

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: 29/04/2011 Revision date: 14/06/2018 Supersedes: 11/04/2018 Version: 3.0

DLM-1981

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

1.1. Product identifier

Product form : Substance

Substance name : METHANESULFONIC ACID-D4 (D, 98%)

 EC Index-No.
 : 607-145-00-4 (Unlabeled)

 EC-No.
 : 200-898-6 (Unlabeled)

 CAS-No.
 : 75-75-2 (Unlabeled)

Product code : DLM-1981 Formula : CD3SO3D

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 <u>cilsales@isotope.com</u> 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]

 Met. Corr. 1
 H290

 Acute Tox. 4 (Oral)
 H302

 Acute Tox. 4 (Dermal)
 H312

 Acute Tox. 4 (Inhalation:dust,mist)
 H332

 Skin Corr. 1A
 H314

 Eye Dam. 1
 H318

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

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

Xn; R20/21/22 C; R35 Xi; R41 Xi: R39

Full text of R-phrases: see section 16

GHS-US classification

 Met. Corr. 1
 H290

 Acute Tox. 4 (Oral)
 H302

 Acute Tox. 4 (Dermal)
 H312

 Acute Tox. 4 (Inhalation:dust,mist)
 H332

 Skin Corr. 1A
 H314

 Eye Dam. 1
 H318

 Full text of H statements : see section 16

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Adverse physicochemical, human health and environmental effects

No additional information available

2.2. Label elements

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

Hazard pictograms (CLP)





Signal word (CLP) : Danger

Hazard statements (CLP) : H290 - May be corrosive to metals

H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled

H314 - Causes severe skin burns and eye damage

Precautionary statements (CLP) : P234 - Keep only in original container.

P260 - Do not breathe dust, fume, gas, mist, spray, vapors.
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.
P280 - Wear protective clothing, protective gloves.

P301+P312 - IF SWALLOWED: Call a doctor, a POISON CENTER if you feel unwell. P301+P330+P331 - IF SWALLOWED: Rinse mouth. Do NOT induce vomiting.

GHS-US labeling

Hazard pictograms (GHS-US)





Signal word (GHS-US) : Danger

Hazard statements (GHS-US) : H290 - May be corrosive to metals

H302+H312+H332 - Harmful if swallowed, in contact with skin or if inhaled

H314 - Causes severe skin burns and eye damage

H318 - Causes serious eye damage

Precautionary statements (GHS-US) : P234 - Keep only in original container.

P260 - Do not breathe fume, dust, gas, mist, spray, vapors. P261 - Avoid breathing dust, fume, gas, mist, spray, vapors. 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.
P280 - Wear protective clothing, protective gloves.

P301+P312 - If swallowed: Call a poison center or doctor if you feel unwell P301+P330+P331 - If swallowed: rinse mouth. Do NOT induce vomiting

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 P310 - Immediately call a poison center or doctor P312 - Call a poison center or doctor if you feel unwell

P321 - Specific treatment (see Hazard pictograms (CLP) on this label)

P330 - Rinse mouth.

P362+P364 - Take off contaminated clothing and wash it before reuse.

P363 - Wash contaminated clothing before reuse. P390 - Absorb spillage to prevent material-damage.

P405 - Store locked up.

P406 - Store in corrosive resistant container with a resistant inner liner. P501 - Dispose of contents/container to Comply with applicable regulations

2.3. Other hazards

No additional information available

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SECTION 3: Composition/Information on ingredients

3.1. Substances

Name	Product identifier	%	Classification according to Directive 67/548/EEC
METHANESULFONIC ACID-D4 (D, 98%)	(CAS-No.) 75-75-2 (Unlabeled) (EC-No.) 200-898-6 (Unlabeled) (EC Index-No.) 607-145-00-4 (Unlabeled)	100	Xn; R20/21/22 C; R35 Xi; R41 Xi; R39
Name	Product identifier	%	Classification according to Regulation (EC) No. 1272/2008 [CLP]
METHANESULFONIC ACID-D4 (D, 98%)	(CAS-No.) 75-75-2 (Unlabeled) (EC-No.) 200-898-6 (Unlabeled) (EC Index-No.) 607-145-00-4 (Unlabeled)	100	Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1A, H314 Eye Dam. 1, H318

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

Name	Product identifier	%	GHS-US classification
METHANESULFONIC ACID-D4 (D, 98%) (Main constituent)	(CAS-No.) 75-75-2 (Unlabeled)	100	Met. Corr. 1, H290 Acute Tox. 4 (Oral), H302 Acute Tox. 4 (Dermal), H312 Acute Tox. 4 (Inhalation:dust,mist), H332 Skin Corr. 1A, H314 Eye Dam. 1, H318

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 : 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 : Take off contaminated clothing and shoes immediately. Wash off with soap and plenty of water. Consult a physician.

First-aid measures after eye contact : Rinse thoroughly with plenty of water for at least 15 minutes and consult a physician. Continue rinsing eyes during transport to hospital.

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, both acute and delayed

Symptoms/effects after inhalation : May be harmful if inhaled. May cause respiratory tract irritation.

Symptoms/effects after skin contact : Causes serious skin burns.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : 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 : Use water spray, alcohol-resistant foam, dry chemical, or carbon dioxide.

5.2. Special hazards arising from the substance or mixture

Reactivity : Not available.

5.3. Advice for firefighters

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.

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SECTION 6: Accidental release measures

6.1. Personal precautions, protective equipment and emergency procedures

6.1.1. For non-emergency personnel

Emergency procedures

: Wear respiratory protection. Avoid breathing vapors, mist or gas. Ensure adequate ventilation. Evacuate personnel to safe areas.

6.1.2. For emergency responders

No additional information available

6.2. Environmental precautions

Prevent further leakage or spillage if safe to do so. Do not let product enter drains. Discharge into the environment must be avoided.

6.3. Methods and material for containment and cleaning up

For containment

: Soak up with inert absorbent material and dispose of as hazardous waste. Do not flush with water. Keep in suitable, closed containers for 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 contact with skin and eyes. Avoid inhalation of vapor or mist. Normal measures for

preventive fire protection.

Precautions for safe handling

: Provide appropriate exhaust ventilation at places where dust is formed.

Hygiene measures

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

Conditions for safe storage, including any incompatibilities

Technical measures

: Keep container tightly closed in a cool, dry and well-ventilated place.

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

No additional information available

8.2. Exposure controls

Appropriate engineering controls

: Handle in accordance with good industrial hygiene and safety practice. Wash hands before

breaks and at the end of workday.

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

: 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.

Environmental exposure controls

: Prevent further leakage or spillage if safe to do so. Do not let product enter drains.

SECTION 9: Physical and chemical properties

9.1. Information on basic physical and chemical properties

Physical state : Liquid
Appearance : Liquid

Molecular mass : 100.13 g/mol (Labeled)
Color : Colorless to light yellow
Odor : No data available
Odor threshold : No data available
pH : < 1 at 20 °C (68 °F)

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: No data available Relative evaporation rate (butyl acetate=1)

Melting point 17 - 19 °C (63 - 66 °F) - lit.

Freezing point : No data available

Boiling point : 167 °C (333 °F) at 13 hPa (10 mmHg) - lit. Flash point : 189 °C (372 °F) - closed cup - DIN 51755 Part 1 Auto-ignition temperature : 535 °C (995 °F) at 1,010 hPa (758 mmHg)

: No data available Decomposition temperature Flammability (solid, gas) : No data available

: 0.112 hPa (0.084 mmHg) at 80 °C (176 °F) - OECD Test Guideline 104; 0.224 hPa (0.168 Vapor pressure

mmHg) at 90 °C (194 °F) - OECD Test Guideline 104

Relative vapor density at 20 °C : 3.32 - (Air = 1.0) : No data available Relative density

Specific gravity / density : 1.481 g/ml at 25 °C (77 °F) - lit.

Solubility : Water: 1000 g/l at 20 °C (68 °F) - completely miscible

: -2.38 at 20 °C (68 °F) Log Pow Log Kow : No data available Viscosity, kinematic No data available : No data available Viscosity, dynamic Explosive properties : No data available Oxidizing properties : No data available **Explosion limits** : 11.4 - 24.3 vol % (V)

Other information

No additional information available

SECTION 10: Stability and reactivity

10.1. Reactivity

Not available.

10.2. **Chemical stability**

Stable if stored under recommended conditions.

Possibility of hazardous reactions

No additional information available

10.4. **Conditions to avoid**

Heat.

Incompatible materials

amines. Strong acids. Strong oxidizing agent.

10.6. **Hazardous decomposition products**

No data available.

SECTION 11: Toxicological information

11.1. Information on toxicological effects

: Oral: Harmful if swallowed. Dermal: Harmful in contact with skin. Inhalation:dust,mist: Harmful if Acute toxicity inhaled.

METHANESULFONIC ACID-D4 (D, 98%) (75-75-2 (Unlabeled))	
LD50 oral rat	648.7 mg/kg male and female (OECD Test Guideline 401)
LD50 dermal rabbit	1000 - 2000 mg/kg (OECD Test Guideline 402)
LC50 inhalation rat (mg/l)	1.1 - 1.4 mg/l 6 h
ATE CLP (oral)	648.700 mg/kg body weight
ATE CLP (dermal)	1000.000 mg/kg body weight
ATE CLP (vapors)	1.100 mg/l/4h
ATE CLP (dust, mist)	1.100 mg/l/4h

Skin corrosion/irritation : Skin - Rabbit Result: Corrosive

pH: < 1 at 20 °C (68 °F)

Serious eye damage/irritation : Eyes - Rabbit Result: Risk of serious damage to eyes.

pH: < 1 at 20 °C (68 °F)

Respiratory or skin sensitization : Buehler Test - Guinea pig Does not cause skin sensitization. (OECD Test Guideline 406)

Germ cell mutagenicity : Hamster Ovary Result: negative. Mouse - male and female. Result: Negative

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Carcinogenicity : Not classified

Reproductive toxicity : Reproductive Toxicity - Rat - male and female - Oral. No adverse effect has been observed in

chronic toxicity tests.

Specific target organ toxicity – single exposure : Not classified

Specific target organ toxicity - repeated

exposure

: Repeated dose toxicity Rat - male - oral - NOAEL: >= 1,805 mg/kg

Aspiration hazard : Not classified

Potential Adverse human health effects and

Symptoms/effects after inhalation

symptoms

Burning sensation. Cough. Wheezing. Laryngitis. Shortness of breath. Spasm. Inflammation and edema of the larynx. Inflammation and edema of the bronchi. Pneumonitis. Pulmonary edema. Material is extremely destructive to the tissue of the mucous membranes and upper respiratory tract, eyes, and skin. Spasm, inflammation and edema of the larynx, inflammation and edema of the pronchi, pneumonitis, pulmonary edema, burning sensation, cough, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting. To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

: May be harmful if inhaled. May cause respiratory tract irritation.

Symptoms/effects after skin contact : Causes serious skin burns.

Symptoms/effects after eye contact : Causes serious eye damage.

Symptoms/effects after ingestion : Harmful if swallowed.

SECTION 12: Ecological information

12.1. Toxicity

METHANESULFONIC ACID-D4 (D, 98%) (75-75-2 (Unlabeled))		
LC50 fish 1	73 mg/l static test LC50 - Oncorhynchus mykiss (rainbow trout) - 96 h (OECD Test Guideline 203)	
EC50 Daphnia 1	70 mg/l static test EC50 Daphnia (water flea) - 48 h (OECD Test Guideline 202)	
EC50 other aquatic organisms 1	> 1000 mg/l Respiration inhibition EC50 - Sludge Treatment - 30 min. (OECD Test Guideline 209)	
ErC50 (algae)	7.2 - 20 mg/l static test EC50 - Selenastrum capricornutum (green algae) - 96 h (OECD Test Guideline 201)	

12.2. Persistence and degradability

METHANESULFONIC ACID-D4 (D, 98%) (75-75-2 (Unlabeled))		
Chemical oxygen demand (COD)	aerobic Chemical oxygen demand - Exposure time 28 d biodegradable (OECD Test Guideline 301A)	Result: 90- 100% - Readily

12.3. Bioaccumulative potential

METHANESULFONIC ACID-D4 (D, 98%) (75-75-2 (Unlabeled))	
Log Pow	-2.38 at 20 °C (68 °F)

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

: An environmental hazard cannot be excluded in the event of an unprofessional handling or disposal. Toxic to aquatic life.

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) : 3265

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DOT NA no. UN3265

14.2. UN proper shipping name

Proper Shipping Name (DOT) : Corrosive liquid, acidic, organic, n.o.s.

(Methanesulphonic acid)

Class (DOT) : 8 - Class 8 - Corrosive material 49 CFR 173.136

Hazard labels (DOT) : 8 - Corrosive



DOT Symbols : G - Identifies PSN requiring a technical name

Packing group (DOT) : II - Medium Danger

DOT Special Provisions (49 CFR 172.102) : B2 - MC 300, MC 301, MC 302, MC 303, MC 305, and MC 306 and DOT 406 cargo tanks are

not authorized.

IB2 - Authorized IBCs: Metal (31A, 31B and 31N); Rigid plastics (31H1 and 31H2); Composite (31HZ1). 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.

T11 - 6 178.274(d)(2) Normal..... 178.275(d)(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.

TP27 - A portable tank having a minimum test pressure of 4 bar (400 kPa) may be used provided the calculated test pressure is 4 bar or less based on the MAWP of the hazardous material, as defined in 178.275 of this subchapter, where the test pressure is 1.5 times the MAWP.

DOT Packaging Exceptions (49 CFR 173.xxx) : 154

DOT Packaging Non Bulk (49 CFR 173.xxx) : 202 DOT Packaging Bulk (49 CFR 173.xxx) : 242

14.3. Additional information

Other information : No supplementary information available.

Special transport precautions : Not dangerous goods.

Overland transport

Packing group (ADR) : II

Class (ADR) : 8 - Corrosive substances

Hazard identification number (Kemler No.) : 80
Classification code (ADR) : C3

Hazard labels (ADR) : 8 - Corrosive substances

8

Orange plates :

80 3265

Tunnel restriction code (ADR) : E
Limited quantities (ADR) 11
EAC : 2X
APP : B
Excepted quantities (ADR) : E2

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Transport by sea

DOT Vessel Stowage Location : B - (i) The material may be stowed "on deck" or "under deck" 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; and (ii) "On deck only" on passenger vessels in which the number of passengers specified in paragraph (k)(2)(i) of this

section is exceeded.

DOT Vessel Stowage Other : 40 - Stow "clear of living quarters"

MFAG-No : 153

Air transport

DOT Quantity Limitations Passenger aircraft/rail : 1 L

(49 CFR 173.27)

DOT Quantity Limitations Cargo aircraft only (49 : 30 L

CFR 175.75)

Civil Aeronautics Law : Corrosive substances

14.4. Environmental hazards

Other information : No supplementary information available.

14.5. Special precautions for user

Special transport precautions : 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

METHANESULFONIC ACID-D4 (D, 98%) (75-75-2 (Unlabeled))

SARA Section 311/312 Hazard Classes Immediate (acute) health hazard

15.2. International regulations

CANADA

METHANESULFONIC ACID-D4 (D, 98%) (75-75-2 (Unlabeled))

Listed on the Canadian DSL (Domestic Substances List)

15.2.1. National regulations

No additional information available

15.3. US State regulations

METHANESULFONIC ACID-D4 (D, 98%)(75-75-2 (Unlabeled))		
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 Pennsylvania - RTK (Right to Know) List U.S New Jersey - Right to Know Hazardous Substance List This product does not contain any chemicals known to State of California to cause cancer, birth defects, or any other reproductive harm.	

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.

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

Acute Tox. 4 (Dermal)	Acute toxicity (dermal) Category 4
Acute Tox. 4 (Inhalation:dust,mist)	Acute toxicity (inhalation:dust,mist) Category 4
Acute Tox. 4 (Oral)	Acute toxicity (oral) Category 4
Eye Dam. 1	Serious eye damage/eye irritation Category 1
Met. Corr. 1	Corrosive to metals Category 1
Skin Corr. 1A	Skin corrosion/irritation Category 1A
H290	May be corrosive to metals
H302	Harmful if swallowed
H312	Harmful in contact with skin
H314	Causes severe skin burns and eye damage
H318	Causes serious eye damage
H332	Harmful if inhaled
R20/21/22	Harmful by inhalation, in contact with skin and if swallowed
R35	Causes severe burns
R39	Danger of very serious irreversible effects
R41	Risk of serious damage to eyes
С	Corrosive
Xi	Irritant
Xn	Harmful

NFPA health hazard : 3 - Materials that, under emergency conditions, can cause

serious or permanent injury.

NFPA fire hazard : 1 - Materials that must be preheated before ignition can

occur.

NFPA reactivity : 0 - Material that in themselves are normally stable, even

under fire conditions.



Hazard Rating

Health : 3 Serious Hazard - Major injury likely unless prompt action is taken and medical treatment is

given

Flammability : 1 Slight 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

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