



MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 12/12/2012

Version 1.2

SECTION 1. Identification

Product identifier

Product number	103587
Product name	Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™

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

Identified uses	Use restricted under TSCA to research and development or as analytical reagent. Uses regulated under FDA or FIFRA are not affected. Reagent for analysis
-----------------	---

Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America SDS Phone Support: +1-978-715-1335 General Inquiries: +1-978-751-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) e-mail: mm_sds@merckgroup.com
---------	--

Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
---------------------	--

SECTION 2. Hazards identification

GHS Classification

Flammable liquid, Category 4, H227

For the full text of the H-Statements mentioned in this Section, see Section 16.

GHS-Labeling

Signal Word
Warning

Hazard Statements
H227 Combustible liquid

OSHA Hazards

This material is considered hazardous by the OSHA Hazard Communication Standard (29 CFR 1910.1200).

Other hazards

None known.

MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Product number	103587	Version 1.2
Product name	Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™	

SECTION 3. Composition/information on ingredients

Formula	C ₂ D ₆ OS (Hill)
CAS-No.	2206-27-1
Molar mass	84.17 g/mol

Hazardous ingredients

Chemical Name (Concentration)

CAS-No.

dij[(2H3)methyl] sulphoxide (>= 90 % - <= 100 %)
2206-27-1

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air.

Skin contact

After skin contact: wash off with plenty of water. Remove contaminated clothing.

Eye contact

After eye contact: rinse out with plenty of water.

Ingestion

After swallowing: immediately make victim drink water (two glasses at most). Subsequently administer: activated charcoal (20 - 40 g in 10% slurry).

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects, Nausea, Headache, Tiredness, CNS disorders

Indication of any immediate medical attention and special treatment needed

Laxative: Sodium sulfate (1 tablespoon/1/4 l water). Get medical attention.

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

Water, Carbon dioxide (CO₂), Foam, Dry powder

Unsuitable extinguishing media

For this substance/mixture no limitations of extinguishing agents are given.

Special hazards arising from the substance or mixture

Combustible material, Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air on intense heating.

Development of hazardous combustion gases or vapors possible in the event of fire.

Fire may cause evolution of:

Sulfur oxides

MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Product number	103587	Version 1.2
Product name	Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™	

Advice for firefighters

Special protective equipment for fire-fighters

In the event of fire, wear self-contained breathing apparatus.

Further information

Suppress (knock down) gases/vapors/mists with a water spray jet. Prevent fire extinguishing water from contaminating surface water or the ground water system.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders: Protective equipment see section 8.

Environmental precautions

Do not empty into drains.

Methods and materials for containment and cleaning up

Cover drains. Collect, bind, and pump off spills.

Observe possible material restrictions (see sections 7 and 10).

Take up with liquid-absorbent material (e.g. Chemisorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

Conditions for safe storage, including any incompatibilities

Tightly closed.

Store at +15°C to +25°C (+59°F to +77°F).

SECTION 8. Exposure controls/personal protection

Exposure limit(s)

Contains no substances with occupational exposure limit values.

Engineering measures

Technical measures and appropriate working operations should be given priority over the use of personal protective equipment.

Individual protection measures

Protective clothing should be selected specifically for the workplace, depending on concentration and quantity of the hazardous substances handled. The chemical resistance of the protective equipment should be inquired at the respective supplier.

Hygiene measures

Change contaminated clothing. Wash hands after working with substance.

Eye/face protection

Safety glasses

MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Product number	103587	Version 1.2
Product name	Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™	

Hand protection

Chemical-resistant, impervious gloves complying with an approved standard should be worn at all times when handling chemical products if a risk assessment indicates this is necessary.

Respiratory protection

required when vapors/aerosols are generated.

Use a properly fitted, air-purifying or air-fed respirator complying with an approved standard if a risk assessment indicates this is necessary. Respirator selection must be based on known or anticipated exposure levels, the hazards of the product and the safe working limits of the selected respirator.

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	characteristic
Odor Threshold	No information available.
pH	No information available.
Melting point	68.4 °F (20.2 °C)
Boiling point	No information available.
Flash point	190 °F (88 °C)
Evaporation rate	No information available.
Flammability (solid, gas)	No information available.
Lower explosion limit	1.8 %(V)
Upper explosion limit	63 %(V)
Vapor pressure	2.5 hPa at 68 °F (20 °C)
Relative vapor density	No information available.
Relative density	1.19 g/cm ³ at 68 °F (20 °C)
Water solubility	at 68 °F (20 °C) soluble
Partition coefficient: n-octanol/water	log Pow: -1.35 (experimental) (Lit.) Bioaccumulation is not expected (log Pow <1).

MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Product number	103587	Version 1.2
Product name	Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™	

Autoignition temperature	No information available.
Decomposition temperature	> 374 °F (> 190 °C)
Viscosity, dynamic	No information available.
Explosive properties	No information available.
Ignition temperature	518 °F (270 °C)
Saturated vapor concentration	8.0 g/m ³ at 68 °F (20 °C)

SECTION 10. Stability and reactivity

Reactivity

Forms explosive mixtures with air on intense heating.

Chemical stability

The product is chemically stable under standard ambient conditions (room temperature) .

Stabilizer

tetramethylsilane

Possibility of hazardous reactions

Exothermic reaction with:

Risk of explosion with:

acid halides, Sulfur trioxide, Sulfur oxides, Strong oxidizing agents, Oxides of phosphorus, nonmetallic halides, Nitric acid, silver salt, silicon compounds, nitrogen dioxide, potassium permanganate, Ketones, Halogenated hydrocarbon, oxyhalogenic compounds, Alkali metals, Potassium, sodium, iron(III) compounds, hydrides, nitrates, halogen-halogen compounds, perchloric acid, salts, perchlorates, chlorates, nonmetallic oxyhalides

Conditions to avoid

Strong heating.

A range from approx. 15 Kelvin below the flash point is to be rated as critical.

Incompatible materials

various plastics, Metals

Hazardous decomposition products

in the event of fire: See section 5.

SECTION 11. Toxicological information

Information on toxicological effects

Likely route of exposure

Inhalation, Eye contact, Skin contact

MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Product number 103587 Version 1.2
Product name Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™

Acute oral toxicity

LD50 rat: 14,500 mg/kg (RTECS)

Acute dermal toxicity

LD50 rat: 40,000 mg/kg
(RTECS)

Skin irritation

slight irritation

Eye irritation

slight irritation

Sensitization

Sensitization test: guinea pig

Result: negative
(IUCLID)

Genotoxicity in vitro

Ames test

Result: negative
(IUCLID)

Mutagenicity (mammal cell test): chromosome aberration.

Result: negative

(National Toxicology Program)

Carcinogenicity

No indication of carcinogenic activity. (IUCLID)

Teratogenicity

Did not show teratogenic effects in animal experiments. (IUCLID)

Specific target organ systemic toxicity - single exposure

The substance or mixture is not classified as specific target organ toxicant, single exposure.

Specific target organ systemic toxicity - repeated exposure

The substance or mixture is not classified as specific target organ toxicant, repeated exposure.

Aspiration hazard

Regarding the available data the classification criteria are not fulfilled.

Carcinogenicity

IARC	No ingredient of this product present at levels greater than or equal to 0.1% is identified as probable, possible or confirmed human carcinogen by IARC.
OSHA	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a carcinogen or potential carcinogen by OSHA.
NTP	No ingredient of this product present at levels greater than or equal to 0.1% is identified as a known or anticipated carcinogen by NTP.
ACGIH	No ingredient of this product present at levels greater than or

MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Product number	103587	Version 1.2
Product name	Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™	

equal to 0.1% is identified as a carcinogen or potential carcinogen by ACGIH.

Further information

Possible symptoms:

After uptake:

CNS disorders, Nausea, Tiredness, Headache

Possible damages:

Damage to:

Liver, Kidney

Further data:

However, when the product is handled appropriately, hazardous effects are unlikely to occur.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

LC50 *Oncorhynchus mykiss* (rainbow trout): 38,500 mg/l; 96 h (ECOTOX Database)

Toxicity to bacteria

EC10 *Pseudomonas putida*: 7,100 mg/l; 16 h (IUCLID)

EC50 activated sludge: 10 - 100 mg/l; 30 min (IUCLID)

Persistence and degradability

Biodegradability

3.1 %; 14 d

OECD Test Guideline 301C

Not readily biodegradable.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -1.35

(experimental)

(Lit.) Bioaccumulation is not expected (log Pow <1).

Mobility in soil

No information available.

Other adverse effects

SECTION 13. Disposal considerations

The information presented only applies to the material as supplied. The identification based on characteristic(s) or listing may not apply if the material has been used or otherwise contaminated. It is the responsibility of the waste generator to determine the toxicity and physical properties of the material generated to determine the proper waste identification and disposal methods in compliance with applicable regulations. Disposal should be in accordance with applicable regional, national and local laws and regulations.

MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Product number 103587 Version 1.2
Product name Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™

SECTION 14. Transport information

Land transport (DOT)

Not classified as dangerous in the meaning of transport regulations.

Air transport (IATA)

Not classified as dangerous in the meaning of transport regulations.

Sea transport (IMDG)

Not classified as dangerous in the meaning of transport regulations.

SECTION 15. Regulatory information

United States of America

OSHA Hazards

Combustible Liquid

This information is based on 29 CFR 1910.1200 criteria prior to adoption of the GHS, and may deviate from the GHS information on the label and in section 2.

SARA 311/312 Hazards

Fire Hazard

US State Regulations

Massachusetts Right To Know

Remarks

No components are subject to the Massachusetts Right to Know Act.

Pennsylvania Right To Know

Ingredients

di[(2H3)methyl] sulphoxide

New Jersey Right To Know

Ingredients

di[(2H3)methyl] sulphoxide

California Prop 65 Components

This product does not contain any chemicals known to the State of California to cause cancer, birth, or any other reproductive defects.

Notification status

TSCA:

Not Listed on TSCA inventory. For Research and Development Use only. Not For Manufacturing or Commercial Purposes.

DSL:

All components of this product are on the Canadian DSL.

SECTION 16. Other information

Details in analogy to the undeuterated compound.

MATERIAL SAFETY DATA SHEET

according to the Hazard Communication Standard (29 CFR 1910.1200)

Product number	103587	Version 1.2
Product name	Dimethyl sulfoxide-D6 with TMS (0.1 vol.%), deuteration degree min. 99.9% for NMR spectroscopy MagniSolv™	

Training advice

Provide adequate information, instruction and training for operators.

Full text of H-Statements referred to under sections 2 and 3.

H227 Combustible liquid

Key or legend to abbreviations and acronyms used in the safety data sheet

Used abbreviations and acronyms can be looked up at www.wikipedia.org.

Revision Date 12/12/2012

The information contained herein is based on the present state of our knowledge. It characterizes the product with regard to appropriate safety precautions. It does not represent a warranty of any product properties and we assume no liability for any loss or injury which may result from the use of this information. Users should conduct their own investigations to determine the suitability of the information.

All rights reserved. Millipore and the "M" Mark are registered trademarks of Merck KGaA, Darmstadt, Germany.