

SAFETY DATA SHEET			
Acc. to Regulation (EC) No.	1907/2006 and Regulation (E	U) No. 2020/878 for	
CAPROLACTAM		DOMO Caproleuna GmbH Bau 3101 – Am Haupttor	
Prepared	2010-11-01	D-06237 Leuna	
Updated	2022-12-16	Rev. 8	Page 1 of 20

SECTION 1: *Identification of the substance/mixture and of the company/undertaking*

1.1 Product identifier

Trade name: ε-Caprolactam

Other names: lactam, ε-aminocaproic lactam, azepan-2-one,

6-aminohexanoic acid cyclic lactam, 6-hexanoic lactam,

aminocaproic acid lactam

EINECS No.: 203-313-2

REACH Registration No.: 01-2119457029-36-xxxx

Form: no nanoform

UFI Code: not applicable; product is a substance

1.2 Relevant identified uses of the substance or mixture and uses advised against

Identified uses

- Intermediate product for organic syntheses
- Monomer for production of polyamide
- Monomer for production of resins
- Monomer for production of thermally curable resins
- Softening agent for polyamide
- Use for leather treatment and impregnation as well as component of colorants and coating agents

Uses advised against

Not required

1.3 Details of the supplier of the safety data sheet

Manufacturer/supplier: DOMO Caproleuna GmbH

Bau 3101 - Am Haupttor

D-06237 Leuna

Tel. + 49 34 61 43-22 42 Fax + 49 34 61 43-22 20 E-mail sds@domo.org



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1.4 Emergency telephone number

Europe	+44 1235 239670	[Carechem 24]
Middle East/Africa	+44 1235 239671	[Carechem 24]
North/South America	+1 215 207 0061	[Carechem 24]
East/South East Asia	+65 3158 1195	[Carechem 24]

^{*}country specific emergency telephone numbers in section 16

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture (CLP)

Hazard classes/categories	Hazard- statement	Classification procedure
		•
Acute oral toxicity, category 4	H302	test result
Skin corrosion/irritation, category 2	H315	test result
Causes serious eye irritation, category 2	H319	test result
Acute inhalation toxicity, category 4	H332	test result
Specific target organ systemic toxicity		
(single exposure), category 3		
Respiratory irritation	H335	test result

2.2 Label elements

Labeling (CLP)

Pictogram:



Signal word: **WARNING**

Hazard statements

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

Safety precautions

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.



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P264	Wash hands thoroughly after handling.
P270	Do not eat, drink or smoke when using this product.
P271	Use only outdoors or in a well-ventilated area.
P280	Wear protective gloves/protective clothing/eye protection/face protection.
P301+P312	IF SWALLOWED: Call a POISON CENTER or doctor/physician if you feel unwell.
P302+P352	IF ON SKIN: Wash with plenty of soap and water.
P304+P340	IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.
P305+P351+P338	IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do.
P312	Call a POISON CENTER or doctor/physician if you feel unwell.
P330	Rinse mouth.
P332+P313	If skin irritation occurs: Get medical advice/attention.
P337+P313	If eye irritation persists: Get medical advice/attention.
P362	Take off contaminated clothing and wash before reuse.
P403+P233	Store in a well-ventilated place. Keep container tightly closed.
P405	Store locked up.
P501	Dispose of contents/container acc. to Item 13.

2.3 Other hazards

PBT/vPvB Assessment

The product does not fulfil the PBT (persistent, bioaccumulative, toxic) or vPvB (very persistent, very bioaccumulative) criteria.

Endocrine disruptor information

This product does not contain any known or suspected endocrine disruptors.

SECTION 3: Composition/Information on Ingredients

3.1 Substances

Chemical characterisation

Caprolactam

CAS No.: 105-60-2 EC No. (EINECS): 203-313-2 Harmonized System Code: 29337100 Index No.: 613-069-00-2

REACH Registration No.: 01-2119457029-36-xxxx

Formula: $C_6H_{11}NO$ Molecular Mass: 113,12 g/mol

Hazardous ingredients: None



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SECTION 4: First-aid measures

4.1 Description of first-aid measures

General Notes

Remove injured person from the danger zone to fresh air. If breathing and in case of vomiting or impending unconsciousness put the injured in the recovery position. Get medical attention. Remove contaminated clothing immediately.

The temperature of molten caprolactam is at least 70 °C.

Following inhalation

Remove victim to fresh air. In case of respiratory arrest immediately employ artificial respiration and get medical attention. If the injured is unconscious, lay and transport him/her in recovery position.

Following skin contact

Immediately remove contaminated clothing. Wash affected skin with plenty of water and soap. Cool skin burns caused by liquid product immediately with cold water, get medical attention. Do not peel off solid product from the skin, but remove using water. If irritation persists, get medical attention.

Following eye contact

Remove contact lenses, if present. Immediately wash for at least 15 minutes under running water with the lids wide open. If available, use Previn solution. Consult a physician.

Following ingestion

Rinse the mouth. Drink plenty of water. Avoid vomiting due to danger of aspiration. Get medical advice immediately.

4.2 Most important symptoms and effects, both acute and delayed

Symptoms

narcotising effect

headache, dizziness and nausea

Risks

Possible susceptibility to eczema.

4.3 Indication of any immediate medical attention and special treatment needed

Show the physician the label of the original product package. Indicate, that liquid caprolactam causes burns. Ensure self-protection of first aid personnel.

Treatment

Treat according to symptoms



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SECTION 5: Firefighting measures

5.1 Extinguishing media

Suitable extinguishing media Water, CO₂, foam, powder

Extinguishing media which must not be used for safety reasons None

5.2 Special hazards arising from the substance or mixture

Vapours can form explosive mixtures with air.

In case of fire, development of hazardous fire gases or vapours possible.

In the event of fire the following substances may develop: nitrogen oxides, hydrogen cyanide. Static charging of the flakes alone or between flakes and liquid may cause ignition of an explosive gas mixture.

Product dust accumulating at the workplace may further increase the explosion risk and intensity.

5.3 Advice for firefighters

Staying in the danger zone is only permitted with self-contained breathing apparatus (with filter type A) and flame retardant full protective clothing.

5.4 Additional information

Solid caprolactam is flame resistant. Extinguishable using water.

Cool affected containers by means of water fog.

Prevent contaminated firefighting water from running off into waters or the ground water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Avoid skin contact and inhalation of vapours. Leakages of molten caprolactam involve danger of slipping; therefore isolate place of leakage. Seal the leak as good as possible. Avoid dust formation. Do not inhale dusts. Provide ample fresh air in enclosed rooms.

6.2 Environmental precautions

Prevent the substance or contaminated firefighting water from running off into the soil, waterways or ground water.



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6.3 Methods and material for containment and cleaning up

Isolate molten caprolactam leakage, leave to solidify and take up mechanically. Use solvent-resistant containers (steel, glass). Flush away residual product with plenty of water. Waters containing caprolactam shall be duly disposed of via biological sewage treatment plants. Caprolactam is biologically degradable.

6.4 Reference to other sections

Not applicable

SECTION 7: Handling and storage

7.1 Precautions for safe handling

Protective measures

When handling the substance, eye and body protection must be worn. When vapours occur, wear breathing apparatus with filter A.

Technical measures

Observe explosion and fire protection regulations. All equipment made of stainless steel. Use enclosed pumps or pumps with high-grade slide-ring seal for product transfer. All components in contact with the product are to be heated to 85 to 95 °C.

Take precautions against electro-static charging. Use solvent-resistant sealing material, such as Teflon and/or Sigraflex. Have fire extinguisher ready.

Environmental protection measures

Install collecting devices under production and loading stations. Collect material leakages by means of chemical binding agents or dispose of properly after solidification.

Specific requirements or handling procedures

Handle in accordance with good industrial hygiene and safety practice.

Hints concerning fire and explosion prevention

Caprolactam sublimate is easily flammable in combination with mineral wool.

Vapours can form explosive mixtures with air.

All electrical installations must comply with the necessary degree of protection in accordance with the classification of the hazardous area.

There must be no sources of ignition within the protected zone.

Additional information

Temperature class: T2 (ignition temperature >300 °C).

7.2 Conditions for safe storage, including any incompatibilities

<u>Technical measures and storage conditions</u>

This is a hygroscopic product. Avoid contact with moisture contained in the air. Take precautions against electro-static charging, protect from overheating.



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Store the liquid product in heatable, heat-insulated containers at a temperature of 80 to 90 °C under inert gas (e. g. nitrogen with a maximum O₂ content of 50 ppm.)

Packaging material

Heatable and heat-insulated stainless steel containers. Small amounts in PE or Duran bottles. Steel sheet and glass are only possible for minimum quantities.

Suitable material for containers: Stainless steel, aluminium

Storeroom and container requirements

Storage space and collection rooms (with caprolactam-resistant coating) and connected pump rooms must have adequate ventilation. Keep containers closed and under inert gas (nitrogen). Suitable material for containers: Stainless steel 1.4301, 1.4541 (V2), aluminium, stainless steel 1.4401, 1.4571 (V4)

Keep under nitrogen (O_2 content < 5 ppm). If possible, use opaque containers.

Advice for storage together with other products

Caprolactam must not be stored together with strong oxidizing agents, such as acids or bases. Regarding the fire and explosion hazard posed by the product, the legal requirements for handling combustible liquids shall be observed during storage.

<u>Further information on storage conditions</u>

Storage temperature 80 to 90 °C

Storage stability

If stored under the conditions stated above, the product quality is stable up to 6 months.

Maximum duration of safe storage

Max. storage duration: 6 months.

7.3 Specific end uses

For industrial use

No.	Usage description
1	Production/import of caprolactam
2	Distribution of caprolactam
3	Industrial formulation of solid substances
4	Formulation of liquid substances (industrial)
5	Use as intermediate
6	Use as monomer for the production of polyamide, polymers and thermoplastics
7	Use as monomer for resins
8	Use as monomer for thermally curing resins
9	Use as softening agent for polyamides
10	Use as leather tanning agent and for leather finishing, impregnating, coating and dyeing



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For professional use

No.	Usage description
11	Use as laboratory chemical
4	Formulation of liquid substances (professional)

For consumer use

No.	Usage description
12	Use in coatings and dyeing agents (consumers)

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Workplace exposure limits

2 -	The state of the s		Re- commended	Max. limit	C	Damank
(country of origin)	long term	short term	monitoring procedures	Max. IIIIII	Source	Remark
AGW (DE)	5 E [mg/m ³]	=2=		Cat. I	TRGS 900 ¹⁾	DFG, Y, 11

DNEL/DMEL and PNEC parameters

DNEL/DMEL					
Workers industry/ professional	Consumer		Final point	Route of exposure	Exposure frequency
Value	Value	Correcte d value*)			
not as int.	not as int.			oral	short term (acute)
not as int.	not as int.				long term (repeated)
not as int.	not as int.			dermal	short term (acute)
not as int.	not as int.				long term (repeated)
10 mg/m ³	5 mg/m ³	10 mg/ m ³	Respiratory irritation	Inhala- tion	short term (acute)
5 mg/m ³	2.5 mg/m ³	5 mg/m ³			long term (repeated)

^{*)} The corrected DNEL/DMEL value results from multiplying DNEL/DMEL by the "safety factor" 2.

not as int. = contrary to intended purpose



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Route of exposure	PNEC
Marine water	0.2 mg/l
Water – sporadic release	1 mg/l
Fresh water	2 mg/l
Sediment (freshwater)	10.6 mg/kg
Soil	2.55 mg/kg
Sewage plant	1737 mg/l

8.2 Exposure controls

Suitable technical control devices: See exposure scenarios in Annex.

Personal protective equipment

General protection and hygiene measures

Preventative skin protection recommended (skin protective ointment), remove contaminated clothing, see also 7. Wash hands and face after working.

Respiratory protection

Ensure adequate ventilation

if vapours/aerosols are present.

Recommended filter type: FFP2.

Hand protection

Chemical resistant protective gloves (EN 374)

Suitable material, also for prolonged direct contact (recommended: protective index 6,

i. e. permeation time as per EN 374 > 480 min.):

Butyl rubber (butyl) – thickness $\geq 0.7 \text{ mm}$

Nitrile rubber (NBR) - thickness 0.4 mm

Eye protection

Wear frame goggles with lateral shields.

Body protection

Depending on the activities being carried out and possible exposure wear clothing that covers or protects the entire body, e. g. apron, protective boots, chemical protective overall (as per DIN EN 465).

Further notes

Select the personal protective equipment depending on the concentration and amount of hazardous substances at the respective working place.



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SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

Appearance

Physical state: liquid (melt)/solid

Colour: colourless melt/white flakes

Odour: faint specific odour

Physical and chemical properties

Melting point: 69.3 °C (ISO 7060) Initial boiling point: 270.8 °C (DIN 53171)

Flammability: not flammable Lower explosion limit: no data available Upper explosion limit: no data available

Flash point: 142 °C (1013 hPa, closed cup method)

Self-ignition temperature:

Thermal decomposition:

pH:

7-8 (DIN 19268)

Kinematic viscosity:

no data available
no data available

Dynamic viscosity: 8.23 mPa*s (30°C, DIN 53015)

Water solubility: 866.89 g/l (22°C)

Partition coefficient n-octanol/water (log Kow): 0.12 (25 °C; OECD 107)

 Vapour pressure:
 0.0013 mbar (20 °C; ASTM E 1194)

 Density:
 1.015 g/cm3 (30 °C; DIN 51757)

Relative density: 1.105 (20°)
Relative vapour density (air): no data available

Particle characteristics: no nanoform (solid state)

9.2 Other information

Easily soluble in ethanol and ether. Tends to sublime.

9.2.1 Information with regard to physical hazard classes

Explosion risk: not explosiv

Oxidizing properties: none

9.2.2 Other safety characteristics

No information available

SECTION 10: Stability and reactivity



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10.1 Reactivity

No dangerous reactions known. If the storage conditions described above are met, there will be no exothermic polymerisation.

10.2 Chemical stability

Caprolactam is a hygroscopic product. No decomposition if used properly.

10.3 Possibility of hazardous reactions

No dangerous reactions known.

10.4 Conditions to avoid

High temperatures and oxygen supply. Oxidation.

10.5 Incomaptible materials

Strong oxidants, lyes and acids.

10.6 Hazardous decomposition products

In case of thermal decomposition release of CO, H_2 , H_2O , HCN and carbon residues.

SECTION 11: Toxicological information

11.1 Information on hazard classes as defined in Regulation (EC) No 1272/2008

Acute toxicity

Toxicity	Effective dose	Species	Method	Remark
oral	LD50 1475 mg/kg bw	Female rat	EU method B.1 (acute toxicity oral)	Experimental determination
by inhalation	LD50 8.16 mg/l air (4 h)	Rat	OECD 403 (acute inhalation toxicity)	Experimental determination
dermal	LC50 > 2000 mg/kg bw	Rat	84/449/EEC	Experimental determination

Specific symptoms

Harmful if inhaled or swallowed. Caprolactam has an activating effect on the central nervous system. In solid state and in high-concentration solution and higher dust concentrations it has



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an irritating effect on the mucous membranes. Dermal sensitization has only been observed in rare cases.

Following ingestion: Trembling, spasms, irregular way of walking, nasal discharge,

increased salivation, reddening of lungs and gastrointestinal tract,

liver enlargement

Following skin contact:

no details available

Following inhalation: Muco

Mucous membrane irritation, shortage of breath, coughing, goose-

pimples, nosebleed, lacrimation

Following contact with eyes:no details available

Practical experience

When the occupational exposure limit (Arbeitsplatzgrenzwert - AGW) is exceeded, nosebleed is observed more frequently.

Skin corrosion/irritation

Irritating to skin.

No reliable animal studies available.

Based on experience in humans: Following skin contact = category 2

Serious eye damage/irritation

Irritating to eyes.

No reliable animal studies available.

Based on experience in humans: Following eye contact = category 2

Respiratory or skin sensitization

No sensitizing effect on skin and respiratory system in animals. Guinea pig maximization test (GPMT): not sensitising.

Germ cell mutagenicity

Based on available data, the classification criteria are not met.

Carcinogenicity

Based on available data, the classification criteria are not met.

Reproductive toxicity

Based on available data, the classification criteria are not met.

STOT SE

STOT SE 3, H335: May cause respiratory irritation.

Based on experience in humans: Following skin contact = category 4

STOT RE

Based on available data, the classification criteria are not met.

Aspiration hazard

Based on available data, the classification criteria are not met.



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11.2 Information on other hazards

11.2.1 Endocrine disrupting properties

No information available. See section 2.3

11.2.2. Other information

Toxicity in case of repeated exposure (sub-acute, sub-chronic, chronic)

Toxicity	Effective dose	Species	Duration of exposure	Specific effect	Affected Organs	Method
Sub- chronic oral	NOAEL: 342 mg/kg bw/d (femal) NOAEL: 29 mg/kg bw/d (male)	Rat	90 d	Reduced feed uptake	Increase of liver weight, Kidney damage	OECD Guideline 408
Sub- chronic by inhalation	NOAEC: 0,245 mg/l	Rat	90 d	Local effect: keratini- sation of larynx	No systemic Toxicity	Literature review

Toxicokinetics, metabolism and distribution

Data on non-human toxicity

Method: animal test/Rat
Dose: 0,18 mg/kg bw (24h)

Administration: oral

Results:

Absorption: digestive tractDistribution: blood stream

- Metabolism: not identified metabolites

- Excretion/elimination: 77,6% urine, 3,5% excrement, 1,5% respiration

Data on human toxicity
No data avaliable

SECTION 12: Ecological information

12.1 Toxicity

Acute ecotoxicity



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Aquatic toxicity	Species	Effective dose	Exposure time	Method
Fish toxicity	Oryzias latipes	LC50: > 100 mg/l	96 h	OECD 203
Daphnia toxicity	Daphnia magna	EC50: > 1000 mg/l	48 h	OECD 202
Algae toxicity	Selenastrum capricornutum	EC50: > 1000 mg/l	72 h	OECD 201

Long term ecotoxicity

Aquatic toxicity	Species	Effective dose	Exposure time	Method
Fish toxicity	No data available			
Daphnia toxicity	Daphnia magna	NOEC: 100 mg/l	21 d	OECD 211
Algae toxicity	Pseudokirchneriella subcapitata	NOEC: 1000 mg/l	72 h	OECD 201

12.2 Persistence and degradability

<u>Bio-degradability and elimination (H2O)</u> Easily biodegradable (acc. to OECD criteria)

	Degrad- ation rate	Time	Method	Remark
Water	> 82 %	14 d	OECD 301 C	Experimental determination

Good biological degradability. If properly discharged into adapted sewage treatment plants, no disturbances in the degradability of activated sludge are expected.

12.3 Bioaccumulative potential

log Po/w 0.12

Based on the n-octanol/water partition coefficient (log PoW) accumulation in organisms is not to be expected.

Bioconcentration factor (BCF): No data available

12.4 Mobility in soil

Adsorption/Desorption

Transport	Adsorption	Method	Evaluation	Remark
	coefficient/			
	Henry constant			



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Soil	Koc 57.35	PCKOCWIN	No adsorption in	determined by
		v1.66	soil expected.	calculation
Water-air	H: 0.00248 Pa	SRC HENRY	No evaporation	determined by
	m ³ /mol at 25 °C	v3.10 model	from the water	calculation
			surface into the	
			atmosphere.	

12.5 Results of PBT and vPvB assessment

Based on the available data for biotic and abiotic degradation, bioaccumulation and toxicity caprolactam is not categorized as PBT or vPvB.

12.6 Endocrine disrupting properties

No information available. See section 2.3

12.7 Other adverse effects

Prevent from getting into waterways, sewage water or soil (ThSB: 2.605 g/g).

SECTION 13: Disposal considerations

13. Waste treatment methods

Waste key number:

For unused product: 070108*
For uncleaned packaging: 150110*

Disposal

Product and packaging waste must not be disposed of together with domestic waste. Do not allow to enter sewerage systems.

Disposal in accordance with applicable legal regulations observing national and regional regulations. Recycle product residues if possible, otherwise take to hazardous waste incineration.

SECTION 14: Transport information

Product is no hazardous material acc. to ADR/RID/IMDG codes if transported below 100 °C. ICAO/IATA and ADN: Not tested.

Keep dry. Faint specific odour. Keep separate from odour-sensitive goods. Keep separate from food and beverages.

14.1 UN Number or ID Number



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Not applicable

14.2 UN proper shipping name

Not applicable

14.3 Transport hazard classes

Not applicable

14.4 Packaging group

Not applicable

14.5 Environmental hazards

Not applicable

14.6 Special precautions for the user

Not applicable

14.7 Maritime transport in bulk according to IMO instruments

Not applicable

SECTION 15: Regulatory information

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

This safety data sheet is in compliance with article 41 of the Industrial Safety and Health Act of Korea.

National regulations - Germany

Limitations on employment:

Make sure to comply with work restrictions pursuant to the Youth Employment Protection Act and the regulation on legal protection of working mothers (EC 92/85/EEC).

Water hazard class (acc. to AwSV)
WHC 1 = slightly hazardous to water

TA Luft (Technical instructions on air quality control) No. 5.2.5 class I and No. 5.4.4.1d.2



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National Inventories

Country	National Inventories	Status
AU	AICS	The product is a substance.
		The substance is listed in the inventory.
CN	IECSC	The product is a substance.
		The substance is listed in the inventory.
JP	CSCL, ENCS	The product is a substance.
		The substance is listed in the inventory.
CA	DSL	The product is a substance.
		The substance is listed in the inventory.
CA	NDSL	The product is a substance.
		The substance is not listed in the inventory.
KR	KECI	The product is a substance.
		The substance is listed in the inventory. (KE-
		18554)
KR	AREC	The product is a substance.
		The substance is pre-registered
		Registration no.: K1905-008548
NZ	NZIoC	The product is a substance.
		The substance is listed in the inventory.
PH	PICCS	The product is a substance.
		The substance is listed in the inventory.
US	TSCA	The product is a substance.
		The substance is listed in the inventory.
EU	EINECS	The product is a substance.
		The substance is listed in the inventory.
EU	REACH	The product is a substance.
		The substance is registered.
		Registration no.: 01-2119457029-36-xxxx

<u>Legend</u>			
AICS	Australian Inventory of Chemical Substances		
IECSC	Inventory of Existing Chemical Substances		
CSCL	Chemical Substance Control Law		
ENCS	Existing Notified Chemical Substances		
DSL	Domestic Substances List		
NDSL	Non-Domestic Substances List		
KECI	Korean Existing Chemicals Inventory		
AREC	Act on Registration and Evaluation of Chemicals (K-REACH)		
NZIoC	New Zealand Inventory of Chemicals		
PICCS	Philippines Inventory of Chemicals and Chemical Substances		
TSCA	Toxic Substances Control Act, 1976		
EINECS	European Inventory of Existing Commercial Chemical Substances		
REACHRegistration, Evaluation, Authorization and Restriction of Chemicals			

15.2 Chemical safety assessment



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Acc. to Regulation (EC) No. 1907/2006 and Regulation (EU) No. 2020/878 for					
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For this substance a chemical safety assessment has been carried out.

SECTION 16: Other Information

Wording of H and P phrases (number and complete text)

See item 2

Training hints

Leaflet of the BG RCI (Professional Association of Raw Materials and the Chemical Industry):

M004 Irritant substances/corrosive substances M050 Handling of substances hazardous to health

Recommended restrictions for use

See exposure scenarios in Annex 1.

Additional information

This material safety data sheet contains data in accordance with German legislation, e. g. indicated limit values. The recipient alone is responsible for ascertaining the relevant national limit values.

The above details are based on our current state of knowledge. The information is intended to describe our product in terms of safety requirements and thus shall not guarantee certain properties. It does not create a contractual legal relationship.

The contents of the German version of this material safety data sheet are binding. No warranty is given for the correctness of the information in other languages.

Further Information (Sources)

DGUV 113-001, TRGS 727, TRGS 510, TRGS 900, TRGS 903, Römpp's Chemielexikon etc.

Data sources

REACH Registration Dossier and Stoffsicherheitsbericht Acetone. Phenol & Derivate-REACH Consortium, 2010.

Literature

REACH Registration Dossier and Stoffsicherheitsbericht Caprolactam.

Emergency telephone numbers (country specific)

Global/english speaking countries	+44 1865 407333
Country	Emergency telephone number
France	+33 1 72 11 00 03
Germany	+49 89 220 61012



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Germany only Spain			
Spain		0800 000 7801 (toll-free, access from	
Retherlands			
Netherlands			
Turkey			
Norway			
Greece	Turkey		
Portugal			
Denmark	Greece		
Sweden			
Poland +48 22 307 3690 Czech Republic +420 228 882 830 Finland +358 9 7479 0199 Bahrain/Middle East +973 1619 8321 Africa/South Africa +27 21 300 2732 United States +1 866 928 0789 (toll-free) Canada +1 800 579 7421 (toll-free) United States and Canada +1 202 464 2554 Mexico +55 55 5004 8763 Brazil +55 11 3197 5891 Chile +56 2 2582 9336 Colombia +57 1 508 7337 Argentina +54 11 5984 3690 Sri Lanka +65 3158 1195 Taiwan +886 2 8793 3212 Japan 0120 015 230 (toll-free) Indonesia 007 803 011 0293 (toll-free) Malaysia +60 3 6207 4347 Thailand 001 800 120 666 751 (toll-free; access only from Thailand) India +65 3158 1198 000 800 100 7479 (toll-free; access only from India) Pakistan +65 3158 1329 Bangladesh +65 3158 1200 Philippines +63 2 8231 2149 Vietnam	Denmark		
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Vietnam +84 28 4458 2388			
South Korea +82 2 3479 8401	South Korea	+82 2 3479 8401	
Singapore +65 3165 2217	Singapore		
Australia +61 2 8014 4558			
18000 74234 (toll-free; access only		18000 74234 (toll-free; access only	
from Australia)			
New Zealand +64 9 929 1483	New Zealand		





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General revision

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