

SAFETY DATA SHEET

Creation Date 16-Jan-2009 Revision Date 24-Dec-2021 Revision Number 5

1. Identification

Product Name Bis(2-methoxyethyl) ether

Cat No.: AC125850000; AC125850010; AC125850025; AC125850100;

AC125852500

CAS No 111-96-6

Synonyms 2-Methoxyethyl ether; Diethylene glycol dimethyl ether; Diglyme

Recommended Use Laboratory chemicals.

Uses advised against Food, drug, pesticide or biocidal product use.

Details of the supplier of the safety data sheet

Company

Fisher Scientific Company Acros Organics
One Reagent Lane One Reagent Lane
Fair Lawn, NJ 07410 Fair Lawn, NJ 07410

Tel: (201) 796-7100

Emergency Telephone Number For information US call: 001-800-ACROS-01 / Europe call: +32 14 57 52 11

Emergency Number **US**:001-201-796-7100 / **Europe**: +32 14 57 52 99 **CHEMTREC** Tel. No.**US**:001-800-424-9300 / **Europe**:001-703-527-3887

2. Hazard(s) identification

Classification

This chemical is considered hazardous by the 2012 OSHA Hazard Communication Standard (29 CFR 1910.1200)

Flammable liquids Category 3
Reproductive Toxicity Category 1B

Label Elements

Signal Word

Danger

Hazard Statements

Flammable liquid and vapor

May damage fertility. May damage the unborn child



Precautionary Statements

Prevention

Obtain special instructions before use

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

Use personal protective equipment as required

Keep away from heat/sparks/open flames/hot surfaces. - No smoking

Keep container tightly closed

Ground/bond container and receiving equipment

Use explosion-proof electrical/ventilating/lighting equipment

Use only non-sparking tools

Take precautionary measures against static discharge

Response

IF exposed or concerned: Get medical attention/advice

Skin

IF ON SKIN (or hair): Take off immediately all contaminated clothing. Rinse skin with water/shower

Fire

In case of fire: Use CO2, dry chemical, or foam for extinction

Storage

Store locked up

Store in a well-ventilated place. Keep cool

Disposal

Dispose of contents/container to an approved waste disposal plant

Hazards not otherwise classified (HNOC)

May form explosive peroxides

3. Composition/Information on Ingredients

Component	CAS No	Weight %
Diethylene glycol dimethyl ether	111-96-6	<= 100

4. First-aid measures

General Advice Show this safety data sheet to the doctor in attendance. Immediate medical attention is

required.

Eye Contact Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. In

the case of contact with eyes, rinse immediately with plenty of water and seek medical

advice.

Skin Contact Wash off immediately with plenty of water for at least 15 minutes. Immediate medical

attention is required.

Inhalation Remove to fresh air. If not breathing, give artificial respiration. Do not use mouth-to-mouth

method if victim ingested or inhaled the substance; give artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device.

Immediate medical attention is required.

Ingestion Do NOT induce vomiting. Call a physician or poison control center immediately.

Bis(2-methoxyethyl) ether

Most important symptoms and

effects

Notes to Physician

None reasonably foreseeable. Symptoms of overexposure may be headache, dizziness,

tiredness, nausea and vomiting

Treat symptomatically

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.

Unsuitable Extinguishing Media No information available

Flash Point 51 °C / 123.8 °F

Method - CC (closed cup)

Autoignition Temperature 170 °C / 338 °F

Explosion Limits

Upper No data available
Lower No data available
Sensitivity to Mechanical Impact No information available
Sensitivity to Static Discharge No information available

Specific Hazards Arising from the Chemical

Flammable. May form explosive peroxides. Containers may explode when heated. Vapors may form explosive mixtures with air. Vapors may travel to source of ignition and flash back.

Hazardous Combustion Products

Carbon monoxide (CO). Carbon dioxide (CO $_2$). peroxides.

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. Thermal decomposition can lead to release of irritating gases and vapors.

NFPA

Health	Flammability	Instability	Physical hazards
2	2	2	N/A

6. Accidental release measures

Personal Precautions Ensure adequate ventilation. Use personal protective equipment as required. Keep people

away from and upwind of spill/leak. Evacuate personnel to safe areas.

Environmental Precautions Should not be released into the environment.

Methods for Containment and Clean Soak up with inert absorbent material. Keep in suitable, closed containers for disposal. **Up**

7. Handling and storage

Handling Do not get in eyes, on skin, or on clothing. Wear personal protective equipment/face

protection. Use only under a chemical fume hood. Do not breathe mist/vapors/spray. Do not

ingest. If swallowed then seek immediate medical assistance.

Storage. Keep containers tightly closed in a dry, cool and well-ventilated place. Containers should be

dated when opened and tested periodically for the presence of peroxides. Should crystals form in a peroxidizable liquid, peroxidation may have occurred and the product should be considered extremely dangerous. In this instance, the container should only be opened remotely by professionals. Keep away from heat, sparks and flame. Store under an inert atmosphere. Protect from moisture. Keep container tightly closed in a dry and

well-ventilated place. Incompatible Materials. Strong oxidizing agents. Strong acids.

Strong bases. Halogens. Water.

8. Exposure controls / personal protection

Exposure Guidelines

This product does not contain any hazardous materials with occupational exposure limitsestablished by the region specific regulatory bodies.

Engineering Measures Use only under a chemical fume hood. Ensure that eyewash stations and safety showers

are close to the workstation location. Use explosion-proof electrical/ventilating/lighting

equipment. Ensure adequate ventilation, especially in confined areas.

Personal Protective Equipment

Eye/face Protection Wear appropriate protective eyeglasses or chemical safety goggles as described by

OSHA's eye and face protection regulations in 29 CFR 1910.133 or European Standard

EN166.

Skin and body protectionWear appropriate protective gloves and clothing to prevent skin exposure.

Respiratory Protection Follow the OSHA respirator regulations found in 29 CFR 1910.134 or European Standard

EN 149. Use a NIOSH/MSHA or European Standard EN 149 approved respirator if exposure limits are exceeded or if irritation or other symptoms are experienced.

Hygiene Measures Handle in accordance with good industrial hygiene and safety practice.

9. Physical and chemical properties

Physical State Liquid Appearance Clear

Odor Slight ethereal

Odor Threshold
pH
No information available
No information available
No information available
4 °C / -83.2 °F

Boiling Point/Range 162 °C / 323.6 °F @ 760 mmHg

Flash Point 51 °C / 123.8 °F Method - CC (closed cup)

Evaporation Rate 0.36 (Butyl acetate = 1.0)

Flammability (solid,gas) Not applicable

Flammability or explosive limits

 Upper
 No data available

 Lower
 No data available

 Vapor Pressure
 1.7 mmHg @ 20°C

 Vapor Density
 4.62 (Air = 1.0)

Specific Gravity 0.937

Solubility
Miscible with water
Partition coefficient; n-octanol/water
Autoignition Temperature
Decomposition Temperature
Miscible with water
No data available
170 °C / 338 °F
No information available

Viscosity 2 cP at 20 °C

Molecular FormulaC6 H14 O3Molecular Weight134.18

10. Stability and reactivity

Reactive Hazard None known, based on information available

Stability Hygroscopic. May form explosive peroxides.

Conditions to Avoid Incompatible products. Excess heat. Keep away from open flames, hot surfaces and

sources of ignition. Exposure to moist air or water.

Incompatible Materials Strong oxidizing agents, Strong acids, Strong bases, Halogens, Water

Hazardous Decomposition Products Carbon monoxide (CO), Carbon dioxide (CO2), peroxides

Hazardous Polymerization Hazardous polymerization does not occur.

Hazardous Reactions None under normal processing.

11. Toxicological information

Acute Toxicity

Product Information

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene glycol dimethyl ether	LD50 = 7500 mg/kg (Rat)	Not listed	LC50 > 11000 mg/m³ (Rat) 7 h

Toxicologically Synergistic

No information available

Products

Delayed and immediate effects as well as chronic effects from short and long-term exposure

Irritation No information available

Sensitization No information available

Carcinogenicity The table below indicates whether each agency has listed any ingredient as a carcinogen.

Component	CAS No	IARC	NTP	ACGIH	OSHA	Mexico
Diethylene glycol	111-96-6	Not listed				
dimethyl ether						

Mutagenic Effects Mutagenic effects have occurred in experimental animals.

Reproductive Effects Experiments have shown reproductive toxicity effects on laboratory animals.

Developmental EffectsDevelopmental effects have occurred in experimental animals.

Teratogenicity Teratogenic effects have occurred in experimental animals.

STOT - single exposureSTOT - repeated exposure
None known

Aspiration hazard No information available

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

delayed

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated.

12. Ecological information

Ecotoxicity

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Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea
Diethylene glycol dimethyl	Not listed	Rainbow trout: LC50 = 9845	Daphnia: EC50 = 5868 mg/L	Not listed
ether		mg/L/96h	96h	
		Fathaed Minnow: LC50 =		
		8569 mg/L 96h		

Bis(2-methoxyethyl) ether

	Bluegill/Sunfish: LC50 =	
	10928 mg/L 96h	

Persistence and Degradability

Persistence is unlikely

Bioaccumulation/ Accumulation

No information available.

Mobility

. Will likely be mobile in the environment due to its water solubility.

Component	log Pow
Diethylene glycol dimethyl ether	-0.36

13. Disposal considerations

Waste Disposal Methods

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. Chemical waste generators must also consult local, regional, and national hazardous waste regulations to ensure complete and accurate classification.

14. Transport information

DOT

UN-No UN3271

Proper Shipping Name ETHERS, N.O.S.

Hazard Class 3
Packing Group III

<u>TDG</u>

UN-No UN3271

Proper Shipping Name ETHERS, N.O.S.

Hazard Class 3
Packing Group III

IATA

UN-No UN3271

Proper Shipping Name ETHERS, N.O.S.*

Hazard Class 3 Packing Group III

IMDG/IMO

UN-No UN3271

Proper Shipping Name ETHERS, N.O.S.

Hazard Class 3
Packing Group III

15. Regulatory information

United States of America Inventory

Component	CAS No	TSCA	TSCA Inventory notification - Active-Inactive	TSCA - EPA Regulatory Flags
Diethylene glycol dimethyl ether	111-96-6	X	ACTIVE	S

Legend:

TSCA US EPA (TSCA) - Toxic Substances Control Act, (40 CFR Part 710)

X - Listed

'-' - Not Listed

S - Indicates a substance that is identified in a proposed or final Significant New Use Rule.

TSCA 12(b) - Notices of Export

Component	CAS No	TSCA 12(b) - Notices of Export
Diethylene glycol dimethyl ether	111-96-6	Section 5

International Inventories

Canada (DSL/NDSL), Europe (EINECS/ELINCS/NLP), Philippines (PICCS), Japan (ENCS), Japan (ISHL), Australia (AICS), China (IECSC), Korea (KECL).

Component	CAS No	DSL	NDSL	EINECS	PICCS	ENCS	ISHL	AICS	IECSC	KECL
Diethylene glycol dimethyl ether	111-96-6	Χ	-	203-924-4	Χ	Χ	Χ	Χ	Х	KE-27705

KECL - NIER number or KE number (http://ncis.nier.go.kr/en/main.do)

U.S. Federal Regulations

SARA 313

Component	CAS No	Weight %	SARA 313 - Threshold Values %
Diethylene glycol dimethyl ether	111-96-6	<= 100	1.0

SARA 311/312 Hazard Categories See section 2 for more information

CWA (Clean Water Act) Not applicable

Clean Air Act

Componen		HAPS Data	Class 1 Ozone Depletors	Class 2 Ozone Depletors
Diethylene glycol dime	thyl ether	X		-

OSHA - Occupational Safety and

Health Administration

Not applicable

CERCLA Not applicable

California Proposition 65 This product does not contain any Proposition 65 chemicals.

U.S. State Right-to-Know Regulations

Component	Massachusetts	New Jersey	Pennsylvania	Illinois	Rhode Island
Diethylene glycol	-	X	X	X	-
dimethyl ether					

U.S. Department of Transportation

Reportable Quantity (RQ): N
DOT Marine Pollutant N
DOT Severe Marine Pollutant N

U.S. Department of Homeland

Security

This product does not contain any DHS chemicals.

Other International Regulations

Mexico - Grade Moderate risk, Grade 2

Authorisation/Restrictions according to EU REACH

Component	REACH (1907/2006) - Annex XIV - Substances Subject to Authorization	REACH (1907/2006) - Annex XVII - Restrictions on Certain Dangerous Substances	,
Diethylene glycol dimethyl ether	Toxic for reproduction Category 1B,Article 57 Application date: February 22, 2016 Sunset date: August 22, 2017 Exemption - None	Use restricted. See item 30. (see link for restriction details) Use restricted. See item 75. (see link for restriction details)	SVHC Candidate list - Toxic for reproduction (Article 57c)

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.

https://echa.europa.eu/authorisation-list https://echa.europa.eu/substances-restricted-under-reach https://echa.europa.eu/candidate-list-table

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

Component	CAS No	OECD HPV	Persistent Organic Pollutant	Ozone Depletion Potential	Restriction of Hazardous Substances (RoHS)
Diethylene glycol dimethyl ether	111-96-6	Listed	Not applicable	Not applicable	Not applicable
Component	CAS No	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Major Accident Notification	Seveso III Directive (2012/18/EC) - Qualifying Quantities for Safety Report Requirements	Rotterdam Convention (PIC)	Basel Convention (Hazardous Waste)
Diethylene glycol dimethyl ether	111-96-6	Not applicable	Not applicable	Not applicable	Not applicable

16. Other information

Prepared By Regulatory Affairs

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Revision Summary This document has been updated to comply with the US OSHA HazCom 2012 Standard

replacing the current legislation under 29 CFR 1910.1200 to align with the Globally

Harmonized System of Classification and Labeling of Chemicals (GHS).

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 SDS