

SECTION 1: Identification of the substance/mixture and of the company

1.1 Product identifier

- Product Name: **DMSO (Dimethyl Sulfoxide) (CH₃)₂ SO**
- Product Part Number(s): **08824, 08825, 08826, 08827, 08831**
- Other Identifiers: DMSO 99% Solvent, DMSO 90% Solvent, DMSO Roll-On

1.2 Relevant identified uses of the substance or mixture and uses advised against

- Use of the substance/preparation: For use as an extraction solvent for manufacture of pharmaceuticals, fine chemicals, and polymers.
- Uses advised against: Not approved for human use. See label cautions.

1.3 Details of the supplier of the safety data sheet

- Name of Manufacturer: Valhoma Corporation for Neogen Corporation
- Address of Manufacturer: 944 Nandino Blvd.
Lexington, Kentucky 40511
USA
- Telephone: 859/254-1221 • 800/621-8829
- Email: inform@neogen.com

1.4 Emergency telephone number

- Emergency Telephone: Chemtrec: 1 (800) 424-9300
Outside USA and Canada: +1 (703) 527-3887

SECTION 2: Hazards identification

2.1 Classification of the substance or mixture

Classification (29 CFR 1910.1200)

- Skin corrosion/irritation, Cat. 2, Eye damage/irritation, Cat. 2

Classification (WHMIS 2015 HPR)

- Skin corrosion/irritation, Cat. 2, Eye damage/irritation, Cat. 2

Additional information: For full text of Hazard statements: see Section 16.

2.2 Label elements



GHS07

- Signal Word: Warning
- Symbols: GHS07
- Hazard phrases
 - Causes skin irritation.
 - Causes serious eye damage.
- Precautionary Phrases
 - Keep container tightly closed.
 - Wash hands thoroughly after handling.
 - Wear protective gloves/protective clothing/eye protection/face protection.
 - If on skin: Wash with plenty of soap and water.
 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing.
 - If skin irritation occurs: Get medical advice/attention.
 - If eye irritation persists: Get medical advice/attention.
 - Take of contaminated clothing and wash it before reuse.

2.3 Other hazards

- Keep out of reach of children.

SECTION 3: Composition/information on ingredients

3.1 Substances

3.2 Mixtures

This product is a mixture of the substances listed below with the addition of non-hazardous materials

Chemical	Concentration	CAS No.	H-Statements	Symbols
Methane, sulfinylbis-	75-100%	67-68-5	H315, H319	GHS07

Ingredients not precisely identified are proprietary or non-hazardous. Values are not product specifications.

SECTION 4 First aid measures

4.1 Description of first aid measures

- General
In case of doubt, or when symptoms persist, seek medical attention.
If used as directed, this product is not hazardous to humans or animals, but like any other chemical, it should be treated with care, respect, and common sense.
- Contact with skin
Remove contaminated clothing.
Wash affected area with plenty of soap and water.
If skin irritation or rash occurs: Get medical advice/attention.
Contaminated clothing should be laundered before reuse.
- Contact with eyes
If substance has gotten into eyes, immediately rinse with plenty of water for at least 15 minutes.
Remove contact lenses, if present and easy to do. Continue rinsing.
Irrigate eyes thoroughly while lifting eyelids.
Seek medical advice if irritation persists.
- Ingestion
Rinse mouth with water (do not swallow).
Do not induce vomiting.
Never make an unconscious person vomit or drink fluids.
If medical advice is needed, have product container or label at hand.
- Inhalation
If breathing is difficult, remove victim to fresh air and keep comfortable for breathing.
Call a poison center or doctor/physician if you feel unwell.

4.2 Most important symptoms and effects, both acute and delayed

- The most important known symptoms are described in the labeling (see Section 2.2) and/or in Section 11.
- DMSO has shown very few toxic symptoms in humans. The most common are nausea, skin rashes, and an unusual garlic-onion-oyster smell on the body and breath.
- Inhalation: High vapor concentrations may cause headache, dizziness, and sedation.
- Eyes: Low hazard for usual industrial/commercial handling by trained personnel. Causes serious eye irritation.
- Skin: Stinging and burning of the skin as well as rashes and vesicles have been seen. A heat reaction may occur if applied to wet skin. Avoid contact with DMSO solutions containing toxic material or materials whose toxicological properties are not known. DMSO easily penetrates the skin and may enhance the rate of skin absorption of skin-permeable substances. But because of DMSO's low toxicity and its inability to carry less-permeable substances with it through the skin, it can be concluded that DMSO does not pose a significant threat by skin absorption.
- Ingestion: A low ingestion hazard.

4.3 Indication of any immediate medical attention and special treatment needed

- Treat symptomatically.

SECTION 5: Fire-fighting measures

5.1 Extinguishing media

- In case of fire: use water spray, foam, carbon dioxide, alcohol-resistant foam, or dry agent for extinction.

5.2 Special hazards arising from the substance or mixture

- Smoke from fires is toxic. Take precautions to protect personnel from exposure.
- Keep away from heat/sparks/open flames/hot surfaces. No smoking.
- See Section 10.

5.3 Advice for firefighters

- Burning dimethyl sulfoxide produces poisonous gases (sulfur oxides).
- Keep container(s) exposed to fire cool, by spraying with water.
- Wear chemical protection suit and positive-pressure breathing apparatus, rubber gloves, and rubber suit.
- Wear protective clothing as per Section 8.

5.4 Hazardous Combustion Products

Sulfur dioxide, formaldehyde, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, and bis (methylthio) methane.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

- Shut off all ignition sources.
- Use non-sparking hand tools.
- Remove contaminated clothing.
- Wear protective clothing as per Section 8.
- Wash thoroughly after dealing with spillage.

6.2 Environmental Precautions

- Do not allow to enter public sewers and watercourses.
- Avoid releasing to the environment.

6.3 Methods and material for containment and cleaning up

- Absorb spillage in inert material and shovel up.
- Place in sealable container.
- Seal containers and label them.
- Ventilate the area and wash spill site after material pick-up is complete.
- Dispose of contaminated materials and wastes in accordance with local/national/international regulations.

6.4 Reference to other sections

- See Section 7 for storage. For disposal, see Section 13.

SECTION 7: Handling and storage

7.1 Precautions for safe handling

- Do not breathe dust/mist/vapors/fumes.
- Avoid contact with skin and eyes.
- Do not eat, drink or smoke when using this product.
- Wash hands thoroughly after using this substance.

7.2 Conditions for safe storage, including any incompatibilities

- Store controlled room temperature between 20-25°C (86-77°F).
- Protect from light.
- Avoid excessive heat (104°F).
- Keep lid tightly closed when not in use.
- Keep out of reach of children.

7.3 Specific end use(s)

- For use as an extraction solvent for manufacture of pharmaceuticals, fine chemicals, and polymers.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

- There are no recommended or established controls for this product.

8.2 Exposure controls

- Eyewash bottles should be available.
- Engineering controls should be provided to prevent the need for ventilation.
- In case of mist formation use a respirator. Respirator type: organic vapor cartridge, SCBA, or SAR. If respirators are used, a program should be instituted to assure compliance with OSHA standard 29 CFR 1910.134.
- Wear protective gloves to prevent prolonged or repeated skin contact.
- Wear safety glasses with side shield, tight-fitting goggles, or a face shield approved to standard for ANSI Z87, according to the concentration and amount of dangerous substance at the specific workplace.
- Wear suitable protective clothing in accordance with good industrial hygiene and safety practices in the event of prolonged exposure to bulk quantities.

SECTION 9: Physical and chemical properties

9.1 Information on basic physical and chemical properties

- Appearance: Colorless liquid
- Odor: Odorless
- pH: 8.5 (50/50 in water)
- Melting Point/Range: 18°C/64°F
- Boiling Point/Range: 189°C/372°F
- Flashpoint: 89°C/192°F Closed Cup, 95°C/203°F Open Cup
- Evaporation Rate: 0.026 (n-butyl acetate = 1)
- Flammability: Not applicable
- Upper/Lower Flammability or Explosive Limits:
 - Lower Explosive Limit: 3.0-3.5% by volume
 - Upper Explosive Limit: 42-63% by volume
- Vapor Pressure: 0.55 mbar (0.46 mmHg) @ 20°C/68°F
- Vapor Density: 2.7
- Specific Gravity: 1.1 @ 20°C/68°F
- Solubility in water: Miscible
- Partition Coefficient (n-Octanol/Water): Not measured
- Autoignition Temperature: 300-302°C/572-575°F
- Viscosity: 2.0 mPas or cP @ 25°C/77°F
- Explosive Properties: Product does not present an explosion hazard
- Oxidizing Properties: No information available

9.2 Other information

- No information available

SECTION 10: Stability and reactivity

10.1 Reactivity

- Hazardous polymerization will not occur.

10.2 Chemical stability

- Considered stable under normal conditions.

10.3 Possibility of hazardous reactions

- No hazardous reactions known if used for its intended purpose.

10.4 Conditions to avoid

- Keep away from heat and sources of ignition.
- Prolonged heating above 150°C/302°F can cause rapid, exothermic decomposition.

10.5 Incompatible materials

- Organic and inorganic acid chlorides, strong oxidizing agents, alkali metals, hydrobromic acid, acidic solutions of alkali bromides.

SECTION 10: Stability and reactivity (continued)

10.6 Hazardous Decomposition Products

- Sulfur dioxide, formaldehyde, methyl mercaptan, dimethyl sulfide, dimethyl disulfide, and bis (methylthio) methane.

SECTION 11: Toxicological information

11.1 Information on toxicological effects

- Oral LD₅₀ (rat) = 14,500 mg/kg
- Dermal LD₅₀ (rabbit) = 5,000 mg/kg
- Inhalation (gas) LD₅₀ (rat) = 40,250 ppm
- Contact with skin
Causes skin irritation.
- Contact with eyes
Causes serious eye irritation.
- Ingestion
Product is not toxic, but may cause irritation of the throat and/or nausea in sensitive individuals.
- Inhalation
High vapor concentrations may cause headache, dizziness, and sedation.
- Carcinogenicity
Not listed in the National Toxicology Program (NTP) 13th Report on Carcinogens.
Not found to be a potential carcinogen in the International Agency for Research on Cancer (IARC) Monographs, Volumes 1-112.
Not listed in OSHA standard 1910.1003 Carcinogens.
- Mutagenicity
No evidence of mutagenic effects.
- Teratogenicity
No evidence of teratogenic effects.

SECTION 12: Ecological information

12.1 Toxicity

Methane, sulfinylbis-

Toxicity to fish

LC₅₀ – Pimephales promelas (Fathead minnow) – 34,000 mg/L-96h

Toxicity to daphnia and other aquatic invertebrates

EC₅₀ – Daphnia magna (water flea) – 25,000 mg/L-48h

Toxicity to algae

ErC₅₀ – Skeletonema costatum – 12,350 mg/L-96h

12.1 Persistence and degradability

- No information available

12.2 Bioaccumulation Potential

- No information available

12.3 Mobility in soil

- No information available

12.5 Other Adverse Effects

- Biological Oxygen Demand:
- Theoretical Oxygen Demand at 10ppm: 123 mg oxygen
- Chemical Oxygen Demand at 10ppm: 107 mg/L
- Biological Oxygen Demand-5 at 10ppm: <1.0 mg/L

SECTION 13: Disposal considerations

Waste treatment methods

- Disposal should be in accordance with local, state, national, or international regulations.
- Do not reuse empty containers.

SECTION 14: Transport information

- 14.1 UN Number
- Not classified as hazardous for transport
- 14.2 UN Proper Shipping Name
- Not applicable
- 14.3 Transport hazard class(es)
- Not applicable
- 14.4 Packing group
- Not applicable
- 14.5 Environmental hazards
- Not Classified
- 14.6 Special precautions for user
- Not Classified
- 14.7 Domestic Surface Transport (US DOT)
- Proper Shipping Name: Combustible liquid, n.o.s (Dimethyl sulfoxide)
 - DOT UN No.: NA1993
 - DOT Hazard Class: 3
 - DOT Packing Group: III
 - Additional Information: Not regulated <119 gallons
- 14.8 International Road/Rail (ADR/RID)
- Proper Shipping Name: Not applicable
 - ADR UN No.: Not applicable
 - ADR Hazard Class: Not applicable
 - ADR Packing Group: Not applicable
 - Tunnel Code: Not applicable
- 14.9 Ocean/Sea (IMO/IMDG)
- Proper Shipping Name: Not applicable
 - IMDG UN No.: Not applicable
 - IMDG Hazard Class: Not applicable
 - IMDG Packing Group: Not applicable
- 14.10 Air (ICAO/IATA)
- Proper Shipping Name: Not applicable
 - ICAO UN No.: Not applicable
 - ICAO Hazard Class: Not applicable
 - ICAO Packing Group: Not applicable

SECTION 15: Regulatory information

- 15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture
- This product has been classified in accordance with the hazard criteria of the Global Harmonization Standard (GHS) as adopted by the Hazardous Products Regulations (HPR) and the OSHA Hazard Communication Standard 29 CFR 1910.1200. United States Regulatory Information
- 15.2 United States Regulatory Information
- SARA 302 Components
No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
- SARA 313 Components
The 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.

SECTION 15: Regulatory information (continued)SARA 311/312

Acute Health Hazard	Yes
Chronic Health Hazard	No
Fire Hazard	Yes
Sudden Release of Pressure Hazard	No
Reactive Hazard	No

Toxic Substance Control Act (TSCA)

All components of this material are either listed or exempt from listing on the TSCA Inventory.

State Right-to-Know

New Jersey

Methane, sulfinylbis-, CAS No. 67-68-5

15.3 Canadian Regulatory Information

- WHMIS Classification: B3 D2B
- Inventory Status
 - Domestic Substances List (DSL) Listed
 - Non-Domestic Substances List (NDSL) Not listed

SECTION 16: Other information

Document Number: SDS-9003, DMSO

Date of Preparation: March 11, 2016

Revision: Rev. 1

Replaces: November 4, 2015

Text not given with phrase codes where they are used elsewhere in this safety data sheet: H315: Causes skin irritation. H319: Causes serious eye irritation.

This document is believed to be correct, but does not purport to be all inclusive and shall be used only as a guide. Neogen Corporation shall not be held liable for any damage resulting from handling or from contact with the above product. These suggestions should not be confused with state, municipal or insurance requirements, and constitute NO WARRANTY.