

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Revision Date 12/13/2017

Version 1.2

SECTION 1. Identification**Product identifier**

Product number	808249
Product name	Triethylene glycol dimethyl ether (stabilised) for synthesis
CAS-No.	112-49-2

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

Identified uses	Chemical for synthesis
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Details of the supplier of the safety data sheet

Company	EMD Millipore Corporation 290 Concord Road, Billerica, MA 01821, United States of America General Inquiries: +1-978-715-4321 Monday to Friday, 9:00 AM to 4:00 PM Eastern Time (GMT-5) MilliporeSigma is a business of Merck KGaA, Darmstadt, Germany.
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Emergency telephone	800-424-9300 CHEMTREC (USA) +1-703-527-3887 CHEMTREC (International) 24 Hours/day; 7 Days/week
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SECTION 2. Hazards identification**GHS Classification**

Eye irritation, Category 2A, H319

Reproductive toxicity, Category 1B, H360

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

GHS-Labeling*Hazard pictograms**Signal Word*

Danger

Hazard Statements

H360 May damage fertility or the unborn child.

H319 Causes serious eye irritation.

Precautionary Statements

P201 Obtain special instructions before use.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

P202 Do not handle until all safety precautions have been read and understood.
P264 Wash skin thoroughly after handling.
P280 Wear protective gloves/ eye protection/ face protection.
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.
P337 + P313 If eye irritation persists: Get medical advice/ attention.
P405 Store locked up.
P501 Dispose of contents/ container to an approved waste disposal plant.

Other hazards

None known.

SECTION 3. Composition/information on ingredients

Formula	$\text{CH}_3\text{O}(\text{CH}_2\text{CH}_2\text{O})_3\text{CH}_3$	$\text{C}_8\text{H}_{18}\text{O}_4$ (Hill)
Molar mass	178.23 g/mol	

Hazardous ingredients

Chemical name (Concentration)

CAS-No.

1,2-Bis(2-methoxyethoxy)ethane (>= 90 % - <= 100 %)
112-49-2

Exact percentages are being withheld as a trade secret.

SECTION 4. First aid measures

Description of first-aid measures

Inhalation

After inhalation: fresh air. Call in physician.

Skin contact

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

Eye contact

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

Ingestion

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

Never give anything by mouth to an unconscious person.

Most important symptoms and effects, both acute and delayed

irritant effects

The following applies to ethers in general: the uptake of large quantities is followed by narcosis, cardiovascular disorders. Nausea and vomiting after swallowing.

Indication of any immediate medical attention and special treatment needed

No information available.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

SECTION 5. Fire-fighting measures

Extinguishing media

Suitable extinguishing media

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.

Forms explosive mixtures with air on intense heating.

Vapors are heavier than air and may spread along floors.

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

Advice for firefighters

Special protective equipment for fire-fighters

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

Further information

Prevent fire extinguishing water from contaminating surface water or the ground water system.

Suppress (knock down) gases/vapors/mists with a water spray jet.

SECTION 6. Accidental release measures

Personal precautions, protective equipment and emergency procedures

Advice for non-emergency personnel: Do not breathe vapors, aerosols. Avoid substance contact. Ensure adequate ventilation. Evacuate the danger area, observe emergency procedures, consult an expert.

Advice for emergency responders:

Protective equipment see section 8.

Environmental precautions

Do not let product enter 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 carefully with liquid-absorbent material (e.g. Chemizorb®). Dispose of properly. Clean up affected area.

SECTION 7. Handling and storage

Precautions for safe handling

Observe label precautions.

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

Conditions for safe storage, including any incompatibilities

Protected from light.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

Tightly closed. Keep in a well-ventilated place. Keep locked up or in an area accessible only to qualified or authorized persons.

Store below +30°C (+86°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

Immediately change contaminated clothing. Apply skin- protective barrier cream. Wash hands and face after working with substance.

Eye/face protection

Safety glasses

Hand protection

full contact:

Glove material:	butyl-rubber
Glove thickness:	0.7 mm
Break through time:	> 480 min

splash contact:

Glove material:	Viton (R)
Glove thickness:	0.70 mm
Break through time:	> 120 min

The protective gloves to be used must comply with the specifications of EC Directive 89/686/EEC and the related standard EN374, for example KCL 898 Butoject® (full contact), KCL 890 Vitoject® (splash contact).

The breakthrough times stated above were determined by KCL in laboratory tests acc. to EN374 with samples of the recommended glove types.

This recommendation applies only to the product stated in the safety data sheet and supplied by us as well as to the purpose specified by us. 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 (e.g. KCL GmbH, D-36124 Eichenzell, Internet: www.kcl.de).

Other protective equipment:

protective clothing

Respiratory protection

required when vapors/aerosols are generated.

Recommended Filter type: filter ABEK

The entrepreneur has to ensure that maintenance, cleaning and testing of respiratory protective devices are performed according to the instructions of the producer. These measures have to be properly documented.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

SECTION 9. Physical and chemical properties

Physical state	liquid
Color	colorless
Odor	odorless
Odor Threshold	Not applicable
pH	neutral
Melting point	-40 °F (-40 °C)

Boiling point/boiling range	410 - 446 °F (210 - 230 °C) at 1,013 hPa Method: DIN 53171
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Flash point	223 °F (106 °C) at 1,010 hPa Method: ISO 3679
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Evaporation rate	No information available.
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Flammability (solid, gas)	No information available.
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Lower explosion limit	0.7 %(V)
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Upper explosion limit	No information available.
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Vapor pressure	1.2 hPa at 68 °F (20 °C)
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Relative vapor density	No information available.
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Density	0.99 g/cm ³ at 68 °F (20 °C)
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Relative density	No information available.
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Water solubility	> 1,000 g/l at 68 °F (20 °C) Method: OECD Test Guideline 105
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Partition coefficient: n-octanol/water	log Pow: -0.52 (23 °C) OECD Test Guideline 107 Bioaccumulation is not expected.
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SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

Autoignition temperature 374 °F (190 °C)
at 999 hPa
Method: DIN 51794

Decomposition temperature No information available.

Viscosity, dynamic 3.7 mPa.s
at 68 °F (20 °C)

Explosive properties Not classified as explosive.

Oxidizing properties none

Ignition temperature 383 °F (195 °C)
Method: DIN 51794

SECTION 10. Stability and reactivity**Reactivity**

Formation of peroxides possible.

Forms explosive mixtures with air on intense heating.

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

Chemical stability

Sensitivity to light

Stabilizer

butyl hydroxytoluene (BHT)

Possibility of hazardous reactions

Violent reactions possible with:

Strong oxidizing agents

Conditions to avoid

Moisture.

Exposure to air.

Strong heating.

Incompatible materials

no information available

Hazardous decomposition products

Peroxides

SECTION 11. Toxicological information**Information on toxicological effects***Likely route of exposure*

Inhalation, Eye contact, Skin contact

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

Acute oral toxicity

LD50 Rat: 5,390 mg/kg
OECD Test Guideline 401

Acute inhalation toxicity

Symptoms: Possible damages:, mucosal irritations

Acute dermal toxicity

LD50 Rat: > 6,900 mg/kg
OECD Test Guideline 402

Skin irritation

Rabbit
Result: No irritation
OECD Test Guideline 404

Eye irritation

Rabbit
Result: Eye irritation
OECD Test Guideline 405

Causes serious eye irritation.

Sensitization

Local lymph node assay (LLNA) Mouse
Result: negative
Method: OECD Test Guideline 429

The value is given in analogy to the following substances: 1-Ethoxy-2-(2-methoxyethoxy)ethane

Genotoxicity in vitro

Ames test
Salmonella typhimurium
Result: negative
Method: OECD Test Guideline 471

Mutagenicity (mammal cell test): chromosome aberration.

Chinese hamster ovary cells
Result: negative
(National Toxicology Program)
sister chromatid exchange assay
Chinese hamster ovary cells
Result: negative
(National Toxicology Program)

CMR effects

Teratogenicity / Reproductive toxicity: May damage fertility or the unborn child.

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.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

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 component of this product present at levels greater than or equal to 0.1% is on OSHA's list of regulated carcinogens.

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

Further information

After absorption:

We have no description of any toxic symptoms.

Other dangerous properties can not be excluded.

Handle in accordance with good industrial hygiene and safety practice.

SECTION 12. Ecological information

Ecotoxicity

Toxicity to fish

static test LC50 Danio rerio (zebra fish): > 5,000 mg/l; 96 h

Analytical monitoring: yes

OECD Test Guideline 203

Toxicity to daphnia and other aquatic invertebrates

static test EC50 Daphnia magna (Water flea): > 5,000 mg/l; 48 h

Analytical monitoring: yes

OECD Test Guideline 202

Toxicity to algae

static test NOEC Pseudokirchneriella subcapitata (green algae): > 6,000 mg/l; 72 h

Analytical monitoring: yes

OECD Test Guideline 201

Toxicity to bacteria

static test activated sludge: > 5,000 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

Analytical monitoring: yes

OECD Test Guideline 211

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

Persistence and degradability

Biodegradability

15 %; 10 d; aerobic

OECD Test Guideline 302B

Not inherently biodegradable.

Bioaccumulative potential

Partition coefficient: n-octanol/water

log Pow: -0.52 (23 °C)

OECD Test Guideline 107

Bioaccumulation is not expected.

Mobility in soil

No information available.

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.

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

SARA 313

The following components are subject to reporting levels established by SARA Title III, Section 313:

Ingredients

1,2-Bis(2-methoxyethoxy)ethane	112-49-2	99.9 %
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SARA 302

No chemicals in this material are subject to the reporting requirements of SARA Title III, Section 302.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

Clean Water Act

This product does not contain any Hazardous Substances listed under the U.S. CleanWater Act, Section 311, Table 116.4A.

This product does not contain any Hazardous Chemicals listed under the U.S. CleanWater Act, Section 311, Table 117.3.

This product does not contain any toxic pollutants listed under the U.S. Clean Water Act Section 307

DEA List I

Not listed

DEA List II

Not listed

TSCA 12b

Ingredients

1,2-Bis(2-methoxyethoxy)ethane 112-49-2

US State Regulations

Massachusetts Right To Know

Remarks

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

Pennsylvania Right To Know

Ingredients

1,2-Bis(2-methoxyethoxy)ethane

New Jersey Right To Know

Ingredients

1,2-Bis(2-methoxyethoxy)ethane

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:

All components of the product are listed in the TSCA-inventory.

DSL:

All components of this product are on the Canadian DSL

SECTION 16. Other information

Training advice

Provide adequate information, instruction and training for operators.

SAFETY DATA SHEET

according to the (US) Hazard Communication Standard (29 CFR 1910.1200)

Product number
Product name

808249

Triethylene glycol dimethyl ether (stabilised) for synthesis

Version 1.2

Labeling

Hazard pictograms



Signal Word

Danger

Hazard Statements

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

EUH019 May form explosive peroxides.

Precautionary Statements

Prevention

P201 Obtain special instructions before use.

Response

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.

Restricted to professional users.

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

H319 Causes serious eye irritation.

H360 May damage fertility or the unborn child.

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 12/13/2017

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.

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