

2,3-Dimercapto-1-propanol

sc-256286



The Power is Question

Material Safety Data Sheet

Hazard Alert Code Key: **EXTREME** **HIGH** **MODERATE** **LOW**

Section 1 - CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME

2,3-Dimercapto-1-propanol

STATEMENT OF HAZARDOUS NATURE

CONSIDERED A HAZARDOUS SUBSTANCE ACCORDING TO OSHA 29 CFR 1910.1200.

NFPA



SUPPLIER

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EMERGENCY

ChemWatch
Within the US & Canada: 877-715-9305
Outside the US & Canada: +800 2436 2255
(1-800-CHEMCALL) or call +613 9573 3112

SYNONYMS

C3-H8-O-S2, BAL, "dimercaprol propanol", dimercaptol, dimercaptopropanol, "2, 3-dimercaptopropanol", "2, 3-dimercaptopropan-1-ol", "2, 3-dimercapto-1-propanol", dithioglycerol, "2, 3-dithiopropanol", "glycerol, 1, 2-dithio-", "British Antilewesite", Dicapto, Sulfactin, "USAF ME-1"

Section 2 - HAZARDS IDENTIFICATION

CHEMWATCH HAZARD RATINGS

	Min	Max
Flammability:	1	
Toxicity:	2	
Body Contact:	2	
Reactivity:	1	
Chronic:	3	

Min/Nil=0
Low=1
Moderate=2
High=3
Extreme=4



CANADIAN WHMIS SYMBOLS



EMERGENCY OVERVIEW

RISK

Harmful if swallowed.

May cause SENSITISATION by skin contact.

Irritating to eyes, respiratory system and skin.

POTENTIAL HEALTH EFFECTS

ACUTE HEALTH EFFECTS

SWALLOWED

■ Accidental ingestion of the material may be harmful; animal experiments indicate that ingestion of less than 150 gram may be fatal or may produce serious damage to the health of the individual.

■ Considered an unlikely route of entry in commercial/industrial environments.

■ Ingestion may result in nausea, pain, vomiting.

Vomit entering the lungs by aspiration may cause potentially lethal chemical pneumonitis.

EYE

■ This material can cause eye irritation and damage in some persons.

■ The vapor is highly discomforting.

SKIN

■ This material can cause inflammation of the skin oncontact in some persons.

■ Skin contact is not thought to have harmful health effects, however the material may still produce health damage following entry through wounds, lesions or abrasions.

■ The liquid may produce skin discomfort following prolonged contact.

Defatting and/or drying of the skin may lead to dermatitis.

■ Toxic effects may result from skin absorption.

INHALED

■ If inhaled, this material can irritate the throat andlungs of some persons.

■ Inhalation hazard is increased at higher temperatures.

■ Inhalation of vapor may aggravate a pre-existing respiratory condition.

■ Thiols (particularly ethyl mercaptan) produce lethargy or sleepiness.

Exposure to high levels may result in nausea, vomiting, restlessness, muscle incoordination and or paralysis, bluing of skin, depression of breathing, coma and death.

CHRONIC HEALTH EFFECTS

■ Skin contact with the material is more likely to cause a sensitization reaction in some persons compared to the general population.

■ Principal routes of exposure are usually by skin contact/absorption and inhalation of vapor.

No human exposure data available. For this reason health effects described are based on experience with chemically related materials.

As with any chemical product, contact with unprotected bare skin; inhalation of vapor, mist or dust in work place atmosphere; or ingestion in any form, should be avoided by observing good occupational work practice.

Section 3 - COMPOSITION / INFORMATION ON INGREDIENTS

NAME	CAS RN	%
dimercaprol	59-52-9	>98

Section 4 - FIRST AID MEASURES

SWALLOWED

■ If poisoning occurs, contact a doctor or Poisons Information Center. · IF SWALLOWED, REFER FOR MEDICAL ATTENTION, WHERE POSSIBLE, WITHOUT DELAY. · For advice, contact a Poisons Information Center or a doctor.

EYE

■ If this product comes in contact with the eyes: · Immediately hold eyelids apart and flush the eye continuously with running water. · Ensure complete irrigation of the eye by keeping eyelids apart and away from eye and moving the eyelids by occasionally lifting the upper and lower lids.

SKIN

■ If skin contact occurs: · Immediately remove all contaminated clothing, including footwear · Flush skin and hair with running water (and soap if available).

INHALED

· If fumes or combustion products are inhaled remove from contaminated area. · Lay patient down. Keep warm and rested.

NOTES TO PHYSICIAN

■ citing from :

MARTINDALE: The Extra Pharmacopoeia, 27th Ed.

Administration of an antihistamine may alleviate some of the adverse side-effects of dimercaprol.

Section 5 - FIRE FIGHTING MEASURES

Vapour Pressure (mmHG):	Not available
Upper Explosive Limit (%):	Not available
Specific Gravity (water=1):	1.239
Lower Explosive Limit (%):	Not available

EXTINGUISHING MEDIA

- Foam.
- Dry chemical powder.

FIRE FIGHTING

- Alert Emergency Responders and tell them location and nature of hazard.
- Wear full body protective clothing with breathing apparatus.

When any large container (including road and rail tankers) is involved in a fire, consider evacuation by 800 metres in all directions.

GENERAL FIRE HAZARDS/HAZARDOUS COMBUSTIBLE PRODUCTS

- Combustible.
 - Slight fire hazard when exposed to heat or flame.
- Combustion products include: sulfur oxides (SOx).

FIRE INCOMPATIBILITY

- Avoid contamination with oxidizing agents i.e. nitrates, oxidizing acids, chlorine bleaches, pool chlorine etc. as ignition may result.

PERSONAL PROTECTION

Glasses:

Safety Glasses.

Gloves:

Respirator:

Type A Filter of sufficient capacity

Section 6 - ACCIDENTAL RELEASE MEASURES

MINOR SPILLS

- Remove all ignition sources.
- Clean up all spills immediately.

MAJOR SPILLS

- Clear area of personnel and move upwind.
- Alert Emergency Responders and tell them location and nature of hazard.

Section 7 - HANDLING AND STORAGE

PROCEDURE FOR HANDLING

- Avoid all personal contact, including inhalation.
- Wear protective clothing when risk of exposure occurs.

RECOMMENDED STORAGE METHODS

- Metal can or drum
- Packing as recommended by manufacturer.

STORAGE REQUIREMENTS

- Store in original containers.
- Keep containers securely sealed.

Section 8 - EXPOSURE CONTROLS / PERSONAL PROTECTION

EXPOSURE CONTROLS

The following materials had no OELs on our records

- dimercaprol: CAS:59-52-9

PERSONAL PROTECTION



RESPIRATOR

Type A Filter of sufficient capacity

Consult your EHS staff for recommendations

EYE

- Safety glasses.
- Safety glasses with side shields.

HANDS/FEET

- Barrier cream with polyethylene gloves.
- Butyl rubber gloves or · Neoprene gloves · PVC gloves.
- Safety footwear.

OTHER

- Overalls.
- Impervious protective clothing.
- Eyewash unit.

ENGINEERING CONTROLS

- General exhaust is adequate under normal operating conditions. Local exhaust ventilation may be required in specific circumstances.

Section 9 - PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL PROPERTIES

Liquid.

Mixes with water.

State	Liquid	Molecular Weight	124.22
Melting Range (°F)	Not available	Viscosity	Not Available
Boiling Range (°F)	248 (15 mm Hg)	Solubility in water (g/L)	Miscible
Flash Point (°F)	>230	pH (1% solution)	Not available
Decomposition Temp (°F)	Not Available	pH (as supplied)	Not applicable
Autoignition Temp (°F)	Not available	Vapour Pressure (mmHG)	Not available
Upper Explosive Limit (%)	Not available	Specific Gravity (water=1)	1.239
Lower Explosive Limit (%)	Not available	Relative Vapor Density (air=1)	>1
Volatile Component (%vol)	Not available	Evaporation Rate	Not available

APPEARANCE

Viscous colourless liquid with offensive odour; mixes with water with decomposition (8.7 g/100 ml).

Section 10 - CHEMICAL STABILITY

CONDITIONS CONTRIBUTING TO INSTABILITY

- Presence of incompatible materials.
- Product is considered stable.

STORAGE INCOMPATIBILITY

- Avoid reaction with oxidizing agents, bases and strong reducing agents.
- Avoid alkali metals.

For incompatible materials - refer to Section 7 - Handling and Storage.

Section 11 - TOXICOLOGICAL INFORMATION

dimercaprol

TOXICITY AND IRRITATION

DIMERCAPROL:

- unless otherwise specified data extracted from RTECS - Register of Toxic Effects of Chemical Substances.

TOXICITY	IRRITATION
Intraperitoneal (rat) LD50: 105 mg/kg	Nil Reported
Subcutaneous (rat) LD50: 2000 mg/kg	
Intramuscular (rat) LD50: 87 mg/kg	
Intraperitoneal (mouse) LD50: 25 mg/kg	
Intravenous (mouse) LD50: 56 mg/kg	
Intramuscular (mouse) LD50: 113 mg/kg	
Intravenous (rabbit) LD50: 50 mg/kg	
Intramuscular (rabbit) LD50: 50 mg/kg	
Parenteral (rabbit) LD50: 40 mg/kg	

Oral (Mouse) LD50: 217 mg/kg

Intravenous (Cat) LD50: 37500 mg/kg

Intraperitoneal (Mouse) LD50: 90 mg/kg

■ Exposure to the material for prolonged periods may cause physical defects in the developing embryo (teratogenesis).

Blood pressure elevation, arteriolar constriction, haemorrhage, dermatitis after systemic exposure, foetolethality, specific developmental abnormalities (craniofacial, musculoskeletal system) recorded.

Side-effects produced by dimercaprol (after injection) are hypertension, and tachycardia, nausea, vomiting, headache, burning sensation of the lips, mouth, throat and eyes, lachrymation, and salivation, tingling of the extremities, a sensation of constriction in the throat and chest, muscle pains, muscle spasm, rhinorrhoea, sweating, restlessness, and abdominal pain.

Section 12 - ECOLOGICAL INFORMATION

This material and its container must be disposed of as hazardous waste.

Ecotoxicity

Ingredient	Persistence: Water/Soil	Persistence: Air	Bioaccumulation	Mobility
dimercaprol	LOW		LOW	HIGH

GESAMP/EHS COMPOSITE LIST - GESAMP Hazard Profiles

Name / EHS TRN A1a A1b A1 A2 B1 B2 C1 C2 C3 D1 D2 D3 E1 E2 E3 Cas No / RTECS No _____
_____ Alcoholic 293 85 0 0 0 R 0 0 0 0 0 1 D 1 beverages / CAS:59- 52- 9 /

Legend: EHS=EHS Number (EHS=GESAMP Working Group on the Evaluation of the Hazards of Harmful Substances Carried by Ships)
NRT=Net Register Tonnage, A1a=Bioaccumulation log Pow, A1b=Bioaccumulation BCF, A1=Bioaccumulation, A2=Biodegradation,
B1=Acute aquatic toxicity LC/EC1C50 (mg/l), B2=Chronic aquatic toxicity NOEC (mg/l), C1=Acute mammalian oral toxicity LD50 (mg/kg),
C2=Acute mammalian dermal toxicity LD50 (mg/kg), C3=Acute mammalian inhalation toxicity LC50 (mg/kg), D1=Skin irritation & corrosion,
D2=Eye irritation & corrosion, D3=Long-term health effects, E1=Tainting, E2=Physical effects on wildlife & benthic habitats, E3=Interference
with coastal amenities, For column A2: R=Readily biodegradable, NR=Not readily biodegradable. For column D3: C=Carcinogen,
M=Mutagenic, R=Reprotoxic, S=Sensitising, A=Aspiration hazard, T=Target organ systemic toxicity, L=Lung injury, N=Neurotoxic,
I=Immunotoxic. For column E1: NT=Not tainting (tested), T=Tainting test positive. For column E2: Fp=Persistent floater, F=Floater, S=Sinking
substances. The numerical scales start from 0 (no hazard), while higher numbers reflect increasing hazard. (GESAMP/EHS Composite List
of Hazard Profiles - Hazard evaluation of substances transported by ships)

Section 13 - DISPOSAL CONSIDERATIONS

Disposal Instructions

All waste must be handled in accordance with local, state and federal regulations.

- Consult manufacturer for recycling options and recycle where possible .
- Consult Waste Management Authority for disposal.

Section 14 - TRANSPORTATION INFORMATION

DOT:

Symbols: None Hazard class or Division: 6.1

Identification Numbers: UN2810 PG: III

Label Codes: 6.1 Special provisions: IB3, T7,
TP1, TP28

Packaging: Exceptions: 153 Packaging: Non- bulk: 203

Packaging: Exceptions: 153 Quantity limitations: 60 L

Passenger aircraft/rail:

Quantity Limitations: Cargo 220 L Vessel stowage: Location: A
aircraft only:

Vessel stowage: Other: 40

Hazardous materials descriptions and proper shipping names:

Toxic, liquids, organic, n.o.s.

Air Transport IATA:

ICAO/IATA Class: 6.1 ICAO/IATA Subrisk: None

UN/ID Number: 2810 Packing Group: III

Special provisions: A3

Cargo Only

Packing Instructions: 618 Maximum Qty/Pack: 220 L

Passenger and Cargo Passenger and Cargo

Packing Instructions: 611 Maximum Qty/Pack: 60 L

Passenger and Cargo Limited Quantity Passenger and Cargo Limited Quantity

Packing Instructions: Y611 Maximum Qty/Pack: 2 L

Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S. *(CONTAINS
DIMERCAPROL)

Maritime Transport IMDG:

IMDG Class: 6.1 IMDG Subrisk: None

UN Number: 2810 Packing Group: III

EMS Number: F-A , S-A Special provisions: 223 274
Limited Quantities: 5 L
Shipping Name: TOXIC LIQUID, ORGANIC, N.O.S.

Section 15 - REGULATORY INFORMATION

dimercaprol (CAS: 59-52-9) is found on the following regulatory lists;

"Canada Non-Domestic Substances List (NDSL)", "US Toxic Substances Control Act (TSCA) - Inventory"

Section 16 - OTHER INFORMATION

ND

Substance CAS Suggested codes dimercaprol 59- 52- 9

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■ Classification of the preparation and its individual components has drawn on official and authoritative sources as well as independent review by the Chemwatch Classification committee using available literature references.

A list of reference resources used to assist the committee may be found at:
www.chemwatch.net/references.

■ The (M)SDS is a Hazard Communication tool and should be used to assist in the Risk Assessment. Many factors determine whether the reported Hazards are Risks in the workplace or other settings. Risks may be determined by reference to Exposures Scenarios. Scale of use, frequency of use and current or available engineering controls must be considered.

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