

ALFAAA17459

2-Methoxyethanol

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

产品说明: 2-甲氧基乙醇
Product Description: 2-Methoxyethanol

Cat No. : A17459
Synonyms EGME; Ethylene glycol methyl ether; Methyl Cellosolve
CAS No 109-86-4
Molecular Formula C3H8O2

Supplier Avocado Research Chemicals Ltd.
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CHEMTREC Tel. No. **US**:001-800-424-9300 / **Europe**:001-703-527-3887

E-mail address begel.sdsdesk@thermofisher.com

Recommended Use Laboratory chemicals.
Uses advised against No Information available

SECTION 2. HAZARD IDENTIFICATION

Physical State
Liquid

Appearance
Clear

Odor
Ether

Emergency Overview

Flammable liquid and vapor. May damage fertility or the unborn child. Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes damage to organs. May cause damage to organs through prolonged or repeated exposure. Sensitivity to light. Air sensitive.

Classification of the substance or mixture

Flammable liquids.	Category 3
Acute Oral Toxicity	Category 4
Acute Dermal Toxicity	Category 4
Acute Inhalation Toxicity - Vapors	Category 4
Reproductive Toxicity	Category 1B
Specific target organ toxicity - (single exposure)	Category 1
Specific target organ toxicity - (repeated exposure)	Category 2

Label Elements

2-Methoxyethanol



Signal Word

Danger

Hazard Statements

H226 - Flammable liquid and vapor

H370 - Causes damage to organs

H373 - May cause damage to organs through prolonged or repeated exposure

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

H360 - May damage fertility or the unborn child

Precautionary Statements**Prevention**

P201 - Obtain special instructions before use

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

P240 - Ground and bond container and receiving equipment

P242 - Use non-sparking tools

P243 - Take action to prevent static discharges

P260 - Do not breathe dust/fume/gas/mist/vapors/spray

P264 - Wash face, hands and any exposed skin 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 gloves/protective clothing/eye protection/face protection

Response

P303 + P361 + P353 - IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water or shower

P304 + P340 - IF INHALED: Remove person to fresh air and keep comfortable for breathing

P330 - Rinse mouth

P370 + P378 - In case of fire: Use dry sand, dry chemical or alcohol-resistant foam to extinguish

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

P308 + P311 - IF exposed or concerned: Call a POISON CENTER or doctor

Storage

P403 + P233 - Store in a well-ventilated place. Keep container tightly closed

Disposal

P501 - Dispose of contents/ container to an approved waste disposal plant

Physical and Chemical Hazards

Vapors may cause flash fire or explosion. Flammable liquid.

Health Hazards

May damage fertility or the unborn child. Harmful if swallowed. Harmful in contact with skin. Harmful if inhaled. Causes damage to organs. May cause damage to organs through prolonged or repeated exposure.

Environmental hazards

Contains no substances known to be hazardous to the environment or not degradable in waste water treatment plants. Will likely be mobile in the environment due to its water solubility. The product is water soluble, and may spread in water systems.

Other Hazards

Toxic to terrestrial vertebrates. This product does not contain any known or suspected endocrine disruptors.

SECTION 3. COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS No	Weight %
2-Methoxyethanol	109-86-4	> 98

2-Methoxyethanol

SECTION 4. FIRST AID MEASURES**General Advice**

If symptoms persist, call a physician.

Eye Contact

Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention.

Skin Contact

Wash off immediately with plenty of water for at least 15 minutes. If skin irritation persists, call a physician.

Inhalation

Remove to fresh air. If not breathing, give artificial respiration. Get medical attention if symptoms occur.

Ingestion

Clean mouth with water and drink afterwards plenty of water.

Most important symptoms and effects

Difficulty in breathing. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting

Self-Protection of the First Aider

Ensure that medical personnel are aware of the material(s) involved, take precautions to protect themselves and prevent spread of contamination.

Notes to Physician

Treat symptomatically. Symptoms may be delayed.

SECTION 5. FIRE-FIGHTING MEASURES**Suitable Extinguishing Media**

Water spray, carbon dioxide (CO₂), dry chemical, alcohol-resistant foam. Water mist may be used to cool closed containers.

Extinguishing media which must not be used for safety reasons

Do not use a solid water stream as it may scatter and spread fire.

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back. Containers may explode when heated. Thermal decomposition can lead to release of irritating gases and vapors. Keep product and empty container away from heat and sources of ignition. Vapors may form explosive mixtures with air.

Protective Equipment and Precautions for Firefighters

As in any fire, wear self-contained breathing apparatus pressure-demand, MSHA/NIOSH (approved or equivalent) and full protective gear.

SECTION 6. ACCIDENTAL RELEASE MEASURES**Personal Precautions**

Use personal protective equipment as required. Ensure adequate ventilation. Remove all sources of ignition. Take precautionary measures against static discharges.

Environmental Precautions

Should not be released into the environment.

Methods for Containment and Clean Up

Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. Remove all sources of ignition. Take precautionary measures against static discharges. Use spark-proof tools and explosion-proof equipment.

2-Methoxyethanol

Refer to protective measures listed in Sections 8 and 13.

SECTION 7. HANDLING AND STORAGE

Handling

Wear personal protective equipment/face protection. Do not get in eyes, on skin, or on clothing. Ensure adequate ventilation. Avoid ingestion and inhalation. Keep away from open flames, hot surfaces and sources of ignition. Use only non-sparking tools. Use spark-proof tools and explosion-proof equipment. Take precautionary measures against static discharges.

Storage

Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat, sparks and flame. Flammables area.

Specific Use(s)

Use in laboratories

SECTION 8. EXPOSURE CONTROLS/PERSONAL PROTECTION

Control Parameters

Component	China	Taiwan	Thailand	Hong Kong
2-Methoxyethanol	TWA: 15 mg/m ³ Skin	TWA: 5 ppm TWA: 16 mg/m ³		TWA: 5 ppm TWA: 16 mg/m ³

Component	ACGIH TLV	OSHA PEL	NIOSH	The United Kingdom	European Union
2-Methoxyethanol	TWA: 0.1 ppm Skin	(Vacated) TWA: 25 ppm (Vacated) TWA: 80 mg/m ³ Skin TWA: 25 ppm TWA: 80 mg/m ³	IDLH: 200 ppm TWA: 0.1 ppm TWA: 0.3 mg/m ³	STEL: 3 ppm 15 min STEL: 9 mg/m ³ 15 min TWA: 1 ppm 8 hr TWA: 3 mg/m ³ 8 hr Skin	TWA: 1 ppm (8h) Skin

Legend

ACGIH - American Conference of Governmental Industrial Hygienists

OSHA - Occupational Safety and Health Administration

NIOSH: NIOSH - National Institute for Occupational Safety and Health

Monitoring methods

BS EN 14042:2003 Title Identifier: Workplace atmospheres. Guide for the application and use of procedures for the assessment of exposure to chemical and biological agents. MDHS70 General methods for sampling airborne gases and vapours MDHS 88 Volatile organic compounds in air. Laboratory method using diffusive samplers, solvent desorption and gas chromatography MDHS 96 Volatile organic compounds in air - Laboratory method using pumped solid sorbent tubes, solvent desorption and gas chromatography

Exposure Controls**Engineering Measures**

Use only under a chemical fume hood. Use explosion-proof electrical/ventilating/lighting equipment. Ensure that eyewash stations and safety showers are close to the workstation location. Ensure adequate ventilation, especially in confined areas. Wherever possible, engineering control measures such as the isolation or enclosure of the process, the introduction of process or equipment changes to minimise release or contact, and the use of properly designed ventilation systems, should be adopted to control hazardous materials at source.

Personal protective equipment

Eye Protection Wear safety glasses with side shields (or goggles) (European standard - EN 166)

Hand Protection Protective gloves

Glove material	Breakthrough time	Glove thickness	EU standard	Glove comments
Nitrile rubber Viton (R)	See manufacturers recommendations	-	EN 374	(minimum requirement)

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Inspect gloves before use.

Please observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information)

Ensure gloves are suitable for the task: Chemical compatibility, Dexterity, Operational conditions, User susceptibility, e.g. sensitisation effects, also take into consideration the specific local conditions under which the product is used, such as the danger of cuts, abrasion.

Remove gloves with care avoiding skin contamination.

Skin and body protection	Long sleeved clothing
Respiratory Protection	When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly
Large scale/emergency use	Use a NIOSH/MSHA or European Standard EN 136 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced Recommended Filter type: Organic gases and vapours filter Type A Brown conforming to EN14387
Small scale/Laboratory use	Use a NIOSH/MSHA or European Standard EN 149:2001 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced. Recommended half mask:- Valve filtering: EN405; or; Half mask: EN140; plus filter, EN 141 When RPE is used a face piece Fit Test should be conducted
Hygiene Measures	Handle in accordance with good industrial hygiene and safety practice.
Environmental exposure controls	No information available.

SECTION 9. PHYSICAL AND CHEMICAL PROPERTIES

Appearance	Clear	
Physical State	Liquid	
Odor	Ether	
Odor Threshold	No data available	
pH	No information available	
Melting Point/Range	-85 °C / -121 °F	
Softening Point	No data available	
Boiling Point/Range	124 °C / 255.2 °F	@ 760 mmHg
Flash Point	38 °C / 100.4 °F	Method - No information available
Evaporation Rate	0.53 (Butyl Acetate = 1.0)	
Flammability (solid,gas)	Not applicable	Liquid
Explosion Limits	No data available	
Vapor Pressure	9.5 mmHg @ 25 °C	
Vapor Density	2.62 (Air = 1.0)	(Air = 1.0)
Specific Gravity / Density	.9600	
Bulk Density	Not applicable	Liquid
Water Solubility	Miscible	
Solubility in other solvents	No information available	
Partition Coefficient (n-octanol/water)		
Component	log Pow	
2-Methoxyethanol	-0.77	
Autoignition Temperature	285 - °C / 545 - °F	
Decomposition Temperature	No data available	
Viscosity	No data available	
Explosive Properties		explosive air/vapour mixtures possible
Oxidizing Properties	No information available	

2-Methoxyethanol

Molecular Formula	C3H8O2
Molecular Weight	76.09
VOC Content(%)	98

SECTION 10. STABILITY AND REACTIVITY

Stability	Light sensitive. Air sensitive. Reacts with air to form peroxides. heat sensitive.
Hazardous Reactions	None under normal processing. May form explosive peroxides.
Hazardous Polymerization	Hazardous polymerization does not occur.
Conditions to Avoid	Keep away from open flames, hot surfaces and sources of ignition. Incompatible products. Excess heat. Exposure to light. Exposure to air over prolonged period.
Materials to avoid	Strong oxidizing agents. Acids. Bases. Copper alloys. copper.
Hazardous Decomposition Products	Carbon monoxide (CO). Carbon dioxide (CO ₂). peroxides. Methanol.

SECTION 11. TOXICOLOGICAL INFORMATION

Product Information

(a) acute toxicity;

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
2-Methoxyethanol	LD50 = 2370 mg/kg (Rat)	LD50 = 1280 mg/kg (Rabbit)	LC50 = 1478 ppm (Rat) 7 h

(b) skin corrosion/irritation;	Based on available data, the classification criteria are not met
(c) serious eye damage/irritation;	Based on available data, the classification criteria are not met
(d) respiratory or skin sensitization;	
Respiratory	Based on available data, the classification criteria are not met
Skin	Based on available data, the classification criteria are not met
(e) germ cell mutagenicity;	Based on available data, the classification criteria are not met
(f) carcinogenicity;	Based on available data, the classification criteria are not met
	There are no known carcinogenic chemicals in this product
(g) reproductive toxicity;	Category 1B
Teratogenicity	Teratogenic effects have occurred in experimental animals.
(h) STOT-single exposure;	Category 1
Results / Target organs	Immune system
(i) STOT-repeated exposure;	Category 2
Target Organs	Thymus.
(j) aspiration hazard;	Based on available data, the classification criteria are not met

2-Methoxyethanol

Symptoms / effects, both acute and delayed Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting delayed

SECTION 12. ECOLOGICAL INFORMATION

Ecotoxicity effects Do not empty into drains. .

Component	Freshwater Fish	Water Flea	Freshwater Algae	Microtox
2-Methoxyethanol	LC50: = 9650 mg/L, 96h static (Lepomis macrochirus) LC50: = 16000 mg/L, 96h static (Oncorhynchus mykiss) LC50: = 10000 mg/L, 96h static (Lepomis macrochirus)			

Persistence and Degradability**Persistence**

Soluble in water, Persistence is unlikely, based on information available, Miscible with water.

Bioaccumulative Potential

Bioaccumulation is unlikely

Component	log Pow	Bioconcentration factor (BCF)
2-Methoxyethanol	-0.77	No data available

Mobility in soil

The product is water soluble, and may spread in water systems Will likely be mobile in the environment due to its water solubility Highly mobile in soils

Endocrine Disruptor Information

This product does not contain any known or suspected endocrine disruptors

Persistent Organic Pollutant

This product does not contain any known or suspected substance

Ozone Depletion Potential

This product does not contain any known or suspected substance

SECTION 13. DISPOSAL CONSIDERATIONS

Waste from Residues/Unused Products

Waste is classified as hazardous. Dispose of in accordance with the European Directives on waste and hazardous waste. Dispose of in accordance with local regulations.

Contaminated Packaging

Dispose of this container to hazardous or special waste collection point. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep product and empty container away from heat and sources of ignition.

Other Information

Waste codes should be assigned by the user based on the application for which the product was used. Do not flush to sewer. Can be landfilled or incinerated, when in compliance with local regulations.

SECTION 14. TRANSPORT INFORMATION

Road and Rail Transport

UN-No	UN1188
Proper Shipping Name	ETHYLENE GLYCOL MONOMETHYL ETHER
Hazard Class	3
Packing Group	III

2-Methoxyethanol

IMDG/IMO

UN-No UN1188
 Proper Shipping Name ETHYLENE GLYCOL MONOMETHYL ETHER
 Hazard Class 3
 Packing Group III

IATA

UN-No UN1188
 Proper Shipping Name ETHYLENE GLYCOL MONOMETHYL ETHER
 Hazard Class 3
 Packing Group III

Special Precautions for User No special precautions required

SECTION 15. REGULATORY INFORMATION**International Inventories**

X = listed, China (IECSC), Europe (EINECS/ELINCS/NLP), U.S.A. (TSCA), Canada (DSL/NDSL), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), Korea (KECL).

Component	The Inventory of Hazardous Chemicals (2015 Edition)	List of dangerous goods GB 12268 - 2012	TCSI	IECSC	EINECS	TSCA	DSL	PICCS	ENCS	ISHL	AICS	KECL
2-Methoxyethanol	X	X	X	X	203-713-7	X	X	X	X	X	X	KE-23272

National Regulations

Component	Toxic Chemical Substances Control Act
2-Methoxyethanol 109-86-4 (> 98)	Class II (1 wt%) TRQ = 50 kg

SECTION 16. OTHER INFORMATION

Prepared By Health, Safety and Environmental Department
 Creation Date 11-Jun-2014
 Revision Date 27-Apr-2024
 Revision Summary New emergency telephone response service provider.

Training Advice

Chemical hazard awareness training, incorporating labelling, Safety Data Sheets (SDS), Personal Protective Equipment (PPE) and hygiene.

Use of personal protective equipment, covering appropriate selection, compatibility, breakthrough thresholds, care, maintenance, fit and standards.

First aid for chemical exposure, including the use of eye wash and safety showers.

Fire prevention and fighting, identifying hazards and risks, static electricity, explosive atmospheres posed by vapours and dusts.

Chemical incident response training.

Legend

CAS - Chemical Abstracts Service

TSCA - United States Toxic Substances Control Act Section 8(b)
Inventory

EINECS/ELINCS - European Inventory of Existing Commercial Chemical

2-Methoxyethanol

Substances/EU List of Notified Chemical Substances

DSL/NDL - Canadian Domestic Substances List/Non-Domestic Substances List

PICCS - Philippines Inventory of Chemicals and Chemical Substances

ENCS - Japanese Existing and New Chemical Substances

IECS - Chinese Inventory of Existing Chemical Substances

AICS - Australian Inventory of Chemical Substances

KECL - Korean Existing and Evaluated Chemical Substances

NZIoC - New Zealand Inventory of Chemicals

WEL - Workplace Exposure Limit

TWA - Time Weighted Average

ACGIH - American Conference of Governmental Industrial Hygienists

IARC - International Agency for Research on Cancer

DNEL - Derived No Effect Level

PNEC - Predicted No Effect Concentration

RPE - Respiratory Protective Equipment

LD50 - Lethal Dose 50%

LC50 - Lethal Concentration 50%

EC50 - Effective Concentration 50%

NOEC - No Observed Effect Concentration

POW - Partition coefficient Octanol:Water

PBT - Persistent, Bioaccumulative, Toxic

vPvB - very Persistent, very Bioaccumulative

ICAO/IATA - International Civil Aviation Organization/International Air Transport Association

IMO/IMDG - International Maritime Organization/International Maritime Dangerous Goods Code

ADR - European Agreement Concerning the International Carriage of Dangerous Goods by Road

MARPOL - International Convention for the Prevention of Pollution from Ships

OECD - Organisation for Economic Co-operation and Development

ATE - Acute Toxicity Estimate

BCF - Bioconcentration factor

VOC - (Volatile Organic Compound)

Key literature references and sources for data

<https://echa.europa.eu/information-on-chemicals>

Suppliers safety data sheet, Chemadvisor - LOLI, Merck index, RTECS

Disclaimer

The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as a guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text

End of Safety Data Sheet