



DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations
Issue date: 6/2/2011 Revision date: 7/19/2023 Supersedes: 3/21/2023 Version: 7.2

SECTION 1: Identification

1.1. Identification

Product form	: Mixture
Product name	: DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS
CAS-No.	: 67-68-5
Product code	: DLM-10TA
Synonyms	: DMSO / Methyl sulfoxide

1.2. Recommended use and restrictions on use

No additional information available

1.3. Supplier

Cambridge Isotope Laboratories, Inc.
50 Frontage Rd
01810
ANDOVER, MA, 01810
USA
T 1-800-322-1174
cilsales@isotope.com - www.isotope.com

1.4. Emergency telephone number

Emergency number : 1-703-741-5970
Chemtrec 1-800-424-9300 24 hours

SECTION 2: Hazard(s) identification

2.1. Classification of the substance or mixture

GHS US classification

Flammable liquids Category 4 H227 Combustible liquid
Full text of H statements : see section 16

2.2. GHS Label elements, including precautionary statements

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, sparks, open flames and other ignition sources. No smoking. heat, hot surfaces, open flames, sparks
P280 - Wear eye protection, face protection, protective clothing, protective gloves.
P370+P378 - In case of fire: Use Alcohol resistant foam, Carbon dioxide, Dry chemical, Water spray to extinguish.
P403+P235 - Store in a well-ventilated place. Keep cool.
P501 - Dispose of contents/container to Comply with applicable regulations.

2.3. Other hazards which do not result in classification

Other hazards which do not result in classification : Rapidly absorbed through skin.

2.4. Unknown acute toxicity (GHS US)

Not applicable

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

SECTION 3: Composition/Information on ingredients

3.1. Substances

Not applicable

3.2. Mixtures

Name	Product identifier	%	GHS US classification
DIMETHYL SULFOXIDE-D6 (D, 99.9%)	CAS-No.: 2206-27-1	99.97	Flam. Liq. 4, H227
TETRAMETHYLSILANE 99.9%	CAS-No.: 75-76-3	0.03	Flam. Liq. 1, H224

Full text of hazard classes and H-statements : see section 16

SECTION 4: First-aid measures

4.1. Description of first aid measures

First-aid measures general	: Consult a physician. Show this safety data sheet to the doctor in attendance. Move out of dangerous area.
First-aid measures after inhalation	: If breathed in, move person to fresh air. If not breathing, give artificial respiration. Consult a physician.
First-aid measures after skin contact	: Wash with soap and plenty of water. Consult a physician.
First-aid measures after eye contact	: Flush eyes with water as a precaution.
First-aid measures after ingestion	: Do NOT induce vomiting. Never give anything by mouth to an unconscious person. Rinse mouth with water. Consult a physician.

4.2. Most important symptoms and effects (acute and delayed)

Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: Contact may cause eye irritation.
Symptoms/effects after ingestion	: May be harmful if swallowed.

4.3. Immediate medical attention and special treatment, if necessary

No additional information available

SECTION 5: Fire-fighting measures

5.1. Suitable (and unsuitable) extinguishing media

Suitable extinguishing media : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Specific hazards arising from the chemical

Fire hazard : Combustible liquid.
Hazardous decomposition products in case of fire : Carbon oxides (CO, CO₂). Sulphur oxides.

5.3. Special protective equipment and precautions for fire-fighters

Firefighting instructions : Wear self contained breathing apparatus for fire fighting if necessary.
Protection during firefighting : Do not enter fire area without proper protective equipment, including respiratory protection.
Other information : Use water spray to cool unopened containers.

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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

No additional information available

6.2. Environmental precautions

Prevent entry to sewers and public waters.

6.3. Methods and material for containment and cleaning up

For containment : Keep in suitable, closed containers for disposal.
Methods for cleaning up : 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.

6.4. Reference to other sections

No additional information available

SECTION 7: Handling and storage

7.1. Precautions for safe handling

Additional hazards when processed : Avoid inhalation of vapour or mist. Keep away from sources of ignition - No smoking. Take measures to prevent the build up of electrostatic charge.
Hygiene measures : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

7.2. Conditions for safe storage, including any incompatibilities

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

SECTION 8: Exposure controls/personal protection

8.1. Control parameters

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS (67-68-5)

USA - ACGIH - Occupational Exposure Limits

ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.
-------------------------	--

DIMETHYL SULFOXIDE-D6 (D, 99.9%) (2206-27-1)

USA - ACGIH - Occupational Exposure Limits

Remark (ACGIH)	TWA 250 ppm USA. Workplace Environmental Exposure Levels (WEEL)
ACGIH chemical category	No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

TETRAMETHYLSILANE 99.9% (75-76-3)

USA - ACGIH - Occupational Exposure Limits

ACGIH chemical category

No component of this product present at levels greater than or equal to 0.1% is identifiable as a carcinogen or potential carcinogen by ACGIH.

8.2. Appropriate engineering controls

Appropriate engineering controls : Handle in accordance with good industrial hygiene and safety practice. Wash hands before breaks and at the end of workday.

8.3. Individual protection measures/Personal protective equipment

Personal protective equipment:

Safety glasses. Gloves. Respiratory protection of the dependent type. Protective clothing.

Materials for protective clothing:

Wear suitable protective clothing and gloves

Hand protection:

Wear suitable protective clothing and gloves

Eye protection:

Wear safety glasses with side shields (or goggles) and a face shield.

Skin and body protection:

Choose body protection according to the amount and concentration of the dangerous substance at the work place.

Respiratory protection:

When appropriate, use NIOSH/CEN approved respirator.

Personal protective equipment symbol(s):



SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state	: Liquid
Appearance	: Liquid, clear.
Color	: Colorless - Very pale yellow
Odor	: sulphurous
Odor threshold	: No data available
pH	: No data available
Melting point	: 18.4 °C (65.1 °F)
Freezing point	: No data available
Boiling point	: 189 °C (372 °F) at 1,013 hPa (760 mmHg)
Flash point	: 87 °C (189 °F) - closed cup
Relative evaporation rate (butyl acetate=1)	: No data available
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

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Density	: 1.1 g/ml at 20 °C (68 °F)
Molecular mass	: 84.17 g/mol (Labeled)
Solubility	: No data available
Partition coefficient n-octanol/water (Log Pow)	: -2.03
Auto-ignition temperature	: 301 °C (574 °F)
Decomposition temperature	: > 190 °C (> 374 °F)
Viscosity, kinematic	: No data available
Viscosity, dynamic	: No data available
Explosion limits	: 3.5 – 42 % (V)
Explosive properties	: No data available
Oxidizing properties	: No data available

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

Exposure to moisture. Heat, flames and sparks.

10.5. Incompatible materials

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

10.6. Hazardous decomposition products

carbon oxides. Sulphur oxides.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

Acute toxicity (oral)	: Not classified
Acute toxicity (dermal)	: Not classified
Acute toxicity (inhalation)	: Not classified

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS (67-68-5)

LD50 oral rat	14500 mg/kg
LD50 dermal rabbit	> 5000 mg/kg
LC50 Inhalation - Rat [ppm]	40250 ppm 4h
ATE US (oral)	14500 mg/kg body weight

DIMETHYL SULFOXIDE-D6 (D, 99.9%) (2206-27-1)

LD50 oral rat	14500 mg/kg
---------------	-------------

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

DIMETHYL SULFOXIDE-D6 (D, 99.9%) (2206-27-1)	
LD50 dermal rabbit	> 5000 mg/kg
LC50 Inhalation - Rat [ppm]	40250 ppm 4h
ATE US (oral)	14500 mg/kg body weight
TETRAMETHYLSILANE 99.9% (75-76-3)	
LD50 oral rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 401 (Acute Oral Toxicity)
LD50 dermal rat	> 2000 mg/kg body weight Animal: rat, Guideline: OECD Guideline 402 (Acute Dermal Toxicity), Guideline: other:
LC50 Inhalation - Rat	> 21.3 mg/l air Animal: rat, Guideline: OECD Guideline 403 (Acute Inhalation Toxicity), Guideline: other:

Skin corrosion/irritation	: Not classified
Serious eye damage/irritation	: Not classified
Respiratory or skin sensitization	: Not classified
Germ cell mutagenicity	: Not classified
Carcinogenicity	: Not classified
Reproductive toxicity	: Not classified
STOT-single exposure	: Not classified
STOT-repeated exposure	: Not classified
Aspiration hazard	: Not classified
Viscosity, kinematic	: No data available
Symptoms/effects after inhalation	: May be harmful if inhaled. May cause respiratory tract irritation.
Symptoms/effects after skin contact	: May be harmful if absorbed through skin. May cause skin irritation.
Symptoms/effects after eye contact	: Contact may cause eye irritation.
Symptoms/effects 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.

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS (67-68-5)	
LC50 - Fish [1]	34000 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [1]	27500 mg/l Daphnia pulex (Water flea) -
ErC50 algae	> 400000 mg/l Lepomis macrochirus (Bluegill) - 96 h

DIMETHYL SULFOXIDE-D6 (D, 99.9%) (2206-27-1)	
LC50 - Fish [1]	34000 mg/l Pimephales promelas (fathead minnow) - 96 h
EC50 - Crustacea [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

TETRAMETHYLSILANE 99.9% (75-76-3)	
LC50 - Fish [1]	1.9 mg/l Test organisms (species): Oncorhynchus mykiss (previous name: Salmo gairdneri)
EC50 - Crustacea [1]	> 103 mg/l Test organisms (species): Daphnia magna

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

TETRAMETHYLSILANE 99.9% (75-76-3)

EC50 72h - Algae [1]	> 0.0079 mg/l Test organisms (species): Desmodesmus subspicatus (previous name: Scenedesmus subspicatus)
----------------------	--

12.2. Persistence and degradability

DIMETHYL SULFOXIDE-D6 (D, 99.9%) (2206-27-1)

Persistence and degradability	Not available.
Biodegradation	31 % According to the results of tests of biodegradability this product is not readily biodegradable.

TETRAMETHYLSILANE 99.9% (75-76-3)

Not rapidly degradable

12.3. Bioaccumulative potential

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS (67-68-5)

Partition coefficient n-octanol/water (Log Pow)	-2.03
---	-------

DIMETHYL SULFOXIDE-D6 (D, 99.9%) (2206-27-1)

Partition coefficient n-octanol/water (Log Pow)	-2.03
---	-------

TETRAMETHYLSILANE 99.9% (75-76-3)

Partition coefficient n-octanol/water (Log Pow)	3.24 Source: ChemIDplus
---	-------------------------

12.4. Mobility in soil

No additional information available

12.5. Other adverse effects

Other adverse effects : Avoid release to the environment. Disposal must be done according to official regulations.

SECTION 13: Disposal considerations

13.1. Disposal 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	: Dispose in a safe manner in accordance with local/national regulations.
Ecology - waste materials	: Dispose of as unused product.

SECTION 14: Transport information

In accordance with DOT / TDG / IMDG / IATA

14.1. UN number

DOT NA No	: NA1993
UN-No. (TDG)	: Not applicable
UN-No. (IMDG)	: Not applicable
UN-No. (IATA)	: Not applicable

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Combustible liquid, n.o.s.
Proper Shipping Name (TDG)	: Not applicable
Proper Shipping Name (IMDG)	: Not applicable
Proper Shipping Name (IATA)	: Not applicable

14.3. Transport hazard class(es)

DOT

Transport hazard class(es) (DOT) : Combustible liquid

TDG

Transport hazard class(es) (TDG) : Not applicable

IMDG

Transport hazard class(es) (IMDG) : Not applicable

IATA

Transport hazard class(es) (IATA) : Not applicable

14.4. Packing group

Packing group (DOT)	: III
Packing group (TDG)	: Not applicable
Packing group (IMDG)	: Not applicable
Packing group (IATA)	: Not applicable

14.5. Environmental hazards

Other information : No supplementary information available.

14.6. Special precautions for user

DOT

UN-No.(DOT)	: NA1993
DOT Special Provisions (49 CFR 172.102)	: 148 - Except for transportation by aircraft, when transported as a limited quantity or a consumer commodity, the maximum net capacity specified in §173.150(b)(2) of this subchapter for inner packaging may be increased to 5 L (1.3 gallons). 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) 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
DOT Quantity Limitations Passenger aircraft/rail (49 CFR 173.27)	: 60 L
DOT Quantity Limitations Cargo aircraft only (49 CFR 175.75)	: 220 L
DOT Vessel Stowage Location	: A - The material may be stowed "on deck" or "under deck" on a cargo vessel and on a passenger vessel.

TDG

No data available

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

IMDG

No data available

IATA

No data available

14.7. 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, 99.9%) +1% V/V TMS (67-68-5)

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

Commercial status of components according to the United States Environmental Protection Agency's Toxic Substances Control Act (TSCA):

Name	CAS-No.	Listing	Commercial status	Flags
DIMETHYL SULFOXIDE-D6 (D, 99.9%)	2206-27-1	Not present	-	
TETRAMETHYLSILANE 99.9%	75-76-3	Not present	-	

DIMETHYL SULFOXIDE-D6 (D, 99.9%) (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

TETRAMETHYLSILANE 99.9% (75-76-3)

Not subject to reporting requirements of the United States SARA Section 313

SARA Section 311/312 Hazard Classes	Fire hazard
-------------------------------------	-------------

15.2. International regulations

CANADA

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS (67-68-5)

Listed on the Canadian DSL (Domestic Substances List)

DIMETHYL SULFOXIDE-D6 (D, 99.9%) (2206-27-1)

Listed on the Canadian DSL (Domestic Substances List)

TETRAMETHYLSILANE 99.9% (75-76-3)

Listed on the Canadian DSL (Domestic Substances List)

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

EU-Regulations

No additional information available

National regulations

TETRAMETHYLSILANE 99.9% (75-76-3)

CAUTION: This material is supplied for research and development purposes subject to the R&D exemption under TSCA, 40 CFR 720.36, and must meet the requirements of the exemption, including supervision by a "technically qualified individual" as defined by 40 CFR 720.3(ee). The use of this material for "commercial purposes" as defined by 40 CFR 720.3(r) is not permitted in the United States.

Listed on INSQ (Mexican National Inventory of Chemical Substances)

Listed on TECI (Thailand Existing Chemicals Inventory)

15.3. US State regulations

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS (67-68-5)

State or local regulations

U.S. - Pennsylvania - RTK (Right to Know) List

U.S. - New Jersey - Right to Know Hazardous Substance List

Component	State or local regulations
TETRAMETHYLSILANE 99.9%(75-76-3)	U.S. - New Jersey - Right to Know Hazardous Substance List

SECTION 16: Other information

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

Revision date

: 07/19/2023

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.

Full text of H-phrases

H224	Extremely flammable liquid and vapor
H227	Combustible liquid

NFPA health hazard

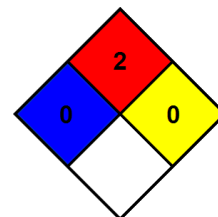
: 0 - Materials that, under emergency conditions, would offer no hazard beyond that of ordinary combustible materials.

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.



Hazard Rating

Health

: 1 Slight Hazard - Irritation or minor reversible injury possible

Flammability

: 2 Moderate Hazard - Materials which must be moderately heated or exposed to high ambient temperatures before ignition will occur. Includes liquids having a flash point at or above 100 F but below 200 F. (Classes II IIIA)

Physical

: 0 Minimal Hazard - Materials that are normally stable, even under fire conditions, and will NOT react with water, polymerize, decompose, condense, or self-react. Non-Explosives.

Safety Data Sheet (SDS), USA

DIMETHYL SULFOXIDE-D6 (D, 99.9%) +1% V/V TMS

Safety Data Sheet

according to Federal Register / Vol. 77, No. 58 / Monday, March 26, 2012 / Rules and Regulations

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.