MATERIAL SAFETY DATA SHEET

CAPTOPRIL

1 Identification of the substance and supplier

Trade name:	Captopril
Usage:	Pharmaceutical active substance.
Therapeutic category:	Antihypertensive.
Manufacturer/Supplier:	Soga Enterprises Asia Group Limited No.1,Huanghai Yi Lu Rizhao,Shandong,276800,China
Telephone:	0086-633-8332928
Fax:	0086-633-8352255
Web:	http://www.sogalw.com
Email:	sales@sogalw.com

2 Composition/Data on components

Chemical name:	1-(3-mercapto-(2S)-methyl-1-oxopropyl-)-L-proline
CAS name	L-Proline, 1-[(2S)-3-mercapto-2-methyl-1-oxopropyl]-
Formula:	$C_9H_{15}NO_3S$
CAS-No:	62571-86-2
EINECS-No:	263-607-1
RTECS No:	UY 0550000

3 Hazard identification

Symbol and danger class: Xi, Irritant

Irritant

The danger symbol is black on orange background.

Risk(R-) phrases:	R 36/37-41-43-64
Safety(S-) phrases:	S 3/7-6-22-26-33-36/37/39
Health hazard:	May cause eye and respiratory tract irritation. Causes serious irritation to eyes. Risk of serious damage to eyes. May cause sensitization by skin contact.
Physical hazard:	Combustible material. Its powder is static chargeable. Danger of dust explosion. The packaged material has no static danger.

Information pertaining to particular dangers for human beings and environment

The material can cross the placenta, avoid exposure during pregnancy. May cause harm to breast-fed babies, avoid exposure during breast-feeding.

4 First aid measures

General information	Remove from exposure. Remove the contaminated clothing. In case of hypersensitivity reaction immediate medical attention needed.
After inhalation:	Remove to fresh air, if breathing difficult, give artificial respiration or oxygen.
After skin contact:	Flush effected area with plenty of water
After eye contact:	Flush with plenty of water for at least 15 minutes. Assure adequate flushing by separating the eyelids with fingers.
After swallowing:	Wash out the mouth with water, carry the victim to a physician.

5 Fire-fighting measures

Fire hazard class:	Dust-air mixture: “B”-Fire and explosion hazard.
Fire and explosion hazard:	Packaged material: “D"-Moderate fire hazard. Combustible material, its powder static chargeable.
Extinguishing media:	The packaged material has no static danger. Water, water spray, carbon dioxide, dry chemical powder,
Protective equipment:	alcohol or polymer foam.
In event of fire:	Self-contained breathing apparatus and protective clothing. Isolate the contaminated extinguishing media and do not let to flow into the storm canal system.

Dangerous decomp./combn. products: SOx, NOx, CO, CO_2.

6 Accidental release measures

Personal precautions:	Respiratory protection needed. Avoid contact with eyes and skin.
Environmental precautions:	Do not al ow the material into the drain system.
Clean-up methods:	Col ect the material careful y and place into suitable, label ed container for disposal. Avoid raising dust. Wash spil site after material pickup is complete. Wear protective equipment.

7 Handling and storage

Handling:	
Safety measures:	Local and general ventilation required. Combustible material, its powder is statical y chargeable. During processing of the material if it forms dust, the formation of static electricity should be considered.
Storage	In wel -closed container under nitrogen atmosphere protected from air and light.

8 Exposure controls and personal protection

Engineering control measures: Closed technology. Local and general ventilation required.
Protection against static electricity.

Occupational exposure standards: Not registered.
General protection hygiene measures: Wear protective clothing.
Remove contaminated clothing and shoes.
Wash before reuse. Wash thoroughly after handling.
Personal protection:
Respiratory protection: Dust filter (FFP3).
Hand protection: Protective gloves.
Eye protection: Chemical safety goggles.

9 Physical chemical properties

Formula: $C_9H_{15}NO_3S$
Molecular weight: 217.31
Form: Crystal ine powder, sensitive to air.
Colour: White to off white.
Odour: Slightly acid-sulfhydril odour.

Melting point/range: 104-110°C
Specific volumetric resistance: > $5x10_{13}$ &m, strong insulator.
Min. ignition energy: 6 mJ, average spark sensibility.
Electrostatic charge build-up tendency:
4.1 10_{-8} As for 1 g material, extremely hazardous.
Charge decreasing time: 45 min.
Relative permittivity: 1.3
Electrostatic description: Strong insulator with extremely hazardous charge build-up tendency.
Charge storage time is up to 45 minutes, high spark sensibility.
The packaged material has no static danger.
Ignition temperature: 590 oC
Ignition limit (lower): Explosive at 10 J spark energy.
Explosion limits:
Upper: Data not available.
Lower: 70 mg/m3
Density (water = 1): d_{4}^{25} = 1,9230
Solubility in
Water: (20oC) 8,3 g/100 ml
Organic solvents: ethyl acetate (20 oC) 4,5 g/100 ml.

10 Stability and reactivity

Stability: Avoid effect of air, light, heat and oxidising effects.
Conditions to avoid: Sensitive to light, heat and moisture.
Keep container tightly closed.
Store under nitrogen atmosphere.
Materials to avoid: Strong bases, acids and oxidising materials.
Hazardous decomposition products: Captopril-disulfide.

Nitrogen and sulphur oxides (in case of fire).

11 Toxicological information

Acute toxicity:
LD50 (oral, rats):
Relevant LD/LC50 values: 4245 mg/kg (RTECS).

Component	Type	Value	Species
Captopril	LD50 (oral)	2500 mg/kg	mice
	LD50 (iv)	554 mg/kg	rats
	LD50 (iv)	663 mg/kg	mice

Primary irritation:
Skin: No irritation.
Eye: Causes irritation.
Sensitisation(skin): Possible hypersensitisation.

Additional information:
Acute overexposure:
Symptoms: Nausea, vomiting, taste loss, rash, dermatitis, hypotension (decreased blood pressure).
Chronic overexposure: No evidence of carcinogenity in animal studies.
Toxic effect to kidneys and erosion in the gastrointestinal tract was observed.
The material can cross the placenta, avoid exposure during pregnancy. May cause harm to breast-fed babies, avoid exposure during breast-feeding.

12 Ecological information

General information: Not known.

13 Disposal considerations

Dispose the solid waste or incinerate in accordance of al state and local regulations.
Dissolve or mix the material with combustible solvent and burn in a chemical incinerator equipped with an afterburner and scrubber.

14 Transport information

Land transport according to ADR/RID: Not a dangerous good.

Sea transport according to IMDG: Not a dangerous good.

Air transport according to ICAO MU/IATA:
Not a dangerous good.

15 Regulatory information

EC label:

Trade name:	Captopril
Chemical name:	1-(3-mercapto-(2S)-methyl-1-oxopropyl-)-L-proline
Quantity:	Should be given on the label.
Composition:	Pharmaceutical active substance, practical y 100 %.
CAS-No:	62571-86-2
EINECS-No:	263-607-1

Symbol and danger class: X_i Irritant

Xi

Irritant

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Risk(R-) phrases: R 36/37-41-43-64

R 36/37:	Irritating to eyes and respiratory system.
R 41:	Risk of serious damage to eyes.
R 43:	May cause sensitization by skin contact.
R 64:	May cause harm to breast-fed babies.

Safety(S-) phrases: S 3/7-6-22-26-33-36/37/39

S 3/7:	Keep container tightly closed in a cool place.
S 6:	Keep under nitrogen.
S 22:	Do not breathe dust.
S 26:	In case of contact with eyes, rinse immediately with plenty of water and seek medical advice.
S 33:	Take precautionary measures against static discharges.
S 36/37/39:	Wear suitable protective clothing and gloves and eye/face protection.

Manufacturer/Supplier: Soga Enterprises Asia Group Limited
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Rizhao,Shandong,276800,China

Directive and regulations in the EU:
Council Directive 67/548/EEC of 27 June 1967 on the approximation of laws, regulations and administrative provisions relating to the classification, packaging and label ing of dangerous substances and its Amendments (the latest Amendment is 2004/73/EC).

16 Other information

List of corresponding R-phrases:
R 36/37: Irritating to eyes and respiratory system.
R 41:Risk of serious damage to eyes.
R 43: May cause sensitization by skin contact.
R 64: May cause harm to breast-fed babies.

New or deleted information comparing to the latest version of the safety data sheet:
General formal reviewing according to the latest regulations.

The information contained in this sheet is true and accurate to the best of our knowledge. For our recommendations and suggestions we cannot take guarantee, because the conditions of use are beyond our control. If you even find any mistakes in our sheet, do not hesitate to contact us.