

SIGMA-ALDRICH

Material Safety Data Sheet

Version 3.0
Revision Date 08/21/2009
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1. PRODUCT AND COMPANY IDENTIFICATION

Product name : **Dimethyl disulfide**

Product Number : 471569
Brand : Aldrich

Company : **Sigma-Aldrich**
3050 Spruce Street
SAINT LOUIS MO 63103
USA

Telephone : +18003255832
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2. COMPOSITION/INFORMATION ON INGREDIENTS

Synonyms : DMDS
Methyl disulfide

Formula : $C_2H_6S_2$
Molecular Weight : 94.2 g/mol

CAS-No.	EC-No.	Index-No.	Concentration
Dimethyl disulphide			
624-92-0	210-871-0	-	-

3. HAZARDS IDENTIFICATION

Emergency Overview

OSHA Hazards

Flammable Liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Irritant

Target Organs

Blood, Liver

Other hazards which do not result in classification

Stench.

HMIS Classification

Health Hazard: 3
Chronic Health Hazard: *
Flammability: 3
Physical hazards: 0

NFPA Rating

Health Hazard: 2

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Fire: 3
Reactivity Hazard: 0

Potential Health Effects

Inhalation Toxic if inhaled. Causes respiratory tract irritation.
Skin May be harmful if absorbed through skin. Causes skin irritation.
Eyes Causes eye irritation.
Ingestion Toxic if swallowed.

4. FIRST AID MEASURES

General advice

Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.

If inhaled

If breathed in, move person into fresh air. If not breathing give artificial respiration. Consult a physician.

In case of skin contact

Wash off with soap and plenty of water. Consult a physician.

In case of eye contact

Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician.

If swallowed

Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

5. FIRE-FIGHTING MEASURES

Flammable properties

Flash point 15 °C (59 °F) - closed cup

Ignition temperature > 300 °C (> 572 °F)

Suitable extinguishing media

For small (incipient) fires, use media such as "alcohol" foam, dry chemical, or carbon dioxide. For large fires, apply water from as far as possible. Use very large quantities (flooding) of water applied as a mist or spray; solid streams of water may be ineffective. Cool all affected containers with flooding quantities of water.

Special protective equipment for fire-fighters

Wear self contained breathing apparatus for fire fighting if necessary.

Further Information

Use water spray to cool unopened containers.

6. ACCIDENTAL RELEASE MEASURES

Personal precautions

Use personal protective equipment. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Remove all sources of ignition. Evacuate personnel to safe areas. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

Methods for cleaning up

Contain spillage, and then collect with non-combustible absorbent material, (e.g. sand, earth, diatomaceous earth, vermiculite) and place in container for disposal according to local / national regulations (see section 13).

7. HANDLING AND STORAGE

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Handling

Avoid contact with skin and eyes. Avoid inhalation of vapour or mist.
Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.

Storage

Keep container tightly closed in a dry and well-ventilated place. Containers which are opened must be carefully resealed and kept upright to prevent leakage. Store in cool place.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION**Components with workplace control parameters**

Components	CAS-No.	Value	Control parameters	Update	Basis
Dimethyl disulphide	624-92-0	TWA	0.5 ppm	2006-11-17	USA, ACGIH Threshold Limit Values (TLV)
Remarks	Skin contact does contribute to exposure.				

Personal protective equipment**Respiratory protection**

Where risk assessment shows air-purifying respirators are appropriate use a full-face respirator with multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges as a backup to engineering controls. If the respirator is the sole means of protection, use a full-face supplied air respirator. Use respirators and components tested and approved under appropriate government standards such as NIOSH (US) or CEN (EU).

Hand protection

Handle with gloves.

Eye protection

Face shield and safety glasses

Skin and body protection

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Hygiene measures

Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

9. PHYSICAL AND CHEMICAL PROPERTIES**Appearance**

Form	clear, liquid
Colour	light yellow
Odour	Stench.

Safety data

pH	no data available
Melting point	-85 °C (-121 °F) - lit.
Boiling point	109 °C (228 °F) - lit.
Flash point	15 °C (59 °F) - closed cup
Ignition temperature	> 300 °C (> 572 °F)
Lower explosion limit	1.1 %(V)

Upper explosion limit	16 %(V)
Vapour pressure	153 hPa (115 mmHg) at 55 °C (131 °F) 38.1 hPa (28.6 mmHg) at 25 °C (77 °F)
Density	1.046 g/mL at 25 °C (77 °F)
Water solubility	no data available
Partition coefficient: n-octanol/water	log Pow: 1.77
Relative vapour density	3.25 - (Air = 1.0)

10. STABILITY AND REACTIVITY**Storage stability**

Stable under recommended storage conditions.

Conditions to avoid

Heat, flames and sparks.

Materials to avoid

Strong bases, Strong oxidizing agents, Strong reducing agents

Hazardous decomposition products

Hazardous decomposition products formed under fire conditions. - Carbon oxides, Sulphur oxides

Hazardous reactions

Vapours may form explosive mixture with air.

11. TOXICOLOGICAL INFORMATION**Acute toxicity**

LD50 Oral - rat	290 - 500 mg/kg
LC50 Inhalation - rat - 4 h	3,100 mg/m3
LD50 Dermal - rabbit	> 2,000 mg/kg

Irritation and corrosion

Skin - rabbit	Mild skin irritation
Eyes - rabbit	Moderate eye irritation

Sensitisation

no data available

Chronic exposure

IARC:	No component of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
ACGIH:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.
NTP:	No component of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
OSHA:	No component of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.

Signs and Symptoms of Exposure

Nausea, Headache, Vomiting, anemia

Potential Health Effects

Inhalation	Toxic if inhaled. Causes respiratory tract irritation.
Skin	May be harmful if absorbed through skin. Causes skin irritation.
Eyes	Causes eye irritation.
Ingestion	Toxic if swallowed.
Target Organs	Blood, Liver,

Additional Information

RTECS: JO1927500

12. ECOLOGICAL INFORMATION

Elimination information (persistence and degradability)

Biodegradability

Ecotoxicity effects

Toxicity to fish	LC50 - Salmo salar (Atlantic salmon) - 1.75 mg/l
Toxicity to daphnia and other aquatic invertebrates.	EC50 - Daphnia magna (Water flea) - 7 mg/l - 48 h

Further information on ecology

An environmental hazard cannot be excluded in the event of unprofessional handling or disposal.

Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

13. DISPOSAL CONSIDERATIONS

Product

Burn in a chemical incinerator equipped with an afterburner and scrubber but exert extra care in igniting as this material is highly flammable. Observe all federal, state, and local environmental regulations. Contact a licensed professional waste disposal service to dispose of this material.

Contaminated packaging

Dispose of as unused product.

14. TRANSPORT INFORMATION

DOT (US)

UN-Number: 2381 Class: 3 Packing group: II
Proper shipping name: Dimethyl disulfide
Marine pollutant: No
Poison Inhalation Hazard: No

IMDG

UN-Number: 2381 Class: 3 Packing group: II EMS-No: F-E, S-D
Proper shipping name: DIMETHYL DISULPHIDE
Marine pollutant: No

IATA

UN-Number: 2381 Class: 3 Packing group: II
Proper shipping name: Dimethyl disulphide

15. REGULATORY INFORMATION

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OSHA Hazards

Flammable Liquid, Target Organ Effect, Toxic by inhalation., Toxic by ingestion, Irritant

DSL Status

All components of this product are on the Canadian DSL list.

SARA 302 Components

SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SARA 313 Components

SARA 313: This material does not contain any chemical components with known CAS numbers that exceed the threshold (De Minimis) reporting levels established by SARA Title III, Section 313.

SARA 311/312 Hazards

Fire Hazard, Acute Health Hazard, Chronic Health Hazard

Massachusetts Right To Know Components

Dimethyl disulphide	CAS-No. 624-92-0	Revision Date 1991-07-01
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Pennsylvania Right To Know Components

Dimethyl disulphide	CAS-No. 624-92-0	Revision Date 1991-07-01
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New Jersey Right To Know Components

Dimethyl disulphide	CAS-No. 624-92-0	Revision Date 1991-07-01
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California Prop. 65 Components

This product does not contain any chemicals known to State of California to cause cancer, birth, or any other reproductive defects.

16. OTHER INFORMATION

Further Information

Copyright 2009 Sigma-Aldrich Co. License granted to make unlimited paper copies for internal use only. The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. Sigma-Aldrich Co., shall not be held liable for any damage resulting from handling or from contact with the above product. See reverse side of invoice or packing slip for additional terms and conditions of sale.

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