

SAFETY DATA SHEET

Creation Date 22-September-2009

Revision Date 17-January-2018

Revision Number 3

1. Identification

Product Name Bis(2-methoxyethyl) Ether (Certified)
Cat No. : O1471-4; O1471-500
Synonyms Diethylene glycol dimethyl ether; Diglyme; 2-Methoxyethyl ether
Recommended Use Laboratory chemicals.
Uses advised against Not for food, drug, pesticide or biocidal product use

Details of the supplier of the safety data sheet

Company

Importer/Distributor
Fisher Scientific
112 Colonnade Road,
Ottawa, ON K2E 7L6,
Canada
Tel: 1-800-234-7437

Manufacturer

Fisher Scientific
One Reagent Lane
Fair Lawn, NJ 07410
Tel: (201) 796-7100

Emergency Telephone Number

CHEMTREC®, Inside the USA: 800-424-9300
CHEMTREC®, Outside the USA: 001-703-527-3887

2. Hazard(s) identification

Classification

WHMIS 2015 Classification Classified as hazardous under the Hazardous Products Regulations (SOR/2015-17)

Flammable liquids	Category 3
Reproductive Toxicity	Category 1B
Physical Hazards Not Otherwise Classified	Category 1
May form explosive peroxides	

Label Elements

Signal Word

Danger

Hazard Statements

Flammable liquid and vapor
May damage fertility or the unborn child
May form explosive peroxides

**Precautionary Statements****Prevention**

Keep container tightly closed

Obtain special instructions before use

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

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

Ground/bond container and receiving equipment

Use only non-sparking tools

Take precautionary measures against static discharges

Wear protective gloves/protective clothing/eye protection/face protection

Response

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

IF exposed or concerned: Get medical advice/attention

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

Storage

Store locked up

Store in a well-ventilated place. Keep cool

Disposal

Dispose of contents/container to an approved waste disposal plant

3. Composition/Information on Ingredients

Component	CAS-No	Weight %
Diethylene glycol dimethyl ether	111-96-6	> 99

4. First-aid measures

Eye Contact	Rinse immediately with plenty of water, also under the eyelids, for at least 15 minutes. Get medical attention if symptoms occur.
Skin Contact	Wash off immediately with soap and plenty of water while removing all contaminated clothes and shoes. Get medical attention if symptoms occur.
Inhalation	Move to fresh air. If breathing is difficult, give oxygen. Get medical attention if symptoms occur.
Ingestion	Do not induce vomiting. Obtain medical attention.
Most important symptoms/effects	Breathing difficulties. Symptoms of overexposure may be headache, dizziness, tiredness, nausea and vomiting
Notes to Physician	Treat symptomatically

5. Fire-fighting measures

Suitable Extinguishing Media	Use water spray, alcohol-resistant foam, dry chemical or carbon dioxide.
Unsuitable Extinguishing Media	No information available
Flash Point	55 °C / 131 °F

Method -	No information available
Autoignition Temperature	170 °C / 338 °F
Explosion Limits	
Upper	17.4 vol %
Lower	1.5 vol %
Sensitivity to Mechanical Impact	No information available
Sensitivity to Static Discharge	No information available

Specific Hazards Arising from the Chemical

Flammable. Risk of ignition. Containers may explode when heated. Keep product and empty container away from heat and sources of ignition.

Hazardous Combustion Products

Carbon monoxide (CO) Carbon dioxide (CO₂)

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.

NFPA

Health	Flammability	Instability	Physical hazards
1	2	1	N/A

6. Accidental release measures

Personal Precautions	Use personal protective equipment. Remove all sources of ignition. Ensure adequate ventilation.
Environmental Precautions	Avoid release to the environment. See Section 12 for additional ecological information.
Methods for Containment and Clean Up	Remove all sources of ignition. Soak up with inert absorbent material. Sweep up and shovel into suitable containers for disposal. Use spark-proof tools and explosion-proof equipment.

7. Handling and storage

Handling	Wear personal protective equipment. Keep away from open flames, hot surfaces and sources of ignition. Avoid contact with skin and eyes. Do not breathe vapors or spray mist. Do not ingest. If peroxide formation is suspected, do not open or move container.
Storage	Keep containers tightly closed in a dry, cool and well-ventilated place. Keep away from heat and sources of ignition. May form explosive peroxides on prolonged storage. 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. Flammables area.

8. Exposure controls / personal protection

Exposure Guidelines	This product does not contain any hazardous materials with occupational exposure limits established by the region specific regulatory bodies.
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Engineering Measures

Ensure adequate ventilation, especially in confined areas. Use explosion-proof electrical/ventilating/lighting/equipment. Ensure that eyewash stations and safety showers are close to the workstation location.

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 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.
Hand Protection	Wear appropriate protective gloves and clothing to prevent skin exposure.

Glove material	Breakthrough time	Glove thickness	Glove comments
Nitrile rubber	See manufacturers recommendations	-	Splash protection only

Inspect gloves before use. observe the instructions regarding permeability and breakthrough time which are provided by the supplier of the gloves. (Refer to manufacturer/supplier for information) gloves are suitable for the task: Chemical compatability, 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. gloves with care avoiding skin contamination.

Respiratory Protection

When workers are facing concentrations above the exposure limit they must use appropriate certified respirators. 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. To protect the wearer, respiratory protective equipment must be the correct fit and be used and maintained properly

When RPE is used a face piece Fit Test should be conducted

Environmental exposure controls

No information available.

Hygiene Measures

Handle in accordance with good industrial hygiene and safety practice. Keep away from food, drink and animal feeding stuffs. Do not eat, drink or smoke when using this product. Remove and wash contaminated clothing before re-use. Wash hands before breaks and at the end of workday.

9. Physical and chemical properties

Physical State	Liquid
Appearance	Clear
Odor	Petroleum distillates
Odor Threshold	No information available
pH	
Melting Point/Range	-64 °C / -83.2 °F
Boiling Point/Range	162 °C / 323.6 °F @ 760 mmHg
Flash Point	55 °C / 131 °F
Evaporation Rate	0.36 (Butyl Acetate = 1.0)
Flammability (solid,gas)	No information available
Flammability or explosive limits	
Upper	17.4 vol %
Lower	1.5 vol %
Vapor Pressure	3.0 mmHg @ 25 °C
Vapor Density	4.62 (Air = 1.0)
Specific Gravity	.9370
Solubility	Soluble in water
Partition coefficient; n-octanol/water	No data available
Autoignition Temperature	170 °C / 338 °F
Decomposition Temperature	No information available
Viscosity	No information available
Molecular Formula	C6H14O3
Molecular Weight	134.18
VOC Content(%)	99

10. Stability and reactivity

Reactive Hazard Yes

Stability	Stable under normal conditions. May form explosive peroxides. Hygroscopic.
Conditions to Avoid	Incompatible products. Heat, flames and sparks. Exposure to moisture. Extremes of temperature and direct sunlight.
Incompatible Materials	Strong oxidizing agents, Strong acids, Isocyanates
Hazardous Decomposition Products	Carbon monoxide (CO), Carbon dioxide (CO ₂)
Hazardous Polymerization	Hazardous polymerization does not occur.
Hazardous Reactions	May form explosive peroxides.

11. Toxicological information

Acute Toxicity

Component Information

Component	LD50 Oral	LD50 Dermal	LC50 Inhalation
Diethylene glycol dimethyl ether	LD50 = 7500 mg/kg (Rat)	Not listed	LC50 > 11000 mg/m ³ (Rat) 7 h

Toxicologically Synergistic Products No information available

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 dimethyl ether	111-96-6	Not listed	Not listed	Not listed	Not listed	Not listed

Mutagenic Effects No information available

Reproductive Effects May impair fertility.

Developmental Effects May cause harm to the unborn child.

Teratogenicity No information available.

STOT - single exposure None known
STOT - repeated exposure None known

Aspiration hazard No information available

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

Endocrine Disruptor Information No information available

Other Adverse Effects The toxicological properties have not been fully investigated. See actual entry in RTECS for complete information.

12. Ecological information

Ecotoxicity

Do not empty into drains.

Component	Freshwater Algae	Freshwater Fish	Microtox	Water Flea

Diethylene glycol dimethyl ether	Not listed	Rainbow trout: LC50 = 9845 mg/L/96h Fathaed Minnow: LC50 = 8569 mg/L 96h Bluegill/Sunfish: LC50 = 10928 mg/L 96h	Daphnia: EC50 = 5868 mg/L 96h	EC50: = 5868 mg/L, 96h (Daphnia magna)
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Persistence and Degradability No information available

Bioaccumulation/ Accumulation No information available.

Mobility .

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

TDG

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

International Inventories

Component	DSL	NDSL	TSCA	EINECS	ELINCS	NLP	PICCS	ENCS	AICS	IECSC	KECL
Diethylene glycol dimethyl ether	X	-	X	203-924-4	-		X	X	X	X	X

Canada

SDS in compliance with provisions of information as set out in Canadian Standard - Part 4, Schedule 1 and 2 of the Hazardous Products Regulations (HPR) and meets the requirements of the HPR (Paragraph 13(1)(a) of the Hazardous Products Act (HPA)).

16. Other information

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Revision Summary This document has been updated to comply with the requirements of WHMIS 2015 to align with the Globally Harmonised System (GHS) for the Classification and Labelling of Chemicals.

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