the substance fulfills the criteria of CMR categories 1 or 2. Practical experiences do not give any evidence for CMR activity of categories 1 or 2.

#### Specific effects in experiment on an animal

No data available

#### Additional information on tests

This mixture is classified as hazardous according to 1999/45/EC.

#### Practical experience

#### Observations relevant to classification

No data available

### SECTION 12: Ecological information

#### 12.1. Toxicity

No data available

CAS No	Chemical name					
	Aquatic toxicity	Method	Dose	[h]   [d]	Species	Source
105-60-2	epsilon-caprolactam					
	Acute fish toxicity	LC50 mg/l	500 - 1000	96 h	Onchorhynchus mykiss	
	Acute algae toxicity	ErC50	4550 mg/l	72 h	Algen	

#### 12.2. Persistence and degradability

No data available

#### 12.3. Bioaccumulative potential

No data available

#### Partition coefficient n-octanol/water

CAS No	Chemical name	Log Pow
105-60-2	epsilon-caprolactam	-0,19

#### 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

#### Further information

According to the criteria of the European classification and labelling system, the substance/the product has not to be labelled as "dangerous for the environment".

### SECTION 13: Disposal considerations

#### 13.1. Waste treatment methods

##### Advice on disposal

Do not allow to enter into surface water or drains. Dispose of waste according to applicable legislation.

##### Waste disposal number of waste from residues/unused products

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals  
Classified as hazardous waste.

##### Waste disposal number of used product

## Safety Data Sheet

according to Regulation (EC) No 1907/2006

### 6-Caprolactam, 50 g

Print date: 14.04.2015

Product code: 9991221

Page 7 of 8

160506 WASTES NOT OTHERWISE SPECIFIED IN THE LIST; gases in pressure containers and discarded chemicals; laboratory chemicals, consisting of or containing dangerous substances, including mixtures of laboratory chemicals  
Classified as hazardous waste.

#### Waste disposal number of contaminated packaging

150110 WASTE PACKAGING; ABSORBENTS, WIPING CLOTHS, FILTER MATERIALS AND PROTECTIVE CLOTHING NOT OTHERWISE SPECIFIED; packaging (including separately collected municipal packaging waste); packaging containing residues of or contaminated by dangerous substances  
Classified as hazardous waste.

#### Contaminated packaging

Wash with plenty of water. Completely emptied packages can be recycled.

### SECTION 14: Transport information

#### Land transport (ADR/RID)

**14.1. UN number:** UN 2811  
**14.2. UN proper shipping name:** TOXIC SOLID, ORGANIC, N.O.S.  
**14.3. Transport hazard class(es):** 6.1  
**14.4. Packing group:** II  
Hazard label: 6.1  
Classification code: T2  
Special Provisions: 274 614  
Limited quantity: 500 g  
Transport category: 2  
Hazard No: 60  
Tunnel restriction code: D/E

#### Other applicable information (land transport)

E4

#### Inland waterways transport (ADN)

**14.1. UN number:** UN 2811  
**14.2. UN proper shipping name:** TOXIC SOLID, ORGANIC, N.O.S.  
**14.3. Transport hazard class(es):** 6.1  
**14.4. Packing group:** II  
Hazard label: 6.1  
Classification code: T2  
Special Provisions: 274 614 802  
Limited quantity: 500 g

#### Other applicable information (inland waterways transport)

E4

#### Marine transport (IMDG)

**14.1. UN number:** UN 2811  
**14.2. UN proper shipping name:** TOXIC SOLID, ORGANIC, N.O.S.  
**14.3. Transport hazard class(es):** 6.1  
**14.4. Packing group:** II  
Hazard label: 6.1  
Special Provisions: 274  
Limited quantity: 500 g  
EmS: F-A, S-A

**Safety Data Sheet**

according to Regulation (EC) No 1907/2006

**6-Caprolactam, 50 g**

Print date: 14.04.2015

Product code: 9991221

Page 8 of 8

**Other applicable information (marine transport)**

E4

**Air transport (ICAO)**

<b>14.1. UN number:</b>	UN 2811
<b>14.2. UN proper shipping name:</b>	TOXIC SOLID, ORGANIC, N.O.S.
<b>14.3. Transport hazard class(es):</b>	6.1
<b>14.4. Packing group:</b>	II
Hazard label:	6.1
Special Provisions:	A3 A5
Limited quantity Passenger:	1 kg
IATA-packing instructions - Passenger:	669
IATA-max. quantity - Passenger:	25 kg
IATA-packing instructions - Cargo:	676
IATA-max. quantity - Cargo:	100 kg

**Other applicable information (air transport)**

E4

: Y644

**14.5. Environmental hazards**

ENVIRONMENTALLY HAZARDOUS: no

**SECTION 15: Regulatory information****15.1. Safety, health and environmental regulations/legislation specific for the substance or mixture****EU regulatory information****Additional information**

Safety Data Sheet according to Regulation (EC) No. 1907/2006 (REACH)

**National regulatory information**

Water contaminating class (D): 1 - slightly water contaminating

**SECTION 16: Other information****Relevant R-phrases (Number and full text)**

- 20/22 Harmful by inhalation and if swallowed.  
36/37/38 Irritating to eyes, respiratory system and skin.

**Relevant H- and EUH-phrases (Number and full text)**

- H302 Harmful if swallowed.  
H302+H332 Harmful if swallowed or if inhaled.  
H315 Causes skin irritation.  
H319 Causes serious eye irritation.  
H332 Harmful if inhaled.  
H335 May cause respiratory irritation.