

9/10/07

**SIGMA-ALDRICH**

**Material Safety Data Sheet**

Version 3.1  
Revision Date 05/17/2007  
Print Date 08/15/2007

**1. PRODUCT AND COMPANY IDENTIFICATION**

Product name : **Dimethyl sulfoxide**  
Product Number : D8418  
Brand : Sigma  
Company : Sigma-Aldrich  
3050 Spruce Street  
SAINT LOUIS MO 63103  
USA  
Telephone : +1 800-325-5832  
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**2. COMPOSITION/INFORMATION ON INGREDIENTS**

Synonyms : DMSO  
Formula : C<sub>2</sub>H<sub>6</sub>OS  
Molecular Weight : 78.13 g/mol

CAS-No.	EC-No.	Index-No.	Concentration [%]
Dimethyl sulfoxide			
67-68-5	200-664-3	-	-

**3. HAZARDS IDENTIFICATION**

**Emergency Overview**  
**OSHA Hazards**  
Combustible Liquid  
Delayed target organ effects  
Mild skin irritant  
Mild eye irritant  
**Target Organs**  
Eyes, Skin  
**HMIS Classification**  
Health Hazard: 1  
Chronic Health Hazard: \*  
Flammability: 2  
Physical hazards: 0

**NFPA Rating**  
Health Hazard: 1  
Fire 2  
Reactivity Hazard: 0

**Potential Health Effects**

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

**4. FIRST AID MEASURES**

**General advice**  
Move out of dangerous area.  
**If inhaled**  
If breathed in, move person into fresh air. If not breathing give artificial respiration.  
**In case of skin contact**  
Wash off with soap and plenty of water.  
**In case of eye contact**  
Flush eyes with water as a precaution.  
**If swallowed**  
Never give anything by mouth to an unconscious person. Rinse mouth with water.

**5. FIRE-FIGHTING MEASURES**

**Flammable properties**  
Flash point 87 °C (189 °F) - closed cup  
Ignition temperature 301 °C (574 °F)  
**Suitable extinguishing media**  
Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.  
**Special protective equipment for fire-fighters**  
Wear self contained breathing apparatus for fire fighting if necessary.

**6. ACCIDENTAL RELEASE MEASURES**

**Personal precautions**  
Avoid breathing vapors, mist or gas.  
**Environmental precautions**  
Do not let product enter drains.  
**Methods for cleaning up**  
Keep in suitable, closed containers for disposal.

**7. HANDLING AND STORAGE**

**Handling**  
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.

**8. EXPOSURE CONTROLS / PERSONAL PROTECTION**

Contains no substances with occupational exposure limit values.  
**Personal protective equipment**  
**Respiratory protection**  
Respiratory protection is not required. Where protection is desired, use multi-purpose combination (US) or type ABEK (EN 14387) respirator cartridges. 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**  
Safety glasses

**Hygiene measures**  
General industrial hygiene practice.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

### Appearance

Form liquid, clear  
Colour colourless

### Safety data

pH no data available  
Melting point 18.4 °C (65.1 °F)  
Boiling point 189 °C (372 °F) at 1,013 hPa (760 mmHg)  
Flash point 87 °C (189 °F) - closed cup  
Ignition temperature 301 °C (574 °F)  
Lower explosion limit 3.5 %(V)  
Upper explosion limit 42 %(V)  
Vapour pressure 0.55 hPa (0.41 mmHg) at 20 °C (68 °F)  
Density 1.1 g/cm<sup>3</sup>  
Water solubility completely miscible  
Partition coefficient (n-octanol/water) log Pow: -2.03

## 10. STABILITY AND REACTIVITY

**Storage stability**  
Stable under recommended storage conditions.

**Materials to avoid**  
Acid chlorides, Phosphorus halides, Strong acids, Strong oxidizing agents, Strong reducing agents

### Hazardous decomposition products

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

## 11. TOXICOLOGICAL INFORMATION

### Acute toxicity

LD50 Oral - rat - 3,300 mg/kg  
LC50 Inhalation - rat - 4 h - 40250 ppm  
LD50 Dermal - rabbit - > 5,000 mg/kg

### Irritation and corrosion

Skin - rabbit - Mild skin irritation - 24 h  
Eyes - rabbit - Mild eye irritation

### Sensitization

no data available

### Chronic exposure

no data available

### Potential Health Effects

**Inhalation** May be harmful if inhaled. May cause respiratory tract irritation.  
**Skin** May be harmful if absorbed through skin. May cause skin irritation.  
**Eyes** May cause eye irritation.  
**Ingestion** May be harmful if swallowed.  
**Target Organs** Eyes, Skin.

## 12. ECOLOGICAL INFORMATION

### Elimination information (persistence and degradability)

no data available

### Ecotoxicity effects

Toxicity to fish LC50 - Pimephales promelas (fathead minnow) - 34,000 mg/l - 96 h  
LC50 - Oncorhynchus mykiss (rainbow trout) - 35,000 mg/l - 96 h  
Toxicity to daphnia and other aquatic invertebrates. EC50 - Daphnia pulex (Water flea) - 27,500 mg/l  
Toxicity to algae EC50 - Lepomis macrochirus (Bluegill) - > 400,000 mg/l - 96 h

### Further information on ecology

no data available

## 13. DISPOSAL CONSIDERATIONS

### Product

This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. 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-No.: 1993 Class: OBL Packing group: III  
Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide)

### IMDG

Not dangerous goods

### IATA

Not dangerous goods

## 15. REGULATORY INFORMATION

### OSHA Hazards

Combustible Liquid, Delayed target organ effects, Mild skin irritant, Mild eye irritant

**TSCA Status**

On TSCA Inventory

**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**

No Components Listed

**Pennsylvania Right To Know Components**

	CAS-No.	Revision Date
Dimethyl sulfoxide	67-68-5	

**New Jersey Right To Know Components**

	CAS-No.	Revision Date
Dimethyl sulfoxide	67-68-5	

**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**

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