



DIMETHYL SULFOXIDE-D6 (D, 99.9%)

Safety Data Sheet

according to Regulation (EC) No. 1907/2006 (REACH) with its amendment Regulation (EU) 2015/830 and according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Date of issue: 03/12/2013

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Version: 7.0

DLM-10

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

1.1. Product identifier

Product form	: Substance
Substance name	: DIMETHYL SULFOXIDE-D6 (D, 99.9%)
EC No	: 218-617-0
CAS No	: 2206-27-1
REACH registration No	: 01-2119431362-50
Product code	: DLM-10
Formula	: CD3SOCD3
Synonyms	: DMSO / Methyl sulfoxide
Other means of identification	: Also applicable to: DLM-10-ED (D, 99.9%) "EXTRA DRY" DLM-10RG (D, 99.9%) DLM-10RG-99 (D, 99%) "REAGENT GRADE" DLM-10-99.8 (D, 99.8%)

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

1.2.1. Relevant identified uses

Main use category	: Professional use
Industrial/Professional use spec	: For professional use only

1.2.2. Uses advised against

No additional information available

1.3. Details of the supplier of the safety data sheet

Cambridge Isotope Laboratories, Inc.
50 Frontage Road
Andover, MA 01810
USA

USA: 1-800-322-1174 Int: 1-978-749-8000
cilsales@isotope.com www.isotope.com

Emergency telephone number

Emergency numbers:

Chemtrec: 1-800-424-9300 (24 hours)
International: 1-703-741-5970 (24 hours)

SECTION 2: Hazards identification

2.1. Classification of the substance or mixture

Classification according to Regulation (EC) No. 1272/2008 [CLP]

Not classified

Classification according to Directive 67/548/EEC [DSD] or 1999/45/EC [DPD]

Not classified

GHS-US classification

Flam. Liq. 4 H227

Full text of H statements : see section 16

Adverse physicochemical, human health and environmental effects

Eyes, Skin.

2.2. Label elements

Labeling according to Regulation (EC) No. 1272/2008 [CLP]

Signal word (CLP) : Warning

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GHS-US labeling

Signal word (GHS-US)	: Warning
Hazard statements (GHS-US)	: H227 - Combustible liquid
Precautionary statements (GHS-US)	: P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking P280 - Wear protective clothing, impervious gloves P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO ₂), dry extinguishing powder to extinguish P403+P235 - Store in a well-ventilated place. Keep cool P501 - Dispose of contents/container to hazardous or special waste collection point, in accordance with local, regional, national and/or international regulation

2.3. Other hazards

Other hazards not contributing to the classification : Rapidly absorbed through skin.

SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
DIMETHYL SULFOXIDE-D6 (D, 99%)	(CAS No) 2206-27-1 (EC No) 218-617-0 (REACH-no) 01-2119431362-50	100	Not classified

Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
DIMETHYL SULFOXIDE-D6 (D, 99%)	(CAS No) 2206-27-1 (EC No) 218-617-0 (REACH-no) 01-2119431362-50	100	Not classified

Full text of R- and H- phrases: see section 16

Name	Product identifier	%	GHS-US classification
DIMETHYL SULFOXIDE-D6 (D, 99%) (Main constituent)	(CAS No) 2206-27-1	100	Flam. Liq. 4, H227

Full text of H-phrases: see section 16

3.2. Mixtures

Not applicable

SECTION 4: First aid measures

4.1. Description of first aid measures

First-aid measures general	: If you feel unwell, seek medical advice (show the label where possible). Evacuate danger area.
First-aid measures after inhalation	: When symptoms occur: go into open air and ventilate suspected area. If not breathing, give artificial respiration. Get medical advice/attention.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention.

4.2. Most important symptoms and effects, both acute and delayed

Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. May cause moderate irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

4.3. Indication of any immediate medical attention and special treatment needed

No additional information available

SECTION 5: Firefighting measures

5.1. Extinguishing media

Suitable extinguishing media : Water spray, dry chemical powder, alcohol-resistant foam, carbon dioxide (CO₂).

5.2. Special hazards arising from the substance or mixture

No additional information available

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5.3. Advice for firefighters

- Firefighting instructions : Fight fire with normal precautions from a reasonable distance. Wear a self contained breathing apparatus. Do not enter fire area without proper protective equipment, including respiratory protection.
- Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection. Wear recommended personal protective equipment.
- Other information : Use water spray to cool exposed surfaces.

SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

- Emergency procedures : Avoid breathing vapors, mist or gas. Remove all sources of ignition. Beware of vapours accumulating to form explosive concentrations. Vapours can accumulate in low areas.

6.1.2. For emergency responders

- Protective equipment : Do not attempt to take action without suitable protective equipment. For further information refer to section 8: "Exposure controls/personal protection".

6.2. Environmental precautions

Prevent entry to sewers and public waters. Do not allow to enter drains or water courses. Avoid release to the environment.

6.3. Methods and material for containment and cleaning up

- For containment : Clean up any spills as soon as possible, using an absorbent material to collect it. Small quantities of liquid spill: take up in non-combustible absorbent material and shovel into container for disposal. For large spills, confine the spill in a dike and charge it with wet sand or earth for subsequent safe disposal.
- Methods for cleaning up : This material and its container must be disposed of in a safe way, and as per local legislation.
- Other information : Dispose of materials or solid residues at an authorized site.

6.4. Reference to other sections

For further information refer to section 13.

SECTION 7: Handling and storage

7.1. Precautions for safe handling

- Additional hazards when processed : Avoid all eye and skin contact and do not breathe vapor and mist. Keep away from sources of ignition - No smoking. Take precautionary measures to prevent the formation of static electricity.
- Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapor concentrations.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.

7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store in a well-ventilated place. Keep container tightly closed.
- Storage conditions : Store at room temperature away from light and moisture.

7.3. Specific end use(s)

No additional information available

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DIMETHYL SULFOXIDE-D6 (D, 99%) (2206-27-1)	
Italy - Portugal - USA ACGIH	Remark (ACGIH) TWA 250 ppm USA. Workplace Environmental Exposure Levels (WEEL)

8.2. Exposure controls

- Appropriate engineering controls : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work.
- Personal protective equipment : Impervious gloves. Safety glasses. Respiratory protection of the dependent type. Protective clothing.



- Materials for protective clothing : Wear suitable protective clothing and impervious gloves.
- Hand protection : Wear suitable protective clothing and impervious gloves.
- Eye protection : Wear eye protection. Chemical goggles or face shield with safety glasses.

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Skin and body protection	: Wear suitable protective clothing, gloves and eye/face protection.
Respiratory protection	: In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator.
Environmental exposure controls	: Avoid release to the environment.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Clear. Liquid.
Molecular mass	: 84.17 g/mol (Labeled)
Color	: Colorless - Very pale yellow.
Odor	: Sulphurous.
Odor threshold	: No data available
pH	: No data available
Relative evaporation rate (butyl acetate=1)	: No data available
Melting point	: 16 - 19 °C (61 - 66 °F)
Freezing point	: No data available
Boiling point	: 189 °C (372 °F)
Flash point	: 87 °C (189 °F) - closed cup
Auto-ignition temperature	: 301 °C (574 °F)
Decomposition temperature	: > 190 °C (> 374 °F)
Flammability (solid, gas)	: No data available
Vapor pressure	: 0.55 hPa (0.41 mmHg) at 20 °C (68 °F)
Relative vapor density at 20 °C	: 2.7 (Air = 1.0)
Relative density	: No data available
Specific gravity / density	: 1.19 g/ml at 20 °C (68 °F) (Labeled)
Solubility	: Water: Completely miscible
Log Pow	: -2.03
Log Kow	: No data available
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosive properties	: No data available
Oxidizing properties	: No data available
Explosion limits	: 3.5 - 42 %

9.2. Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

No additional information available

10.2. Chemical stability

Stable if stored under recommended conditions.

10.3. Possibility of hazardous reactions

No additional information available

10.4. Conditions to avoid

Moisture. Heat. Open flame. Sparks.

10.5. Incompatible materials

Acid chlorides. Phosphorus halides. Strong acids. Strong oxidizing agents. Strong reducing agents.

10.6. Hazardous decomposition products

Calcium oxide. Sulphur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity : Not classified

DIMETHYL SULFOXIDE-D6 (D, 99%) (2206-27-1)

LD50 oral rat	14500 mg/kg
LD50 dermal rabbit	> 5000 mg/kg

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LC50 inhalation rat (ppm)	40250 ppm 4h
ATE CLP (oral)	14500.000 mg/kg body weight

Skin corrosion/irritation	: Mild skin irritation
Serious eye damage/irritation	: Eyes Rabbit Mild eye irritation
Respiratory or skin sensitization	: Not available
Germ cell mutagenicity	: Mouse Lymphocyte Cytogenetic analysis Mutation in mammalian somatic cells. Rat Cytogenetic analysis. Mouse DNA damage
Carcinogenicity	: 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.
Reproductive toxicity	: 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. Developmental Toxicity - Mouse - Intraperitoneal Effects on Embryo or Fetus: Fetotoxicity (except death, e.g. stunted fetus). Specific Developmental Abnormalities: Musculoskeletal system.
Specific target organ toxicity – single exposure	: Not classified
Specific target organ toxicity – repeated exposure	: Not classified
Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Exposure to large amounts can cause: redness of skin, Itching, burning, sedation, Headache, Nausea, Dizziness. Eyes - Eye disease - Based on Human Evidence. This information is based on our current knowledge and is intended to describe the product for the purposes of health, safety and environmental requirements only. It should not therefore be construed as guaranteeing any specific property of the product.
Symptoms/injuries after inhalation	: May be harmful if inhaled. May cause respiratory irritation.
Symptoms/injuries after skin contact	: May be harmful in contact with skin. May cause moderate irritation.
Symptoms/injuries after eye contact	: May cause eye irritation.
Symptoms/injuries after ingestion	: May be harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

Ecology - general	: The product is not considered harmful to aquatic organisms or to cause long-term adverse effects in the environment.
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DIMETHYL SULFOXIDE-D6 (D, 99%) (2206-27-1)	
LC50 fish 1	34000 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 Daphnia 1	24600 mg/l Daphnia magna (Water flea) - 48 h
LC50 fish 2	35000 mg/l Oncorhynchus mykiss (rainbow trout) - 96 h
LC50 other aquatic organisms 2	17000 mg/l Pseudokirchneriella subcapitata (green algae) - 72 h
ErC50 (algae)	400000 mg/l Lepomis macrochirus (Bluegill) -96 h

12.2. Persistence and degradability

DIMETHYL SULFOXIDE-D6 (D, 99%) (2206-27-1)	
Persistence and degradability	Not available.
Biodegradation	31 % According to the results of tests of biodegradability this product is not readily biodegradable.

12.3. Bioaccumulative potential

DIMETHYL SULFOXIDE-D6 (D, 99%) (2206-27-1)	
Log Pow	-2.03

12.4. Mobility in soil

No additional information available

12.5. Results of PBT and vPvB assessment

No additional information available

12.6. Other adverse effects

Other adverse effects : Stability in water - 0.12 - 1.2 h at 30 °C Remarks: Hydrolyses readily.

SECTION 13: Disposal considerations

13.1. Waste treatment methods

- Regional legislation (waste) : Waste materials should be disposed of under conditions which meet Federal, State, and Local environmental control regulations.
- Product/Packaging disposal recommendations: : Offer surplus and non-recyclable solutions to a licensed disposal company. Contact a licensed professional waste disposal service to dispose of this material.
- Ecology - waste materials : Dispose of as unused product.

SECTION 14: Transport information

In accordance with ADR / RID / IMDG / IATA / ADN

14.1. UN number

- UN-No.(DOT) : NA1993
- DOT NA no. : NA1993

14.2. UN proper shipping name

- Proper Shipping Name (DOT) : Combustible liquid, n.o.s.
- DOT Symbols : D - Proper shipping name for domestic use only, or to and from Canada,G - Identifies PSN requiring a technical name
- Packing group (DOT) : III - Minor Danger
- DOT Special Provisions (49 CFR 172.102) : IB3 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1 and 31HA2, 31HB2, 31HN2, 31HD2 and 31HH2). Additional Requirement: Only liquids with a vapor pressure less than or equal to 110 kPa at 50 C (1.1 bar at 122 F), or 130 kPa at 55 C (1.3 bar at 131 F) are authorized, except for UN2672 (also see Special Provision IP8 in Table 2 for UN2672).
T1 - 1.5 178.274(d)(2) Normal..... 178.275(d)(2)
T4 - 2.65 178.274(d)(2) Normal..... 178.275(d)(3)
TP1 - The maximum degree of filling must not exceed the degree of filling determined by the following: Degree of filling = $97 / 1 + a (tr - tf)$ Where: tr is the maximum mean bulk temperature during transport, and tf is the temperature in degrees celsius of the liquid during filling.
- DOT Packaging Exceptions (49 CFR 173.xxx) : 150
- DOT Packaging Non Bulk (49 CFR 173.xxx) : 203
- DOT Packaging Bulk (49 CFR 173.xxx) : 241
- Marine pollutant : No

14.3. Additional information

- Other information : No supplementary information available.
- Special transport precautions : IMDG/IATA: NOT DANGEROUS GOODS.

Overland transport

No additional information available

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Transport by sea

DOT Vessel Stowage Location : A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 60 L
(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75) : 220 L

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

Special transport precautions : IMDG/IATA: NOT DANGEROUS GOODS.

14.6. Transport in bulk according to Annex II of MARPOL 73/78 and the IBC Code

Not applicable

SECTION 15: Regulatory information

15.1. US Federal regulations

DIMETHYL SULFOXIDE-D6 (D, 99%) (2206-27-1)

SARA Section 302 Threshold Planning Quantity (TPQ)	SARA 302: No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.
SARA Section 311/312 Hazard Classes	Fire hazard Delayed (chronic) health hazard
SARA Section 313 - Emission Reporting	Not subject to reporting requirements of the United States SARA Section 313

15.2. International regulations

CANADA

DIMETHYL SULFOXIDE-D6 (D, 99%) (2206-27-1)

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

DIMETHYL SULFOXIDE-D6 (D, 99%)(2206-27-1)

U.S. - California - Proposition 65 - Carcinogens List	No
U.S. - California - Proposition 65 - Developmental Toxicity	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - New Jersey - Right to Know Hazardous Substance List U.S. - Pennsylvania - RTK (Right to Know) List

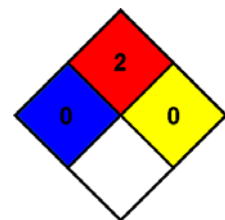
SECTION 16: Other information

Other information : This product is not radioactive. The data given for this product are those of the corresponding unlabeled compound, unless specifically indicated otherwise. Health and safety data for labeled compounds are generally not available, but are assumed to be similar or identical to the corresponding unlabeled compound.

NFPA health hazard : 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

NFPA fire hazard : 2 - Materials that must be moderately heated or exposed to relatively high ambient temperatures before ignition can occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even under fire conditions.



HMIS III Rating

Health : 1 Slight Hazard - Irritation or minor reversible injury possible

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Flammability : 2 Moderate Hazard

Physical : 0 Minimal Hazard

CIL Multi-Solvent Mixture SDS

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