

Safety Data Sheet

according to Regulation (EC) No 1907/2006 (REACH)
Classifications according to Regulation (EC) No 1272/2008.
Printdate 17 May 2023

1. IDENTIFICATION OF THE SUBSTANCE/MIXTURE AND OF THE COMPANY/UNDERTAKING

1.1. Product name:

Diethylene glycol dimethyl ether

1.1. Catalog No.:

681481

1.2. Relevant identified uses of the substance or mixture

Identified: Laboratory chemical
uses: R&D

1.3. Uses advised against:

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Am Wieseneck 7

04451 Cunnersdorf
Deutschland

Tel. +49 34291 3372-36
Fax. +49 34291 3372-39
contact@hpc-standards.com

1.4. Emergency telephone number

HPC Standards Tel. +49 34291 3372-36
This number is only available during office hours.

2. HAZARDS IDENTIFICATION

2.1 Classification of the substance or mixture

Classification according to Regulation (EC) No 1272/2008
Flammable liquids (Category 3), H226
Reproductive toxicity (Category 1B), H360FD

2.2. Label elements

2.2.1. Pictogram



2.2.2.

Label elements

Labelling according Regulation (EC) No 1272/2008:

Signal Word: Danger

Hazard statement(s):

H226 Flammable liquid and vapor.

H360FD May damage fertility. May damage the unborn child.

Precautionary statement(s):

P202 Do not handle until all safety precautions have been read and understood.

P210 Keep away from heat, hot surfaces, sparks, open flames and other ignition sources. No smoking.

P233 Keep container tightly closed.

P240 Ground and bond container and receiving equipment.

P241 Use explosion-proof electrical/ ventilating/ lighting/ equipment.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard information (EU):

EUH019 May form explosive peroxides.

Reduced Labeling (<= 125 ml):

Signal Word: Danger

Hazard statement(s):

H360FD May damage fertility. May damage the unborn child.

Precautionary statement(s):

P202 Do not handle until all safety precautions have been read and understood.

P308 + P313 IF exposed or concerned: Get medical advice/ attention.

Supplemental Hazard information (EU):

EUH019 May form explosive peroxides.

2.3 Other hazards

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

3. COMPOSITION/INFORMATION ON INGREDIENTS

3.1 Substances

Synonyms: 2-Methoxyethyl ether; 'Diglyme'; Dimethyldiglycol; Bis(2-methoxyethyl) ether

EC-No. : 203-924-4

Index-No. : 603-139-00-0

Component: Diethyleneglycol dimethylether: Included in the Candidate List of Substances of Very High Concern (SVHC) according to Regulation (EC) No. 1907/2006 (REACH)

Classification: Flam. Liq. 3; Repr. 1B; H226, H360FD

Concentration: <= 100 %

3.1.1. Formula

C₆H₁₄O₃

3.1.2. Molecular Weight (g/mol)

134.17

3.1.3. CAS-No.

111-96-6

4. FIRST AID MEASURES

4.1 Description of first-aid measures

General advice:

Show this material safety data sheet to the doctor in attendance.

After inhalation: fresh air. Call in physician.

In case of skin contact: Take off immediately all contaminated clothing. Rinse skin with water/ shower. Consult a physician.

After eye contact: rinse out with plenty of water. Call in ophthalmologist. Remove contact lenses.

After swallowing: immediately make victim drink water (two glasses at most). Consult a physician.

4.2 Most important symptoms and effects, both acute and delayed

The most important known symptoms and effects are described in the labelling (see section 2.2) and/or in section 11.

4.3 Indication of any immediate medical attention and special treatment needed

No data available.

5. FIRE-FIGHTING MEASURES

5.1 Extinguishing media

Suitable extinguishing media:

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

Unsuitable extinguishing media:

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

5.2 Special hazards arising from the substance or mixture

Carbon oxides

Combustible.

Vapors are heavier than air and may spread along floors.

Forms explosive mixtures with air at elevated temperatures.

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

5.3 Advice for firefighters

Stay in danger area only with self-contained breathing apparatus. Prevent skin contact by keeping a safe distance or by wearing suitable protective clothing.

5.4 Further information

Remove container from danger zone and cool with water. Prevent fire extinguishing water from contaminating surface water or the ground water system.

6. ACCIDENTAL RELEASE MEASURES

6.1 Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Keep away from heat and sources of ignition. Evacuate the danger area, observe emergency procedures, consult an expert.

For personal protection see section 8.

6.2 Environmental precautions

Do not let product enter drains. Risk of explosion.

6.3 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 carefully with liquid-absorbent material. Dispose of properly. Clean up affected area.

6.4 Reference to other sections

For disposal see section 13.

7. HANDLING AND STORAGE

7.1 Precautions for safe handling

Advice on safe handling:

Work under hood. Do not inhale substance/mixture. Avoid generation of vapours/aerosols.

Advice on protection against fire and explosion:

Keep away from open flames, hot surfaces and sources of ignition. Take precautionary measures against static discharge.

Hygiene measures:

Immediately change contaminated clothing. Apply preventive skin protection. Wash hands and face after working with substance.

For precautions see section 2.2.

7.2 Conditions for safe storage, including any incompatibilities

Storage conditions:

Keep container tightly closed in a dry and well-ventilated place. Keep away from heat and sources of ignition. Keep locked up or in an area accessible only to qualified or authorized persons.

Test for peroxide formation periodically and before distillation.

Storage class:

Storage class (TRGS 510): 3: Flammable liquids

7.3 Specific end use(s)

Apart from the uses mentioned in section 1.2 no other specific uses are stipulated.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

8.1 Control parameters

Ingredients with workplace control parameters:

Derived No Effect Level (DNEL):

Application Area - Routes of exposure - Health effect - Value:

Workers - Inhalation - Long-term systemic effects - 26,8 mg/m³

Workers - Skin contact - Long-term systemic effects - 2,08mg/kg BW/d

Consumers - Inhalation - Long-term systemic effects - 6,67 mg/m³

Consumers - Skin contact - Long-term systemic effects - 1,04mg/kg BW/d

Consumers - Ingestion - Long-term systemic effects - 1,04mg/kg BW/d

Predicted No Effect Concentration (PNEC):

Compartment - Value:

Water - 9,43 mg/l

Soil - 1,72 mg/kg

Sea water - 0,64 mg/l

Fresh water - 6,4 mg/l

Sea sediment - 2,74 mg/kg

Fresh water sediment - 27,4 mg/kg

Onsite sewage treatment plant - 50 mg/l

8.2 Exposure controls

Personal protective equipment:

Eye/face protection:

Use equipment for eye protection tested and approved under appropriate government standards such as NIOSH (US) or EN 166(EU). Safety glasses.

Skin protection:

This recommendation applies only to the product stated in the safety data sheet, supplied by us and for the designated use. When dissolving in or mixing with other substances and under conditions deviating from those stated in EN374 please contact the supplier of CE-approved gloves.

Body Protection:

Flame retardant antistatic protective clothing.

Respiratory protection:

Recommended Filter type: Filter A (acc. to DIN 3181) for vapours of organic compounds.

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are carried out according to the instructions of the producer.

These measures have to be properly documented.

Control of environmental exposure:

Do not let product enter drains. Risk of explosion.

9. PHYSICAL AND CHEMICAL PROPERTIES

9.1 Information on basic physical and chemical properties

- a) Physical state: clear, liquid
- b) Color: colorless
- c) Odor: ether-like
- d) Melting point/freezing point: Melting point/range: -64 °C - lit.
- e) Initial boiling point and boiling range: 162 °C - lit.
- f) Flammability (solid, gas): No data available
- g) Upper/lower flammability or explosive limits: Upper explosion limit: 17,4 %(V)
- h) Flash point: 57 °C - closed cup
- i) Autoignition temperature: not auto-flammable
- j) Decomposition temperature: > 165 °C
- k) pH: at 20 °C neutral
- l) Viscosity: Viscosity, kinematic: No data available; Viscosity, dynamic: 2 mPa.s at 20 °C
- m) Water solubility: at 20 °C soluble
- n) Partition coefficient: n-octanol/water: log Pow: -0,36 at 25 °C - Bioaccumulation is not expected., (External MSDS)
- o) Vapor pressure: 3,99 hPa at 20 °C
- p) Density: 0,943 g/cm³ at 25 °C - lit.; Relative density: No data available
- q) Relative vapor density: No data available
- r) Particle characteristics: No data available
- s) Explosive properties: No data available
- t) Oxidizing properties: none

9.2 Other safety information

Relative vapor density: 4,62 - (Air = 1.0)

10. STABILITY AND REACTIVITY

10.1 Reactivity

Formation of peroxides possible.
Vapor/air-mixtures are explosive at intense warming.

10.2 Chemical stability

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

10.3 Possibility of hazardous reactions

No data available

10.4 Conditions to avoid

Heating.
Moisture.

10.5 Incompatible materials

Strong oxidizing agents

10.6 Hazardous decomposition products

Peroxides
In the event of fire: see section 5

11. TOXICOLOGICAL INFORMATION

11.1 Information on toxicological effects

Acute toxicity:
LD50 Oral - Rat - 5.400 mg/kg
Remarks: Behavioral: Somnolence (general depressed activity).
Behavioral: Ataxia.
Respiratory disorder
(RTECS)
LC50 Inhalation - Rat - male and female - 7 h - > 11 mg/l - vapor
(OECD Test Guideline 403)
Dermal: No data available

Skin corrosion/irritation:
Skin - Rabbit
Result: No skin irritation - 24 h
(OECD Test Guideline 404)

Serious eye damage/eye irritation:
Eyes - Rabbit
Result: No eye irritation
(OECD Test Guideline 405)

Respiratory or skin sensitization:
No data available

Germ cell mutagenicity:
Test Type: unscheduled DNA synthesis assay
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 482
Result: negative

Test Type: Ames test
Test system: Salmonella typhimurium
Metabolic activation: with and without metabolic activation
Method: OECD Test Guideline 471
Result: negative

Test Type: Chromosome aberration test
Species: Rat

Cell type: Bone marrow
Application Route: inhalation (vapor)
Method: OECD Test Guideline 475
Result: negative

Carcinogenicity:
No data available

Reproductive toxicity:
May damage the unborn child.
May damage fertility.

Specific target organ toxicity - single exposure:
No data available

Specific target organ toxicity - repeated exposure:
No data available

Aspiration hazard:
No data available

11.2 Additional Information

Endocrine disrupting properties:
Product:

Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

RTECS: KN3339000

To the best of our knowledge, the chemical, physical, and toxicological properties have not been thoroughly investigated.

12. ECOLOGICAL INFORMATION

12.1 Toxicity

Toxicity to fish: LC50 - Pimephales promelas (fathead minnow) - 8.569 mg/l - 96 h

Remarks: (IUCLID)

Toxicity to daphnia and other aquatic invertebrates: semi-static test EC50 - Daphnia magna (Water flea) - 943 mg/l - 48 h (OECD Test Guideline 202)

Toxicity to algae: semi-static test ErC50 - Pseudokirchneriella subcapitata (green algae) - > 10.000 mg/l - 72 h (OECD Test Guideline 201)

Toxicity to bacteria: static test EC20 - activated sludge - 1.067 mg/l - 3 h (OECD Test Guideline 209)

Toxicity to daphnia and other aquatic invertebrates (Chronic toxicity): semi-static test NOEC - Daphnia magna (Water flea) - 320 mg/l - 21 d (OECD Test Guideline 211)

12.2 Persistence and degradability

Biodegradability: aerobic - Exposure time 28 d

Result: 67 % - Inherently biodegradable.
(OECD Test Guideline 302B)

12.3 Bioaccumulative potential

No data available

12.4 Mobility in soil

No data available

12.5 Results of PBT and vPvB assessment

This substance/mixture contains no components considered to be either persistent, bioaccumulative and toxic (PBT), or very persistent and very bioaccumulative (vPvB) at levels of 0.1% or higher.

12.6 Endocrine disrupting properties

Product:

Assessment: The substance/mixture does not contain components considered to have endocrine disrupting properties

according to REACH Article 57(f) or Commission Delegated regulation (EU) 2017/2100 or Commission Regulation (EU) 2018/605 at levels of 0.1% or higher.

12.7 Other adverse effects

No data available

13. DISPOSAL CONSIDERATIONS

13.1 Waste treatment methods

No data available

14. TRANSPORT INFORMATION

14.1 UN number

ADR/RID: 3271 IMDG: 3271 IATA: 3271

14.2 UN proper shipping name

ADR/RID: ETHERS, N.O.S. (Diethyleneglycol dimethylether)
IMDG: ETHERS, N.O.S. (Diethyleneglycol dimethylether)
IATA: Ethers, n.o.s. (Diethyleneglycol dimethylether)

14.3 Transport hazard class(es)

ADR/RID: 3 IMDG: 3 IATA: 3

14.4 Packaging group

ADR/RID: III IMDG: III IATA: III

14.5 Environmental hazards

ADR/RID: no IMDG Marine pollutant: no IATA: no

14.6 Special precautions for user

Tunnel restriction code: (D/E)
Further information: No data available

15. REGULATORY INFORMATION

15.1 Safety, health and environmental regulations/legislation specific for the substance or mixture

This material safety data sheet complies with the requirements of Regulation (EC) No. 1907/2006.

Authorisations and/or restrictions on use:

REACH - Candidate List of Substances of Very High Concern for Authorisation (Article 59): Diethyleneglycol dimethylether

This product contains a substance listed on Annex XIV of the REACH Regulation (EC) Nr. 1907/2006.

Listed substance / Sunset Date: Diethyleneglycol dimethylether / 22.08.2017

After the sunset date the use of this substance requires either an authorization or can only be used for exempted uses, e.g. use in scientific research and development which includes routine analytics or use as intermediate.

National legislation:

Seveso III: Directive 2012/18/EU of the European Parliament and of the Council on the control of major-accident hazards involving dangerous substances: FLAMMABLE LIQUIDS

Other regulations:

Observe work restrictions regarding maternity protection in accordance to Dir 92/85/EEC or stricter national regulations where applicable.

Take note of Dir 94/33/EC on the protection of young people at work.

15.2 Chemical Safety Assessment

A Chemical Safety Assessment has been carried out for this substance.

16. OTHER INFORMATION

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product. For lab use only!