



# DIMETHYL SULFATE-D6 (D, 99.5%)

## 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: 11/03/2011

Revision date: 24/07/2019

Supersedes: 24/05/2018

Version: 4.1

DLM-196

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

### 1.1. Product identifier

Product form : Substance  
Substance name : DIMETHYL SULFATE-D6 (D, 99.5%)  
EC Index-No. : 016-023-00-4 (Unlabeled)  
EC-No. : 201-058-1 (Unlabeled)  
CAS-No. : 15199-43-6  
Product code : DLM-196  
Formula : (CD3O)2SO2

### 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](mailto:cilsales@isotope.com) [www.isotope.com](http://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]

Acute Tox. 3 (Oral) H301  
Acute Tox. 1 (Inhalation:dust,mist) H330  
Skin Corr. 1B H314  
Eye Dam. 1 H318  
Skin Sens. 1 H317  
Muta. 2 H341  
Carc. 1B H350

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

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

Carc.Cat.1; R45  
Carc.Cat.2; R49  
C; R35  
N; R51/53  
T; R25  
T+; R26  
Xi; R41  
R43  
Muta.Cat.3; R68

Full text of R-phrases: see section 16

#### GHS-US classification

Flam. Liq. 4 H227  
Acute Tox. 3 (Oral) H301

# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

Acute Tox. 1 (Inhalation:dust,mist)	H330
Skin Corr. 1A	H314
Eye Dam. 1	H318
Skin Sens. 1	H317
Muta. 2	H341
Carc. 1B	H350
Aquatic Acute 2	H401

Full text of H statements : see section 16

### Adverse physicochemical, human health and environmental effects

Heart, Lungs, Liver, Kidney, Eyes, Brain.

## 2.2. Label elements

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

Hazard pictograms (CLP)



Signal word (CLP)

: Danger

Hazard statements (CLP)

: H301 - Toxic if swallowed  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H330 - Fatal if inhaled  
H341 - Suspected of causing genetic defects (in contact with skin, if inhaled, if swallowed)  
H350 - May cause cancer (in contact with skin, if inhaled, if swallowed)

Precautionary statements (CLP)

: P260 - Do not breathe fume, mist, spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P271 - Use only outdoors or in a well-ventilated area.  
P272 - Contaminated work clothing should not be allowed out of the workplace.  
P280 - Wear eye protection, face protection, protective clothing, protective gloves.  
P284 - [In case of inadequate ventilation] wear Self contained breathing apparatus.  
P301+P310 - IF SWALLOWED: Immediately call a doctor, a POISON CENTER.

### GHS-US labeling

Hazard pictograms (GHS-US)



Signal word (GHS-US)

: Danger

Hazard statements (GHS-US)

: H227 - Combustible liquid  
H301 - Toxic if swallowed  
H314 - Causes severe skin burns and eye damage  
H317 - May cause an allergic skin reaction  
H318 - Causes serious eye damage  
H330 - Fatal if inhaled  
H341 - Suspected of causing genetic defects (Dermal, Inhalation, oral)  
H350 - May cause cancer (Dermal, Inhalation, oral)  
H401 - Toxic to aquatic life

Precautionary statements (GHS-US)

: P201 - Obtain special instructions before use.  
P202 - Do not handle until all safety precautions have been read and understood.  
P210 - Keep away from heat, hot surfaces, open flames, sparks. - No smoking.  
P260 - Do not breathe fume, mist, spray.  
P261 - Avoid breathing fume, mist, spray.  
P264 - Wash hands, forearms and face thoroughly after handling.  
P270 - Do not eat, drink or smoke when using this product.  
P271 - Use only outdoors or in a well-ventilated area.  
P272 - Contaminated work clothing must not be allowed out of the workplace  
P273 - Avoid release to the environment.  
P280 - Wear eye protection, face protection, protective clothing, protective gloves.  
P284 - [In case of inadequate ventilation] wear - Respiratory protection.  
P301+P310 - If swallowed: Immediately call a doctor, a POISON CENTER  
P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting

# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

P302+P352 - If on skin: Wash with plenty of water  
P303+P361+P353 - If on skin (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower  
P304+P340 - If inhaled: Remove person to fresh air and keep comfortable for breathing  
P305+P351+P338 - If in eyes: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing  
P308+P313 - If exposed or concerned: Get medical advice/attention.  
P310 - Immediately call a doctor, a POISON CENTER  
P320 - Specific treatment is urgent (see Hazardous component(s) for labeling on this label)  
P321 - Specific treatment (see Hazardous component(s) for labeling on this label)  
P330 - Rinse mouth.  
P333+P313 - If skin irritation or rash occurs: Get medical advice/attention.  
P363 - Wash contaminated clothing before reuse.  
P370+P378 - In case of fire: Use alcohol resistant foam, carbon dioxide (CO<sub>2</sub>), dry extinguishing powder to extinguish.  
P403+P233 - Store in a well-ventilated place. Keep container tightly closed.  
P403+P235 - Store in a well-ventilated place. Keep cool.  
P405 - Store locked up.  
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

No additional information available

## SECTION 3: Composition/Information on ingredients

### 3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
DIMETHYL SULFATE-D6 (D, 99.5%)	(CAS-No.) 15199-43-6 (EC-No.) 201-058-1 (Unlabeled) (EC Index-No.) 016-023-00-4 (Unlabeled)	100	Carc.Cat.1; R45 Carc.Cat.2; R49 C; R35 N; R51/53 T; R25 T+; R26 Xi; R41 R43 Muta.Cat.3; R68
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
DIMETHYL SULFATE-D6 (D, 99.5%)	(CAS-No.) 15199-43-6 (EC-No.) 201-058-1 (Unlabeled) (EC Index-No.) 016-023-00-4 (Unlabeled)	100	Acute Tox. 3 (Oral), H301 Acute Tox. 1 (Inhalation:dust,mist), H330 Skin Corr. 1B, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350

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

Name	Product identifier	%	GHS-US classification
DIMETHYL SULFATE-D6 (D, 99.5%) (Main constituent)	(CAS-No.) 15199-43-6	100	Flam. Liq. 4, H227 Acute Tox. 3 (Oral), H301 Acute Tox. 1 (Inhalation:dust,mist), H330 Skin Corr. 1A, H314 Eye Dam. 1, H318 Skin Sens. 1, H317 Muta. 2, H341 Carc. 1B, H350 Aquatic Acute 2, H401

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.

# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

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. Immediately call a poison center or doctor/physician. Specific treatment is urgent (see Hazard pictograms (CLP) on this label). Remove victim to fresh air and keep at rest in a position comfortable for breathing. Call a POISON CENTER or doctor/physician if you feel unwell.
First-aid measures after skin contact	: Wash with plenty of soap and water. Get immediate medical advice/attention. Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. Immediately call a poison center or doctor/physician. Wash with plenty of soap and water. If skin irritation or rash occurs: Wash with plenty of soap and water, Get immediate medical advice/attention. Get medical advice/attention. Specific treatment (see Hazard pictograms (CLP) on this label). Wash contaminated clothing before reuse.
First-aid measures after eye contact	: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. Immediately call a poison center or doctor/physician.
First-aid measures after ingestion	: Never give anything by mouth to an unconscious person. Rinse mouth out with water. Get medical advice/attention. Rinse mouth. Immediately call a poison center or doctor/physician. Specific treatment (see Hazard pictograms (CLP) on this label). Do NOT induce vomiting.

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

Symptoms/effects	: Suspected of causing genetic defects (in contact with skin, if inhaled, if swallowed). May cause cancer (in contact with skin, if inhaled, if swallowed). Causes damage to organs (Eyes, heart, liver, kidneys, brain, lungs) (in contact with skin, if inhaled, if swallowed).
Symptoms/effects after inhalation	: Fatal if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes severe skin burns and eye damage. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

### 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 (CO<sub>2</sub>).

### 5.2. Special hazards arising from the substance or mixture

Reactivity : Thermal decomposition generates : Corrosive vapors.

### 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 : Use personal protective equipment as required. Avoid breathing dust, mist or spray. Do not breathe vapors. Ensure adequate air ventilation. No flames, no sparks. Eliminate all sources of ignition. Evacuate unnecessary personnel. Special attention should be given to low areas/pits where flammable vapors can accumulate. Avoid dust formation.

#### 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	: Collect spillage. 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.

### 6.4. Reference to other sections

For further information refer to section 13.

# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

### 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 against static discharges.
- Precautions for safe handling : Provide adequate ventilation to minimize dust and/or vapor concentrations. Do not breathe vapors, spray, mist, gas, fume, dust. Use only outdoors or in a well-ventilated area. Avoid breathing vapors, mist, gas, dust. Obtain special instructions before use. Use personal protective equipment as required. Do not handle until all safety precautions have been read and understood.
- Hygiene measures : Wash hands and other exposed areas with mild soap and water before eating, drinking or smoking and when leaving work. Handle in accordance with good industrial hygiene and safety practice.

#### 7.2. Conditions for safe storage, including any incompatibilities

- Technical measures : Store in a well-ventilated place. Keep container tightly closed. Comply with applicable regulations.
- 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 SULFATE-D6 (D, 99.5%) (15199-43-6)		
Italy - Portugal - USA ACGIH	ACGIH TWA (ppm)	0.10000000 ppm
Italy - Portugal - USA ACGIH	Remark (ACGIH)	Skin & eye irritation. Confirmed animal carcinogen, unknown relevance to humans.
USA OSHA	OSHA PEL (TWA) (mg/m <sup>3</sup> )	5 mg/m <sup>3</sup>
USA OSHA	Remark (OSHA)	Skin designation.

#### 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 : Gloves. Protective clothing. Protective goggles. Self-contained breathing apparatus.
- Materials for protective clothing : Wear suitable protective clothing and gloves.
- Hand protection : Wear suitable protective clothing and gloves.
- Eye protection : Chemical goggles or face shield. Wear eye protection. Chemical goggles or face shield with safety glasses.
- Skin and body protection : Wear suitable protective clothing, gloves and eye/face protection. Wear suitable protective clothing.
- Respiratory protection : In case of inadequate ventilation wear respiratory protection. Approved supplied air respirator. Wear respiratory protection.
- 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 : Liquid.
- Molecular mass : 132.17 g/mol (Labeled)
- Color : Colorless.
- Odor : No data available
- Odor threshold : No data available
- pH : No data available
- Relative evaporation rate (butyl acetate=1) : No data available
- Melting point : -31.99 °C (-25.58 °F)
- Freezing point : No data available
- Boiling point : 75 - 77 °C (167 - 171 °F) at 15 hPa (11 mmHg)
- Flash point : 83 °C (181 °F) - closed cup

# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

Auto-ignition temperature	: No data available
Decomposition temperature	: No data available
Flammability (solid, gas)	: No data available
Vapor pressure	: 1.5 hPa (1.1 mmHg) at 38 °C (100 °F)
Relative vapor density at 20 °C	: 4.35 Air = 1.0
Relative density	: No data available
Specific gravity / density	: 1.333 g/ml
Solubility	: No data available
Log Pow	: No data available
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	: No data available

### 9.2. Other information

No additional information available

## SECTION 10: Stability and reactivity

### 10.1. Reactivity

Thermal decomposition generates : Corrosive vapors.

### 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

Open flame. Heat. Sparks. Moisture sensitive.

### 10.5. Incompatible materials

Strong oxidizing agents. Strong bases. ammonia. Methanol generated on contact with water or moisture.

### 10.6. Hazardous decomposition products

Carbon oxides (CO, CO<sub>2</sub>). Sulphur oxides.

## SECTION 11: Toxicological information

### 11.1. Information on toxicological effects

Acute toxicity : Oral: Toxic if swallowed. Inhalation:dust,mist: Fatal if inhaled.

DIMETHYL SULFATE-D6 (D, 99.5%) (15199-43-6)	
LC50 inhalation rat (mg/l)	45 mg/m <sup>3</sup> 4 h
ATE CLP (oral)	100.000 mg/kg body weight
ATE CLP (vapors)	0.045 mg/l/4h
ATE CLP (dust, mist)	0.045 mg/l/4h

Skin corrosion/irritation	: Causes severe skin burns and eye damage.
Serious eye damage/irritation	: Causes serious eye damage. Eyes rabbit Severe eye irritant 24 Hours
Respiratory or skin sensitization	: Prolonged or repeated exposure may cause allergic reactions to certain sensitive individuals. May cause sensitization by inhalation
Germ cell mutagenicity	: In vitro tests showed mutagenic effects.
Carcinogenicity	: This is or contains a component that has been reported to be carcinogenic based on its IARC, OSHA, ACGIH, NTP, or EPA classification.
Reproductive toxicity	: Not available
Specific target organ toxicity – single exposure	: Not classified Inhalation - May cause respiratory irritation.
Specific target organ toxicity – repeated exposure	: Not classified No data available

# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

Aspiration hazard	: Not classified
Potential Adverse human health effects and symptoms	: Material is extremely destructive to tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Fever. Headache. Coughing. Shortness of breath. 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. Toxic if swallowed. Fatal if inhaled.
IARC group	: 2A
Symptoms/effects after inhalation	: Fatal if inhaled. May cause respiratory irritation.
Symptoms/effects after skin contact	: Causes severe skin burns and eye damage. May cause an allergic skin reaction.
Symptoms/effects after eye contact	: Causes serious eye damage.
Symptoms/effects after ingestion	: Toxic if swallowed. Swallowing a small quantity of this material will result in serious health hazard.

## SECTION 12: Ecological information

### 12.1. Toxicity

Ecology - air	: Dangerous for the ozone layer.
Ecology - water	: Toxic to aquatic life with long lasting effects.

#### DIMETHYL SULFATE-D6 (D, 99.5%) (15199-43-6)

LC50 fish 1	7.5 mg/l <i>Lepomis macrochirus</i> - 96 h
-------------	--

### 12.2. Persistence and degradability

#### DIMETHYL SULFATE-D6 (D, 99.5%) (15199-43-6)

Persistence and degradability	Aerobic - exposure time: 28 d.
Biodegradation	97 % Readily Biodegradable

### 12.3. Bioaccumulative potential

#### DIMETHYL SULFATE-D6 (D, 99.5%) (15199-43-6)

Bioaccumulative potential	Not available.
---------------------------	----------------

### 12.4. Mobility in soil

#### DIMETHYL SULFATE-D6 (D, 99.5%) (15199-43-6)

Ecology - soil	Not available.
----------------	----------------

### 12.5. Results of PBT and vPvB assessment

No additional information available

### 12.6. Other adverse effects

Other adverse effects	: Environmental precautions. Toxic to aquatic life with long lasting effects. Disposal must be done according to official regulations.
Other information	: Avoid release to the environment.

## 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. Hazardous waste due to toxicity.

## SECTION 14: Transport information

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

### 14.1. UN number

UN-No.(DOT)	: 1595
DOT NA no.	UN1595

### 14.2. UN proper shipping name

Proper Shipping Name (DOT)	: Dimethyl sulfate
Class (DOT)	: 6.1 - Class 6.1 - Poisonous materials 49 CFR 173.132



# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

Hazard labels (DOT) : 6.1 - Poison  
8 - Corrosive



Packing group (DOT) : I - Great Danger

DOT Special Provisions (49 CFR 172.102) : 2 - This material is poisonous by inhalation (see 171.8 of this subchapter) in Hazard Zone B (see 173.116(a) or 173.133(a) of this subchapter), and must be described as an inhalation hazard under the provisions of this subchapter.  
B9 - Bottom outlets are not authorized.  
B14 - Each bulk packaging, except a tank car or a multi-unit-tank car tank, must be insulated with an insulating material so that the overall thermal conductance at 15.5 C (60 F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials must not promote corrosion to steel when wet.  
B32 - MC 312, MC 330, MC 331, DOT 412 cargo tanks and DOT 51 portable tanks must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of 173.24b(b) of this subchapter. Thickness of stainless steel for tank shell and heads for cargo tanks and portable tanks must be the greater of 6.35 mm (0.250 inch) or the thickness required for a tank with a design pressure at least equal to 1.3 times the vapor pressure of the lading at 46 C (115 F). In addition, MC 312 and DOT 412 cargo tank motor vehicles must: a. Be ASME Code (U) stamped for 100% radiography of all pressure-retaining welds; b. Have accident damage protection which conforms with 178.3458 of this subchapter; c. Have a MAWP or design pressure of at least 87 psig; and d. Have a bolted man way cover.  
B77 - Other packaging are authorized when approved by the Associate Administrator.  
T20 - 10 8 mm Prohibited 178.275(g)(3).  
TP2 - a. The maximum degree of filling must not exceed the degree of filling determined by the following: (image) Where: tr is the maximum mean bulk temperature during transport, tf is the temperature in degrees celsius of the liquid during filling, and a is the mean coefficient of cubical expansion of the liquid between the mean temperature of the liquid during filling (tf) and the maximum mean bulk temperature during transportation (tr) both in degrees celsius. b. For liquids transported under ambient conditions may be calculated using the formula: (image) Where: d15 and d50 are the densities (in units of mass per unit volume) of the liquid at 15 C (59 F) and 50 C (122 F), respectively.  
TP13 - Self-contained breathing apparatus must be provided when this hazardous material is transported by sea.  
TP38 - Each portable tank must be insulated with an insulating material so that the overall thermal conductance at 15.5 C (60 F) is no more than 1.5333 kilojoules per hour per square meter per degree Celsius (0.075 Btu per hour per square foot per degree Fahrenheit) temperature differential. Insulating materials may not promote corrosion to steel when wet.  
TP45 - Each portable tank must be made of stainless steel, except that steel other than stainless steel may be used in accordance with the provisions of 173.24b(b) of this subchapter. Thickness of stainless steel for portable tank shells and heads must be the greater of 6.35 mm (0.250 inch) or the thickness required for a portable tank with a design pressure at least equal to 1.3 times the vapor pressure of the hazardous material at 46 C (115 F).

DOT Packaging Exceptions (49 CFR 173.xxx) : None

DOT Packaging Non Bulk (49 CFR 173.xxx) : 227

DOT Packaging Bulk (49 CFR 173.xxx) : 244

DOT RQ : 100 lbs

Marine pollutant : No

### 14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : IATA Passenger/Cargo: Not permitted for transport.

### Overland transport

Packing group (ADR) : I

Class (ADR) : 6.1 - Toxic substances

Hazard identification number (Kemler No.) : 668

Classification code (ADR) : TC1



# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

Hazard labels (ADR) : 6.1 - Toxic substances  
8 - Corrosive substances



Orange plates :

Tunnel restriction code (ADR) : C/D  
Limited quantities (ADR) : 0  
EAC : •3XE  
APP : B  
Excepted quantities (ADR) : E0

### Transport by sea

DOT Vessel Stowage Location : D - The material must be stowed "on deck only" on a cargo vessel and on a passenger vessel carrying a number of passengers limited to not more than the larger of 25 passengers or one passenger per each 3 m of overall vessel length, but the material is prohibited on passenger vessels in which the limiting number of passengers is exceeded.  
DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"  
MFAG-No : 156

### Air transport

DOT Quantity Limitations Passenger aircraft/rail : Forbidden  
(49 CFR 173.27)  
DOT Quantity Limitations Cargo aircraft only (49 : Forbidden  
CFR 175.75)  
Civil Aeronautics Law : Toxic and infectious substances/Toxic substances

### 14.4. Environmental hazards

Other information : No supplementary information available.

### 14.5. Special precautions for user

Special transport precautions : IATA Passenger/Cargo: Not permitted for transport.

### 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 SULFATE-D6 (D, 99.5%) (15199-43-6)

Listed on the United States SARA Section 302  
Subject to reporting requirements of United States SARA Section 313

SARA Section 311/312 Hazard Classes	Fire hazard Immediate (acute) health hazard Delayed (chronic) health hazard
-------------------------------------	---

### 15.2. International regulations

#### CANADA

#### DIMETHYL SULFATE-D6 (D, 99.5%) (15199-43-6)

Listed on the Canadian DSL (Domestic Substances List)

#### 15.2.1. National regulations

No additional information available

### 15.3. US State regulations

#### DIMETHYL SULFATE-D6 (D, 99.5%)(15199-43-6)

U.S. - California - Proposition 65 - Carcinogens List	Yes
U.S. - California - Proposition 65 - Developmental	No

# DIMETHYL SULFATE-D6 (D, 99.5%) DLM-196

## 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

DIMETHYL SULFATE-D6 (D, 99.5%)(15199-43-6)	
Toxicity	
U.S. - California - Proposition 65 - Reproductive Toxicity - Female	No
U.S. - California - Proposition 65 - Reproductive Toxicity - Male	No
State or local regulations	U.S. - Massachusetts - Right To Know List U.S. - Pennsylvania - RTK (Right to Know) List U.S. - New Jersey - Right to Know Hazardous Substance 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.

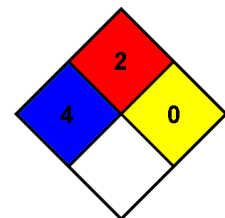
Full text of R-, H- and EUH-phrases:

Acute Tox. 1 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 1
Acute Tox. 3 (Oral)	Acute toxicity (oral) Category 3
Carc. 1B	Carcinogenicity Category 1B
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Muta. 2	Germ cell mutagenicity Category 2
Skin Corr. 1B	Skin corrosion/irritation Category 1B
Skin Sens. 1	Skin sensitization, Category 1
H301	Toxic if swallowed
H314	Causes severe skin burns and eye damage
H317	May cause an allergic skin reaction
H318	Causes serious eye damage
H330	Fatal if inhaled
H341	Suspected of causing genetic defects
H350	May cause cancer
R25	Toxic if swallowed
R26	Very toxic by inhalation
R35	Causes severe burns
R41	Risk of serious damage to eyes
R43	May cause sensitization by skin contact
R45	May cause cancer
R49	May cause cancer by inhalation
R51/53	Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment
R68	Possible risk of irreversible effects
C	Corrosive
N	Dangerous for the environment
T	Toxic
T+	Very toxic
Xi	Irritant

NFPA health hazard : 4 - Materials that, under emergency conditions, can be lethal.

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 : 4 Severe Hazard - Life-threatening, major or permanent damage may result from single or repeated overexposures

Flammability : 2 Moderate Hazard

Physical : 0 Minimal Hazard

CIL Substance SDS

*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*