

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

Product (material) name: Dimethyl Sulfoxide
Other names: DMSO
Recommended use: Solvent for pharmaceutical products
Supplier Details: Pharmachem
Unit 6, 70 Fison Ave West
Eagle Farm QLD 4009
Telephone: (07) 3868 0333
Facsimile: (07) 3868 0344
Contact Person: Mr Gray Boston
Emergency Telephone: (07) 3630 1654

SECTION 2 HAZARDS IDENTIFICATION

This product is not dangerous goods under the Australian Dangerous Goods (ADG) Code and is classified as not hazardous according to the classification criteria of NOHSC:1008(2004), Approved Criteria For Classifying Hazardous Substances and the National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011(2003)].

Health Effects

Slightly hazardous in case of inhalation, skin contact, eye contact and ingestion.

Acute:

Ingestion: The liquid is irritating to the gastro-intestinal tract and may be harmful if swallowed.
Eye: The liquid is irritating and harmful to the eyes, and may cause visual blurring.
Skin: Irritating to skin. Histaminic-type reaction.
Inhalation: The vapour/mist is irritating and harmful, to the upper respiratory tract and lungs.

Other Information: Effects of overexposure: burning, itching, scaling, nausea, vomiting, chills and cramps.

Safety phrase(s): S2 Keep out of the reach of children.
S23 Do not breathe vapour.
S36 Wear suitable protective clothing.

SECTION 3 COMPOSITION/INFORMATION ON INGREDIENTS

Ingredients	Cas No.	Proportion
Dimethyl Sulfoxide	67-68-5	100.00%

SECTION 4 FIRST AID MEASURES

The following First Aid directions have been set by the Office of Chemical Safety and Environmental Health (OCSEH) of the Commonwealth Department of Health and Aging:

If poisoning occurs, contact a doctor or Poisons Information Centre. *Phone Australia 131126, New Zealand 0800 764 766.* If skin contact occurs, remove contaminated clothing and wash skin thoroughly. (*FAISD Handbook, Handbook of First Aid Instructions, Safety Directions, Warning Statements, and General Safety Precautions for, Agricultural and Veterinary Chemicals*).

The following additional information is provided for use in emergencies while implementing the above First Aid directions.

Ingestion: If conscious, give water (or milk) to drink.

Eye:	Immediately irrigate with copious quantities of water for at least 15 minutes. Eyelids to be held open. Removal of contact lenses after an injury should only be undertaken by skilled personnel.
Skin:	This substance is readily absorbed through the skin. If this material comes in contact with the skin, immediately flush body and clothes with large amounts of water, using safety shower if available. Quickly remove all contaminated clothing, including footwear. Wash affected areas with water (and soap if available) for at least 15 minutes.
Inhalation:	Remove patient to fresh air. Lay patient down. Keep warm and rested. If breathing is shallow or has stopped, ensure clear airway and attempt resuscitation.

SECTION 5 FIRE FIGHTING MEASURES

Combustible. Moderate fire hazard when exposed to heat or flame.

Fire / Explosion Hazards:	Above flash point, vapor-air mixtures are explosive within flammable limits noted above. Sealed containers may rupture when heated. Sensitive to static discharge.
Extinguishing Media:	Foam, Dry chemical powder, Carbon Dioxide. Water spray or fog – Large fires only
Fire Fighting Procedures:	In the event of a fire, wear full protective clothing and approved self-contained breathing apparatus with full facepiece operated in the pressure demand or other positive pressure mode.
Other Precautions:	Vapors can flow along surfaces to distant ignition source and flash back. Use flameproof equipment and fittings to prevent flammability risk. Earth all containers to reduce the possibility of sparks from static electricity. Do not use close to ignition sources.

SECTION 6 ACCIDENTAL RELEASE MEASURES

Emergency procedures:	Wear full protective clothing. Remove all sources of ignition and provide adequate ventilation.
Methods and materials for containment and clean up:	Cover with absorbent (soil or sand, sawdust, inert material, vermiculite). Collect and seal in properly labelled drums for disposal. Wash area down with excess water, but do not allow water to enter drains or sewers. Dispose of collected material in accordance with local authority instructions.

SECTION 7 HANDLING AND STORAGE

Precautions for safe handling:
The following Safety Directions have been set by the Office of Chemical Safety and Environmental Health (OCSEH) of the Commonwealth Department of Health and Aging:

Not for therapeutic use. Avoid contact with eyes. Avoid contact with skin. Wear protective gloves when mixing or using. Avoid breathing vapour. (*FAISD Handbook, Handbook of First Aid Instructions, Safety Directions, Warning Statements, and General Safety Precautions for, Agricultural and Veterinary Chemicals*)

In addition the following precautions may be observed when handling this material:
Use in a well-ventilated area. Prevent concentration in hollows and sumps. DO NOT enter confined spaces until atmosphere has been checked. Avoid smoking, naked lights or ignition sources. Avoid contact with

incompatible materials. When handling, DO NOT eat, drink or smoke. Keep containers securely sealed when not in use. Avoid physical damage to containers. Always wash hands with soap and water after handling. Launder contaminated clothing before re-use. Work clothes should be laundered separately.

Conditions for safe storage, including any incompatibilities:

Store in the tightly closed original container in a cool dry well ventilated area away from incompatible substances. Store away from oxidizing agents and sources of heat or ignition.

SECTION 8 EXPOSURE CONTROLS/PERSONAL PROTECTION

National exposure standards:	None set
Biological limit values:	None set
Engineering controls:	Ventilation should be sufficient to prevent breathing of vapour. Use with local exhaust ventilation or wearing appropriate respirator. Safety shower and eyebath should be available.
Personal protective equipment: Chemically	Safety glasses, goggles or face shield as appropriate. resistant gloves. Appropriate protective clothing.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

Appearance:	Colourless liquid
Melting Point:	18.4°C
Boiling Point:	189°C
Vapour Pressure:	0.4mmHg at 20 C
Specific Gravity:	(Water = 1) 1.10
Flash Point:	84°C Setaflash closed cup
Autoignition Temp:	215°C
Solubility in water @ 20°C	Soluble

SECTION 10 STABILITY AND REACTIVITY

Chemical stability:	Stable
Conditions to avoid:	Dimethyl sulfoxide is hygroscopic. Protect from moisture.
Incompatible materials:	Incompatible with a very wide range of materials, including acid chlorides, strong acids, strong oxidizing agents, strong reducing agents, phosphorus halides, moisture, copper wool + trichloroacetic acid. Reacts violently with a number of materials - consult a full data sheet before use. Hygroscopic.
Hazardous decomposition products:	Oxides of carbon and sulphur
Hazardous reactions:	Dangerous reaction with organic and inorganic acid chlorides, bromides (sulphur, phosphorous, methyl), potassium or sodium hydride.

SECTION 11 TOXICOLOGICAL INFORMATION

LD ₅₀	
Oral (Rat)	14500 mg kg ⁻¹
Oral (Mammal – species unspecified):	21400 mg kg ⁻¹
Intra-peritoneal (Rat)	8200 mg kg ⁻¹
Intravenous (Mouse)	3100 mg kg ⁻¹
Oral - (Wild bird species)	100 mg kg ⁻¹
Intravenous (Dog)	2500 mg kg ⁻¹

TDLo – (Lowest published toxic dose):
Intravenous (Man) 686 mg kg⁻¹

SECTION 12 ECOLOGICAL INFORMATION

As a precaution, do not discharge into drains, waterways, sewer or environment.

Ecotoxicity: No information available
Persistence and degradability: Dimethyl sulfoxide is very difficult to biodegrade
Mobility: No data available. However, expected to be mobile in soil due to its high water solubility. Some volatilization from dry soil and surfaces may be expected.

Additional information:
Environmental fate (exposure): No information available
Bioaccumulative potential: No information available

SECTION 13 DISPOSAL CONSIDERATIONS

Disposal methods and containers: Dispose of product and containers in accordance with local authority instructions.

Special precautions for landfill or incineration: Observe precautions applicable for storage and clean up of accidental spills.

SECTION 14 TRANSPORT INFORMATION

This material is not dangerous goods under the Australian Dangerous Goods (ADG) Code and is not subject to transport regulations in Australia.

SECTION 15 REGULATORY INFORMATION

Although this material appears in the Australian Inventory of Chemical Substances (AICS), it has not been assessed by NICNAS (National Industrial Chemicals Notification and Assessment Scheme).

Dimethyl sulfoxide as presented in this context appears in Schedule 6 of Standard for the Uniform Scheduling of Medicines and Poisons (SUSMP).

SECTION 16 OTHER INFORMATION

MSDS version:	2
Date of Revision:	March 2011
Update of sections:	2, 4, 10, 15, 16

CONTACT POINT

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References:

1. FAISD Handbook, Handbook of First Aid Instructions, Safety Directions, Warning Statements, and General Safety Precautions for, Agricultural and Veterinary Chemicals, (as updated)
2. Approved Criteria For Classifying Hazardous Substances, NOHSC:1008 (2004)
3. National Code of Practice for the Preparation of Material Safety Data Sheets 2nd Edition [NOHSC:2011 (2003)]
4. AICS (Australian Inventory of Chemical Substances), Safework Australia

5. APVMA Manual of Requirements and Guidelines for Agricultural Chemicals, Version 4.1, (as updated)
6. ADI [Acceptable Daily Intake] List, Commonwealth Department of Health & Aged Care, TGA, (as updated)
7. The Australian Code for the Transport of Dangerous Goods by Road and Rail (ADG Code) 7th Edition
8. The Poisons Standard (as updated), National Drugs and Poisons Schedule Committee
9. Hazardous Substances Information System, Safework Australia (as updated)

All information contained in this Material Safety Data Sheet is as accurate and up to date as possible. Since Pharmachem cannot anticipate or control the conditions under which this information may be used, each user should review the information in the specific context of the intended application. Pharmachem will not be responsible for damages of any nature resulting from use of or reliance upon the information. No expressed or implied warranties are given other than those implied as mandatory by Commonwealth State or Territory legislation.