

SECTION 1 IDENTIFICATION OF THE MATERIAL AND SUPPLIER

GHS Product identifier: Dimethyl Sulfoxide
Other means of identification: DMSO
Recommended use of the product and restrictions on use: Solvent for pharmaceutical products
Supplier's Details: Pharmachem
Unit 6, 70 Fison Ave West
Eagle Farm QLD 4009
Telephone: (07) 3868 0333
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Contact Person: Mr Gray Boston
Emergency phone number: (07) 3630 1654

SECTION 2 HAZARDS IDENTIFICATION

Classification of Product:
This product is classified as a health hazard in accordance with the following classification criteria of the Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Third Revised Edition.

Health hazards:
Eye irritant Category 2A
Skin irritant Category 3

GHS Label elements, including precautionary statements
Pictogram:



Signal word: Warning
Hazard statements: Causes serious eye irritation.
Causes mild skin irritation
Precautionary statement(s)
Prevention: Wash skin thoroughly after handling.
Wear protective gloves/ eye protection/ face protection.
Response: If in eyes:
Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. If eye irritation persists: Get medical advice/ attention.

Other Health Hazards: None known

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

Routes of Exposure:

When used as a pharmaceutical ingredient the most common forms of exposure are expected to be skin exposure, followed by inhalation, eye contact and ingestion.

Signs and symptoms of exposure:

DMSO has shown very few toxic symptoms in humans. The most common are nausea, skin rashes and an unusual garlic-onion-oyster smell on body and breath.

Summary of Toxicology

Human – TDLo – (Lowest published toxic dose):

Intravenous (Man) 686 mg kg⁻¹

Animal Toxicity Data – LD₅₀:

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

Animal Toxicity Data Repeat Exposure:

No data available

Medical Conditions Aggravated by Exposure:

None known

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:	3
Date of Revision:	March 2016
Update of sections:	Update to GHS

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]
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)
10. Globally Harmonized System of Classification and Labelling of Chemicals (GHS), Third Revised Edition, United Nations, New York and Geneva, 2009
11. NIOSH Pocket Guide to Chemical Hazards
12. Chemical Classification and Information Database (CCID) (as updated), New Zealand Environmental Protection Authority, <http://www.epa.govt.nz/search-databases/Pages/HSNO-CCID.aspx>

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