

Material Safety Data Sheet

acc. to OSHA and ANSI

Printing date 03/26/2007

Reviewed on 08/31/2006

1 Identification of substance:

Product details:

Product name: Bis(2-methoxyethyl) ether

Stock number: 32335

Manufacturer/Supplier:

Alfa Aesar, A Johnson Matthey Company
 Johnson Matthey Catalog Company, Inc.
 30 Bond Street
 Ward Hill, MA 01835-8099
 Emergency Phone: (978) 521-6300
 CHEMTREC: (800) 424-9300
 Web Site: www.alfa.com

Information Department: Health, Safety and Environmental Department

Emergency information:

During normal hours the Health, Safety and Environmental Department.
 After normal hours call Chemtrec at (800) 424-9300.

2 Composition/Data on components:

Chemical characterization:

Description: (CAS#)

Bis(2-methoxyethyl) ether (CAS# 111-96-6): 100%

Identification number(s):

EINECS Number: 203-924-4

EU Number: 603-139-00-0

3 Hazards identification

Hazard description:



T Toxic

Information pertaining to particular dangers for man and environment

R 60 May impair fertility

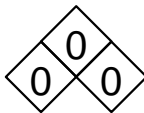
R 61 May cause harm to the unborn child

R 10 Flammable.

R 19 May form explosive peroxides.

Classification system

NFPA Ratings (scale 0-4)



Health = 0

Fire = 0

Reactivity = 0

HMIS ratings (scale 0-4)

(Hazardous Materials Identification System)

HEALTH	1
FIRE	2
REACTIVITY	2

Health (acute effects) = 1

Flammability = 2

Reactivity = 2

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4 First aid measures**After inhalation**

Supply fresh air. If required, provide artificial respiration. Keep patient warm.

Seek immediate medical advice.

After skin contact

Immediately wash with water and soap and rinse thoroughly.

Seek immediate medical advice.

After eye contact

Rinse opened eye for several minutes under running water. Then consult a doctor.

After swallowing Seek immediate medical advice.

5 Fire fighting measures**Suitable extinguishing agents**

Carbon dioxide, extinguishing powder or water spray. Fight larger fires with water spray or alcohol resistant foam.

Special hazards caused by the material, its products of combustion or resulting gases:

In case of fire, the following can be released:

Carbon monoxide and carbon dioxide

Protective equipment:

Wear self-contained respirator.

Wear fully protective impervious suit.

6 Accidental release measures**Person-related safety precautions:**

Wear protective equipment. Keep unprotected persons away.

Ensure adequate ventilation

Keep away from ignition sources

Measures for environmental protection:

Do not allow material to be released to the environment without proper governmental permits.

Measures for cleaning/collecting:

Absorb with liquid-binding material (sand, diatomite, acid binders, universal binders, sawdust).

Dispose contaminated material as waste according to item 13.

Keep away from ignition sources.

Additional information:

See Section 7 for information on safe handling

See Section 8 for information on personal protection equipment.

See Section 13 for disposal information.

7 Handling and storage**Handling****Information for safe handling:**

Keep container tightly sealed.

Store in cool, dry place in tightly closed containers.

Ensure good ventilation at the workplace.

Open and handle container with care.

Information about protection against explosions and fires:

Keep ignition sources away.

Protect against electrostatic charges.

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Fumes can combine with air to form an explosive mixture.
Do not distill to dryness.
Explosive peroxides may form, handle container cautiously.

Storage**Requirements to be met by storerooms and receptacles:**

Store in a cool location.

Information about storage in one common storage facility:

Store away from oxidizing agents.

Further information about storage conditions:

Store in cool, dry conditions in well sealed containers.
Avoid contact with air/oxygen (formation of peroxide).
Check container pressure periodically to prevent explosive peroxides.

8 Exposure controls and personal protection**Additional information about design of technical systems:**

Properly operating chemical fume hood designed for hazardous chemicals and having an average face velocity of at least 100 feet per minute.

Components with limit values that require monitoring at the workplace:

Not required.

Additional information: No data**Personal protective equipment****General protective and hygienic measures**

The usual precautionary measures for handling chemicals should be followed.

Keep away from foodstuffs, beverages and feed.

Remove all soiled and contaminated clothing immediately.

Wash hands before breaks and at the end of work.

Store protective clothing separately.

Breathing equipment:

Use suitable respirator when high concentrations are present.

Protection of hands:

Impervious gloves

Check protective gloves prior to each use for their proper condition.

Material of gloves

The selection of suitable gloves not only depends on the material, but also on quality. Quality will vary from manufacturer to manufacturer.

Eye protection: Safety glasses**Body protection:** Protective work clothing.**9 Physical and chemical properties:****General Information**

Form:	Liquid
Color:	Colorless
Odor:	Not determined

Change in condition

Melting point/Melting range:	-64°C (-83°F)
Boiling point/Boiling range:	162°C (324°F)
Sublimation temperature / start:	Not determined

Flash point:	Not determined
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Ignition temperature:	188°C (370°F)
Decomposition temperature:	Not determined
Danger of explosion:	May form explosive peroxides. Do not distill to dryness.
Explosion limits:	
Lower:	1.5 Vol %
Upper:	17.4 Vol %
Vapor pressure at 13°C (55°F):	1.33 hPa (1 mm Hg)
Density at 20°C (68°F):	0.9451 g/cm ³
Solubility in / Miscibility with Water:	Fully miscible

10 Stability and reactivity**Thermal decomposition / conditions to be avoided:**

Decomposition will not occur if used and stored according to specifications.

Materials to be avoided: Oxidizing agents

Dangerous reactions May form explosive peroxides.

Dangerous products of decomposition: Carbon monoxide and carbon dioxide

11 Toxicological information**Acute toxicity:****LD/LC50 values that are relevant for classification:**

Oral	LD50	6000 mg/kg (mus)
		5400 mg/kg (rat)

Primary irritant effect:

on the skin: Irritant to skin and mucous membranes.

on the eye: Irritating effect.

Sensitization: No sensitizing effects known.

Other information (about experimental toxicology):

Reproductive effects have been observed on tests with laboratory animals.

Mutagenic effects have been observed on tests with insects.

Mutagenic effects have been observed on tests with laboratory animals.

Subacute to chronic toxicity:

Glycol ethers may cause irritation to the skin, lungs, and eyes.

Congestion and edema in the lungs has been reported. Liver and kidney

damage has been reported. Tests with animals have resulted in birth

defects, testicular damage and sperm damage. Exposure may cause blood

and central nervous system effects. Severe aplastic anemia, macrocytic

anemia, and blood platlet reductions have been reported. Central nervous

system effect include drowsiness, fatigue, tremors and mental dullness.

Subacute to chronic toxicity:

The Registry of Toxic Effects of Chemical Substances (RTECS) reports the following effects in laboratory animals:

Behavioral - somnolence (general depressed activity).

Behavioral - ataxia.

Lungs, Thorax, or Respiration - respiratory depression

Related to Chronic Data - death.

Nutritional and Gross Metabolic - weight loss or decreased weight gain.

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Reproductive - Effects on Embryo or Fetus - maternal-fetal exchange.

Reproductive - Paternal Effects - spermatogenesis (including genetic material, sperm morphology, motility, and count).

Reproductive - Paternal Effects - testes, epididymis, sperm duct.

Reproductive - Paternal Effects - other effects on male.

Reproductive - Specific Developmental Abnormalities - musculoskeletal system.

Reproductive - Specific Developmental Abnormalities - Central Nervous System.

Reproductive - Specific Developmental Abnormalities - cardiovascular (circulatory) system.

Reproductive - Specific Developmental Abnormalities - urogenital system.

Reproductive - Fertility - pre-implantation mortality (e.g. reduction in number of implants per female; total number of implants per corpora lutea)

Reproductive - Fertility - litter size (e.g. # fetuses per litter; measured before birth).

Reproductive - Fertility - post-implantation mortality (e.g. dead/or resorbed implants per total number of implants).

Reproductive - Effects on Embryo or Fetus - fetal death.

Reproductive - Effects on Newborn - live birth index (measured after birth)

Reproductive - Effects on Embryo or Fetus - fetotoxicity (except death, e.g., stunted fetus).

Reproductive - Specific Developmental Abnormalities - other developmental abnormalities.

Reproductive - Specific Developmental Abnormalities - craniofacial (including nose and tongue).

Reproductive - Specific Developmental Abnormalities - body wall.

Additional toxicological information:

To the best of our knowledge the acute and chronic toxicity of this substance is not fully known.

May impair fertility.

May cause harm to the unborn child.

No classification data on carcinogenic properties of this material is available from the EPA, IARC, NTP, OSHA or ACGIH.

12 Ecological information:**General notes:**

Do not allow undiluted product or large quantities of it to reach ground water, water course or sewage system.

Do not allow material to be released to the environment without proper governmental permits.

13 Disposal considerations**Product:****Recommendation**

Consult state, local or national regulations to ensure proper disposal.

Uncleaned packagings:**Recommendation:** Disposal must be made according to official regulations.**Recommended cleansing agent:** Water, if necessary with cleansing agents.

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14 Transport information

DOT regulations:



Hazard class: 3
Identification number: UN3271
Packing group: III
Proper shipping name (technical name): ETHERS, N.O.S. (Bis(2-methoxyethyl) ether)
Label: 3

Land transport ADR/RID (cross-border)



ADR/RID class: 3 (F1) Flammable liquids
Danger code (Kemler): 30
UN-Number: 3271
Packaging group: III
Description of goods: 3271 ETHERS, N.O.S. (Bis(2-methoxyethyl) ether)

Maritime transport IMDG:



IMDG Class: 3
UN Number: 3271
Label: 3
Packaging group: III
Proper shipping name: ETHERS, N.O.S. (Bis(2-methoxyethyl) ether)

Air transport ICAO-TI and IATA-DGR:



ICAO/IATA Class: 3
UN/ID Number: 3271
Label: 3
Packaging group: III
Proper shipping name: ETHERS, N.O.S. (Bis(2-methoxyethyl) ether)

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15 Regulations**Product related hazard informations:****Hazard symbols:**

T Toxic

Risk phrases:

60 May impair fertility

61 May cause harm to the unborn child

10 Flammable.

19 May form explosive peroxides.

Safety phrases:

53 Avoid exposure - obtain special instructions before use.

45 In case of accident or if you feel unwell, seek medical advice immediately.

National regulations

All components of this product are listed in the U.S. Environmental Protection Agency Toxic Substances Control Act Chemical substance Inventory.

All components of this product are listed on the Canadian Domestic Substances List (DSL).

Information about limitation of use:

For use only by technically qualified individuals.

This product contains a glycol ether and is subject to the reporting requirements of section 313 of the Emergency Planning and Community Right to Know Act of 1986 and 40CFR372.

16 Other information:

Employers should use this information only as a supplement to other information gathered by them, and should make independent judgement of suitability of this information to ensure proper use and protect the health and safety of employees. This information is furnished without warranty, and any use of the product not in conformance with this Material Safety Data Sheet, or in combination with any other product or process, is the responsibility of the user.

Department issuing MSDS: Health, Safety and Environmental Department.

Contact: Darrell R. Sanders