

EPICHLOROHYDRIN**0043**

November 2003

CAS No: 106-89-8
RTECS No: TX4900000
UN No: 2023
EC No: 603-026-00-6

1-Chloro-2,3-epoxypropane
gamma-Chloropropylene oxide
2-(Chloromethyl)oxirane
C₃H₅ClO
Molecular mass: 92.5

TYPES OF HAZARD/ EXPOSURE	ACUTE HAZARDS/SYMPTOMS	PREVENTION	FIRST AID/FIRE FIGHTING
FIRE	Flammable. Gives off irritating or toxic fumes (or gases) in a fire.	NO open flames, NO sparks, and NO smoking.	Powder, water spray, foam, carbon dioxide.
EXPLOSION	Above 31°C explosive vapour/air mixtures may be formed.	Above 31°C use a closed system, ventilation, and explosion-proof electrical equipment.	In case of fire: keep drums, etc., cool by spraying with water.

EXPOSURE		AVOID ALL CONTACT!	IN ALL CASES CONSULT A DOCTOR!
Inhalation	Burning sensation. Cough. Sore throat. Headache. Laboured breathing. Nausea. Shortness of breath. Vomiting. Tremor. Symptoms may be delayed (see Notes).	Ventilation, local exhaust, or breathing protection.	Fresh air, rest. Half-upright position. Artificial respiration may be needed. Refer for medical attention.
Skin	MAY BE ABSORBED! Redness. Serious skin burns. Burning sensation. Pain. Blisters.	Protective gloves. Protective clothing.	Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention.
Eyes	Pain. Redness. Permanent loss of vision. Severe deep burns.	Face shield, or eye protection in combination with breathing protection.	First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then take to a doctor.
Ingestion	Abdominal cramps. Burning sensation in the throat and chest. Diarrhoea. Headache. Nausea. Sore throat. Vomiting. Shock or collapse.	Do not eat, drink, or smoke during work. Wash hands before eating.	Rinse mouth. Do NOT induce vomiting. Give plenty of water to drink. Rest. Refer for medical attention.

SPILLAGE DISPOSAL	PACKAGING & LABELLING
Evacuate danger area! Consult an expert! Collect leaking liquid in sealable containers. Absorb remaining liquid in sand or inert absorbent and remove to safe place. Do NOT let this chemical enter the environment. Chemical protection suit including self-contained breathing apparatus.	T Symbol R: 45-10-23/24/25-34-43 S: 53-45 Note: E UN Hazard Class: 6.1 UN Subsidiary Risks: 3 UN Pack Group: II Unbreakable packaging; put breakable packaging into closed unbreakable container. Do not transport with food and feedstuffs.

EMERGENCY RESPONSE	STORAGE
Transport Emergency Card: TEC (R)-61S2023 NFPA Code: H3; F3; R2	Fireproof. Separated from strong oxidants, acids, bases, aluminium, zinc, amines, food and feedstuffs. Well closed.

IMPORTANT DATA

Physical State; Appearance

COLOURLESS LIQUID, WITH CHARACTERISTIC ODOUR.

Chemical dangers

The substance will polymerize due to heating or under the influence of strong acid(s), base(s). On combustion, forms toxic and corrosive fumes, hydrogen chloride (see ICSC0163) and chlorine fumes (see ICSC0126). Reacts violently with strong oxidants. Reacts violently with aluminium, zinc, alcohols, phenols, amines (especially aniline), and organic acids causing fire and explosion hazard. Attacks steel in the presence of water.

Occupational exposure limits

TLV: 0.5 ppm as TWA; (skin); A3; (ACGIH 2003).
MAK: H; Sh; Carcinogen category: 2; Germ cell mutagen group: 3B; (DFG 2003).

Routes of exposure

The substance can be absorbed into the body by inhalation, through the skin and by ingestion.

Inhalation risk

A harmful contamination of the air can be reached very quickly on evaporation of this substance at 20°C.

Effects of short-term exposure

The substance is corrosive to the eyes, the skin and the respiratory tract. Corrosive on ingestion. Inhalation of the vapour may cause lung oedema (see Notes). Inhalation of the vapour may cause asthma-like reactions. The substance may cause effects on the central nervous system, kidneys and liver, resulting in convulsions, kidney impairment, liver impairment. Exposure at high levels may result in death. The effects may be delayed. Medical observation is indicated.

Effects of long-term or repeated exposure

Repeated or prolonged contact may cause skin sensitization. The substance may have effects on the kidneys, liver and lungs, resulting in impaired functions. This substance is probably carcinogenic to humans. Animal tests show that this substance possibly causes toxicity to human reproduction or development.

PHYSICAL PROPERTIES

Boiling point: 116°C
Melting point: (see Notes) -48°C
Relative density (water = 1): 1.2
Solubility in water, g/100 ml: 6
Vapour pressure, kPa at 20°C: 1.6
Relative vapour density (air = 1): 3.2

Relative density of the vapour/air-mixture at 20°C (air = 1): 1.05
Flash point: 31°C c.c.
Auto-ignition temperature: 385°C
Explosive limits, vol% in air: 3.8-21
Octanol/water partition coefficient as log Pow: 0.26

ENVIRONMENTAL DATA

The substance is harmful to aquatic organisms.

NOTES

Other melting points: -25.6 °C and -57°C.
Depending on the degree of exposure, periodic medical examination is indicated.
The symptoms of lung oedema often do not become manifest until a few hours have passed and they are aggravated by physical effort. Rest and medical observation are therefore essential.
Immediate administration of an appropriate spray, by a doctor or a person authorized by him/her, should be considered.
The odour warning when the exposure limit value is exceeded is insufficient.
Do NOT take working clothes home.

ADDITIONAL INFORMATION

LEGAL NOTICE

Neither the EC nor the IPCS nor any person acting on behalf of the EC or the IPCS is responsible for the use which might be made of this information