

SAFETY DATA SHEETS

According to the UN GHS revision 9

Version: 1.1
Creation Date: July 15, 2019
Revision Date: April 26, 2024

SECTION 1: Identification

1.1 GHS Product identifier

Product name Ethyleneglycol-Monomethyl Ether

1.2 Other means of identification

Product number CCEM500547

Other names Ethylene glycol monomethyl ether,Methyl glycol; SOLVENT S; Ethanol, 2-methoxy-

1.3 Recommended use of the chemical and restrictions on use

Identified uses For laboratory and Industrial use only.

Uses advised against no data available

1.4 Supplier's details

Company CATO Research Chemicals Inc.

Address 3/F,Building B,No.179 BASIGO, Guangpu Rd East,Huangpu Dist,Guangzhou

Telephone +86-20-81960175

1.5 Emergency phone number

Emergency phone number +86-20-81960175

Service hours 'Monday to Friday, 9am-5pm (Standard time zone: UTC/GMT +8 hours).

SECTION 2: Hazard identification

2.1 Classification of the substance or mixture

Flammable liquids, Category 3

Acute toxicity - Category 4, Oral

Acute toxicity - Category 4, Dermal

Acute toxicity - Category 4, Inhalation

Reproductive toxicity, Category 1B

2.2 GHS label elements, including precautionary statements

Pictogram(s)



Signal word

Danger

Hazard statement(s)

H226 Flammable liquid and vapour

H302 Harmful if swallowed

H312 Harmful in contact with skin

H332 Harmful if inhaled

Precautionary statement(s)

Prevention

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.

P242 Use non-sparking tools.

P243 Take action to prevent static discharges.

P280 Wear protective gloves/protective clothing/eye protection/face protection/hearing protection/...

P264 Wash ... thoroughly after handling.

P270 Do not eat, drink or smoke when using this product.

P261 Avoid breathing dust/fume/gas/mist/vapours/spray.

P271 Use only outdoors or in a well-ventilated area.

P203 Obtain, read and follow all safety instructions before use.

Response	P303+P361+P353 IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse affected areas with water [or shower]. P370+P378 In case of fire: Use ... to extinguish. P301+P317 IF SWALLOWED: Get medical help. P330 Rinse mouth. P302+P352 IF ON SKIN: Wash with plenty of water/... P317 Get medical help. P321 Specific treatment (see ... on this label). P362+P364 Take off contaminated clothing and wash it before reuse. P304+P340 IF INHALED: Remove person to fresh air and keep comfortable for breathing. P318 IF exposed or concerned, get medical advice.
Storage	P403+P235 Store in a well-ventilated place. Keep cool. P405 Store locked up.
Disposal	P501 Dispose of contents/container to an appropriate treatment and disposal facility in accordance with applicable laws and regulations, and product characteristics at time of disposal.

2.3 Other hazards which do not result in classification

no data available

SECTION 3: Composition/information on ingredients

3.1 Substances

Chemical name	Common names and synonyms	CAS number	EC number	Concentration
Ethyleneglycol-Monomethyl Ether	2-methoxyethanol	109-86-4	203-713-7	100%

SECTION 4: First-aid measures

4.1 Description of necessary first-aid measures

If inhaled

Fresh air, rest. Refer for medical attention.

Following skin contact

Remove contaminated clothes. Rinse skin with plenty of water or shower. Refer for medical attention .

Following eye contact

First rinse with plenty of water for several minutes (remove contact lenses if easily possible), then refer for medical attention.

Following ingestion

Rinse mouth. Give one or two glasses of water to drink. Refer for medical attention .

4.2 Most important symptoms/effects, acute and delayed

Irritation of skin and eyes. Chronic exposure may also cause weakness, sleepiness, headache, gastrointestinal upset, weight loss, change of personality. (USCG, 1999)

4.3 Indication of immediate medical attention and special treatment needed, if necessary

Immediate first aid: Ensure that adequate decontamination has been carried out. If patient is not breathing, start artificial respiration, preferably with a demand-valve resuscitator, bag-valve-mask device, or pocket mask, as trained. Perform CPR as necessary. Immediately flush contaminated eyes with gently flowing water. Do not induce vomiting. If vomiting occurs, lean patient forward or place on left side (head-down position, if possible) to maintain an open airway and prevent aspiration. Keep patient quiet and maintain normal body temperature. Obtain medical attention. Ethylene glycol, glycols, and related compounds

SECTION 5: Fire-fighting measures

5.1 Suitable extinguishing media

Use water spray, powder, alcohol-resistant foam, carbon dioxide.

5.2 Specific hazards arising from the chemical

Excerpt from ERG Guide 127 [Flammable Liquids (Water-Miscible)]: HIGHLY FLAMMABLE: Will be easily ignited by heat, sparks or flames. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Most vapors are heavier than air. They will spread along ground and collect in low or confined areas (sewers, basements, tanks). Vapor explosion hazard indoors, outdoors or in sewers. Those substances designated with a (P) may polymerize explosively when heated or involved in a fire. Runoff to sewer may create fire or explosion hazard. Containers may explode when heated. Many liquids are lighter than water. (ERG, 2016)

5.3 Special protective actions for fire-fighters

Use water spray, powder, alcohol-resistant foam, carbon dioxide. In case of fire: keep drums, etc., cool by spraying with water.

SECTION 6: Accidental release measures

6.1 Personal precautions, protective equipment and emergency procedures

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Wash away remainder with plenty of water.

6.2 Environmental precautions

Personal protection: filter respirator for organic gases and vapours adapted to the airborne concentration of the substance. Ventilation. Remove all ignition sources. Collect leaking and spilled liquid in sealable containers as far as possible. Wash away remainder with plenty of water.

6.3 Methods and materials for containment and cleaning up

Contain spillage, and then collect with an electrically protected vacuum cleaner or by wet-brushing and place in container for disposal according to local regulations

SECTION 7: Handling and storage

7.1 Precautions for safe handling

NO open flames, NO sparks and NO smoking. Above 39°C use a closed system, ventilation and explosion-proof electrical equipment. Handling in a well ventilated place. Wear suitable protective clothing. Avoid contact with skin and eyes. Avoid formation of dust and aerosols. Use non-sparking tools. Prevent fire caused by electrostatic discharge steam.

7.2 Conditions for safe storage, including any incompatibilities

Fireproof. Separated from strong oxidants and food and feedstuffs. Keep in the dark. Cool. Fireproof. Separated from strong oxidants and food and feedstuffs. Keep in the dark. Cool.

SECTION 8: Exposure controls/personal protection

8.1 Control parameters

Occupational Exposure limit values

TLV: 0.1 ppm as TWA; (skin); BEI issued. MAK: 3.2 mg/m³, 1 ppm; peak limitation category: II(8); skin absorption (H); pregnancy risk group: B. EU-OEL: 1 ppm as TWA; (skin)

Biological limit values

no data available

8.2 Appropriate engineering controls

Ensure adequate ventilation. Handle in accordance with good industrial hygiene and safety practice. Set up emergency exits and the risk-elimination area.

8.3 Individual protection measures, such as personal protective equipment (PPE)

Eye/face protection

Wear face shield or eye protection in combination with breathing protection.

Skin protection

Protective gloves. Protective clothing.

Respiratory protection

Use ventilation, local exhaust or breathing protection.

Thermal hazards

no data available

SECTION 9: Physical and chemical properties and safety characteristics

Physical state	Liquid.
Colour	Colourless.
Odour	Mild agreeable odor
Melting point/freezing point	≤ -85.1 °C. Atm. press.: 1 atm.
Boiling point or initial boiling point and boiling range	≥ 124.34 °C. Atm. press.: Ca. 760 mm Hg.
Flammability	Class II Combustible Liquid: Fl.P. at or above 100°F and below 140°F.
Lower and upper explosion limit/flammability limit	2.5%-19.8% (in air)
Flash point	42 °C. Atm. press.: 1 atm.
Auto-ignition temperature	285 °C. Atm. press.: 1 atm.
Decomposition temperature	no data available
pH	no data available
Kinematic viscosity	dynamic viscosity (in mPa s) = 1.72. Temperature: 20°C.
Solubility	Miscible with water
Partition coefficient n-octanol/water	log Pow = -0.77. Temperature: 28 °C.

Vapour pressure	9.5 mm Hg. Temperature: 25 °C. Remarks: Equivalent to 12.7 hPa at 25 °C.
Density and/or relative density	Ca. 0.97 g/cm ³ . Temperature: 20 °C.
Relative vapour density	2.62 (vs air)
Particle characteristics	no data available

SECTION 10: Stability and reactivity

10.1 Reactivity

The substance can form explosive peroxides. Reacts with strong oxidants. This generates fire and explosion hazard. Attacks some forms of plastic and coatings.

10.2 Chemical stability

Heat contributes to instability

10.3 Possibility of hazardous reactions

Flammable ETHYLENE GLYCOL MONOMETHYL ETHER is incompatible with oxygen and strong oxidizing agents. Contact with bases may result in decomposition. Incompatible with acid chlorides and acid anhydrides. (NTP, 1992). It forms explosive peroxides.

10.4 Conditions to avoid

no data available

10.5 Incompatible materials

Ethylene glycol monomethyl ether /in air/ forms peroxides that are highly explosive.

10.6 Hazardous decomposition products

Thermal decomposition 204 - 232 deg C

SECTION 11: Toxicological information

Acute toxicity

- Oral: LD50 - rat (male) - 2 257 mg/kg bw. Remarks: Results for fasted animals.
- Inhalation: LC0 - rat (male) - > 15.8 mg/L air.
- Dermal: LD50 - rabbit (male) - 3 930 mg/kg bw.

Skin corrosion/irritation

no data available

Serious eye damage/irritation

no data available

Respiratory or skin sensitization

no data available

Germ cell mutagenicity

no data available

Carcinogenicity

no data available

Reproductive toxicity

no data available

STOT-single exposure

The substance is mildly irritating to the eyes and respiratory tract. The substance may cause effects on the central nervous system, blood, bone marrow, kidneys and liver. Exposure at high levels could cause unconsciousness. Medical observation is indicated.

STOT-repeated exposure

The substance defats the skin, which may cause dryness or cracking. The substance may have effects on the blood and bone marrow. This may result in anaemia and lesions of blood cells. May cause toxicity to human reproduction or development.

Aspiration hazard

A harmful contamination of the air can be reached rather quickly on evaporation of this substance at 20°C.

SECTION 12: Ecological information

12.1 Toxicity

- Toxicity to fish: LC50 - *Lepomis macrochirus* - > 10 000 mg/L - 96 h.
- Toxicity to daphnia and other aquatic invertebrates: EC50 - *Daphnia magna* - 27 000 mg/L - 48 h.
- Toxicity to algae: EC50 - *Pseudokirchneriella subcapitata* (previous names: *Raphidocelis subcapitata*, *Selenastrum capricornutum*) - 25 500 mg/L - 72 h.

- Toxicity to microorganisms: EC50 - activated sludge of a predominantly domestic sewage - > 1 000 mg/L - 3 h. Remarks:Respiration rate.

12.2 Persistence and degradability

AEROBIC: Biodegradation of 2-methoxyethanol (100-1000 mg/L) with activated sludge at 20 degrees C for 10 days resulted in 64.7% theoretical BOD(1). Biodegradation of 2-methoxyethanol at 3, 7, and 10 mg/L with filtered sewage seed in fresh water resulted in 30% theoretical BOD in 5 days and 88% theoretical BOD in 20 days; in salt water 6% theoretical BOD in 5 days and 39% theoretical BOD in 20 days was observed(2). Sewage seed degraded 2-methoxyethanol over 5 days resulting in 7% theoretical BOD using unadapted seed and 30% theoretical BOD using adapted seed(3). 2-Methoxyethanol, present at 100 mg/L, reached 83-94% of its theoretical BOD in 2 weeks using an activated sludge inoculum at 30 mg/L in the Japanese Ministry of Trade and Industry (MITI) test(4).

12.3 Bioaccumulative potential

An estimated BCF of 3 was calculated in fish for 2-methoxyethanol(SRC), using a log Kow of -0.77(1) and a regression-derived equation(2). According to a classification scheme(3), this BCF suggests the potential for bioconcentration in aquatic organisms is low(SRC).

12.4 Mobility in soil

The Koc of 2-methoxyethanol is estimated as 1(SRC), using a log Kow of -0.77(1) and a regression-derived equation(2). According to a classification scheme(3), this estimated Koc value suggests that 2-methoxyethanol is expected to have very high mobility in soil(SRC).

12.5 Other adverse effects

no data available

SECTION 13: Disposal considerations

13.1 Disposal methods

Product

The material can be disposed of by removal to a licensed chemical destruction plant or by controlled incineration with flue gas scrubbing. Do not contaminate water, foodstuffs, feed or seed by storage or disposal. Do not discharge to sewer systems.

Contaminated packaging

Containers can be triply rinsed (or equivalent) and offered for recycling or reconditioning. Alternatively, the packaging can be punctured to make it unusable for other purposes and then be disposed of in a sanitary landfill. Controlled incineration with flue gas scrubbing is possible for combustible packaging materials.

SECTION 14: Transport information

14.1 UN Number

ADR/RID: UN1188 (For reference only, please check.) IMDG: UN1188 (For reference only, please check.) IATA: UN1188 (For reference only, please check.)

14.2 UN Proper Shipping Name

ADR/RID: ETHYLENE GLYCOL MONOMETHYL ETHER (For reference only, please check.) IMDG: ETHYLENE GLYCOL MONOMETHYL ETHER (For reference only, please check.) IATA: ETHYLENE GLYCOL MONOMETHYL ETHER (For reference only, please check.)

14.3 Transport hazard class(es)

ADR/RID: 3 (For reference only, please check.) IMDG: 3 (For reference only, please check.) IATA: 3 (For reference only, please check.)

14.4 Packing group, if applicable

ADR/RID: III (For reference only, please check.) IMDG: III (For reference only, please check.) IATA: III (For reference only, please check.)

14.5 Environmental hazards

ADR/RID: No IMDG: No IATA: No

14.6 Special precautions for user

no data available

14.7 Transport in bulk according to IMO instruments

no data available

SECTION 15: Regulatory information

15.1 Safety, health and environmental regulations specific for the product in question

Chemical name	Common names and synonyms	CAS number	EC number
2-methoxyethanol	2-methoxyethanol	109-86-4	203-713-7

European Inventory of Existing Commercial Chemical Substances (EINECS)	Listed.
EC Inventory	Listed.
United States Toxic Substances Control Act (TSCA) Inventory	Listed.
China Catalog of Hazardous chemicals 2015	Listed.
New Zealand Inventory of Chemicals (NZIoC)	Listed.
Philippines Inventory of Chemicals and Chemical Substances (PICCS)	Listed.
Vietnam National Chemical Inventory	Listed.
Chinese Chemical Inventory of Existing Chemical Substances (China IECSC)	Listed.
Korea Existing Chemicals List (KECL)	Listed.

SECTION 16: Other information

Information on revision

Creation Date July 15, 2019
Revision Date April 26, 2024

Abbreviations and acronyms

- CAS: Chemical Abstracts Service
- ADR: European Agreement concerning the International Carriage of Dangerous Goods by Road
- RID: Regulation concerning the International Carriage of Dangerous Goods by Rail
- IMDG: International Maritime Dangerous Goods
- IATA: International Air Transportation Association
- TWA: Time Weighted Average
- STEL: Short term exposure limit
- LC50: Lethal Concentration 50%
- LD50: Lethal Dose 50%
- EC50: Effective Concentration 50%

References

- IPCS - The International Chemical Safety Cards (ICSC), website: <http://www.ilo.org/dyn/icsc/showcard.home>
- HSDB - Hazardous Substances Data Bank, website: <https://toxnet.nlm.nih.gov/newtoxnet/hsdb.htm>
- IARC - International Agency for Research on Cancer, website: <http://www.iarc.fr/>
- eChemPortal - The Global Portal to Information on Chemical Substances by OECD, website: http://www.echemportal.org/echemportal/index?pageID=0&request_locale=en
- CAMEO Chemicals, website: <http://cameochemicals.noaa.gov/search/simple>
- ChemIDplus, website: <http://chem.sis.nlm.nih.gov/chemidplus/chemidlite.jsp>
- ERG - Emergency Response Guidebook by U.S. Department of Transportation, website: <http://www.phmsa.dot.gov/hazmat/library/erg>
- Germany GESTIS-database on hazard substance, website: <http://www.dguv.de/ifa/gestis/gestis-stoffdatenbank/index-2.jsp>
- ECHA - European Chemicals Agency, website: <https://echa.europa.eu/>

Other Information

Depending on the degree of exposure, periodic medical examination is indicated. The odour warning when the exposure limit value is exceeded is insufficient. Check for peroxides prior to distillation; eliminate if found.

Any questions regarding this SDS, Please send your inquiry to info@cato-chem.com

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