

## Material Safety Data Sheet

Version 3.4  
Revision Date 07/23/2008  
Print Date 04/08/2010

### 1. PRODUCT AND COMPANY IDENTIFICATION

Product name : Dimethyl sulfoxide

Product Number : 494429  
Brand : Sigma-Aldrich

Company : Sigma-Aldrich Canada, Ltd  
2149 Winston Park Drive  
OAKVILLE ON L6H 6J8  
CANADA

Telephone : +19058299500  
Fax : +19058299292  
Emergency Phone # : 800-424-9300

### 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
<b>Dimethyl sulfoxide</b>			
67-68-5	200-664-3	-	-

### 3. HAZARDS IDENTIFICATION

#### Emergency Overview

##### Target Organs

Eyes, Skin

#### WHMIS Classification

B3 Combustible Liquid

Combustible Liquid

#### HMIS Classification

Health Hazard: 1  
Chronic Health Hazard: \*  
Flammability: 2  
Physical hazards: 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.

Store under inert gas. hygroscopic

#### 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**

For prolonged or repeated contact use protective 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

Relative vapour  
density 2.70  
- (Air = 1.0)

**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 - 14,500 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

#### **Sensitisation**

no data available

#### **Chronic exposure**

Carcinogenicity - rat - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Skin and Appendages: Other: Tumors.

Carcinogenicity - mouse - Oral

Tumorigenic: Equivocal tumorigenic agent by RTECS criteria. Leukaemia Skin and Appendages: Other: Tumors.

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.

Genotoxicity in vitro - mouse - lymphocyte

Cytogenetic analysis

Genotoxicity in vitro - mouse - lymphocyte

Mutation in mammalian somatic cells.

Genotoxicity in vivo - rat - Intraperitoneal

Cytogenetic analysis

Genotoxicity in vivo - mouse - Intraperitoneal

DNA damage

Developmental Toxicity - mouse - Intraperitoneal

Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

Reproductive toxicity - rat - Intraperitoneal

Effects on Fertility: Abortion.

Reproductive toxicity - rat - Intraperitoneal

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Reproductive toxicity - rat - Subcutaneous

Effects on Fertility: Post-implantation mortality (e.g., dead and/or resorbed implants per total number of implants).

Effects on Fertility: Litter size (e.g., # fetuses per litter; measured before birth).

Reproductive toxicity - mouse - Oral

Effects on Fertility: Pre-implantation mortality (e.g., reduction in number of implants per female; total number of implants per corpora lutea). Effects on Embryo or Fetus: Fetotoxicity (except death, e.g., stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.

#### **Potential Health Effects**

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

#### **Additional Information**

RTECS: PV6210000

## **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**

Contact a licensed professional waste disposal service to dispose of this material. This combustible material may be burned in a chemical incinerator equipped with an afterburner and scrubber. Observe all federal, state, and local environmental regulations.

**Contaminated packaging**

Dispose of as unused product.

**14. TRANSPORT INFORMATION****DOT (US)**

UN-Number: 1993 Class: CBL Packing group: III  
Proper shipping name: Combustible liquid, n.o.s. (Dimethyl sulfoxide)  
Marine pollutant: No  
Poison Inhalation Hazard: No

**IMDG**

Not dangerous goods

**IATA**

Not dangerous goods

**15. REGULATORY INFORMATION****DSL Status**

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

**WHMIS Classification**

B3 Combustible Liquid Combustible Liquid

**16. OTHER INFORMATION****Further information**

Copyright 2008 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.