

Material Safety Data Sheet

1,2-Dimethoxyethane

ACC# 09450

Section 1 - Chemical Product and Company Identification

MSDS Name: 1,2-Dimethoxyethane

Catalog Numbers: AC118450000, AC118450010, AC118450025, AC118450050, AC118455000, AC610351000, BP2613-100, O2430-1, O2430-4

Synonyms: Ethylene glycol dimethyl ether; 1,2-Dimethoxyethane; Dimethyl Cellosolve; Monoglyme.

Company Identification:

Fisher Scientific
1 Reagent Lane
Fair Lawn, NJ 07410

For information, call: 201-796-7100

Emergency Number: 201-796-7100

For CHEMTREC assistance, call: 800-424-9300

For International CHEMTREC assistance, call: 703-527-3887

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
110-71-4	1,2-Dimethoxyethane	>99	203-794-9

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: water-white liquid. Flash Point: -6 deg C.

Warning! Flammable liquid and vapor. Causes eye and skin irritation. May cause respiratory tract irritation. May cause central nervous system depression. May form explosive peroxides. This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable. This substance has caused adverse reproductive and fetal effects in animals.

Target Organs: Blood, kidneys, central nervous system, cardiovascular system, reproductive system.

Potential Health Effects

Eye: May cause eye irritation.

Skin: May cause skin irritation. May be absorbed through the skin in harmful amounts.

Ingestion: May cause irritation of the digestive tract. May cause systemic toxicity with acidosis. May cause cardiac disturbances. May cause central nervous system depression.

Inhalation: Harmful if inhaled. May cause respiratory tract irritation. Inhalation at high concentrations may cause CNS depression and asphyxiation.

Chronic: May cause liver and kidney damage. In laboratory studies with ethylene glycol dimethyl ether, birth defects, fetotoxicity, embryolethality, anemia, bone marrow damage, hemolysis, immunosuppression and damage to the male reproductive tissues have been observed.

Section 4 - First Aid Measures

Eyes: Immediately flush eyes with plenty of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Get medical aid immediately.

Skin: Get medical aid immediately. Immediately flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes. Wash clothing before reuse.

Ingestion: Never give anything by mouth to an unconscious person. Get medical aid immediately. Do NOT induce vomiting. If conscious and alert, rinse mouth and drink 2-4 cupfuls of milk or water.

Inhalation: Get medical aid immediately. Remove from exposure and move to fresh air immediately. If not breathing, give artificial respiration. If breathing is difficult, give oxygen.

Notes to Physician: Treat symptomatically and supportively.

Section 5 - Fire Fighting Measures

General Information: As in any fire, wear a self-contained breathing apparatus in pressure-demand, MSHA/NIOSH (approved or equivalent), and full protective gear. Flammable Liquid. Can release vapors that form explosive mixtures at temperatures above the flashpoint. Use water spray to keep fire-exposed containers cool. May form explosive peroxides. Vapors are heavier than air and may travel to a source of ignition and flash back. Vapors can spread along the ground and collect in low or confined areas.

Extinguishing Media: Use water spray to cool fire-exposed containers. Use dry chemical, carbon dioxide, or alcohol-resistant foam.

Flash Point: -6 deg C (21.20 deg F)

Autoignition Temperature: 395 deg F (201.67 deg C)

Explosion Limits, Lower: 1.60 vol %

Upper: 10.40 vol %

NFPA Rating: (estimated) Health: 2; Flammability: 3; Instability: 0

Section 6 - Accidental Release Measures

General Information: Use proper personal protective equipment as indicated in Section 8.

Spills/Leaks: Absorb spill with inert material (e.g. vermiculite, sand or earth), then place in suitable container. Remove all sources of ignition. Provide ventilation.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Ground and bond containers when transferring material. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Avoid ingestion and inhalation. If peroxide formation is suspected, do not open or move container. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation.

Storage: Store in a tightly closed container. Keep from contact with oxidizing materials. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. After opening, purge container with nitrogen before reclosing. Periodically test for peroxide formation on long-term storage. Addition of water or appropriate reducing materials will lessen peroxide formation. 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. All peroxidizable substances should be stored away from heat and light and be protected from ignition sources.

Section 8 - Exposure Controls, Personal Protection

Engineering Controls: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate ventilation to keep airborne concentrations low.

Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
1,2-Dimethoxyethane	none listed	none listed	none listed

OSHA Vacated PELs: 1,2-Dimethoxyethane: No OSHA Vacated PELs are listed for this chemical.

Personal Protective Equipment

Eyes: Wear chemical splash goggles.

Skin: Wear appropriate protective gloves to prevent skin exposure.

Clothing: Wear appropriate protective clothing to prevent skin exposure.

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.

Section 9 - Physical and Chemical Properties

Physical State: Liquid

Appearance: water-white

Odor: ethereal odor - sharp odor

pH: Not available.

Vapor Pressure: 61.2 mm Hg @ 20

Vapor Density: 3.1 (air=1)

Evaporation Rate: 5.0 (butyl acetate=1)

Viscosity: 0.455 mPas 25 deg C

Boiling Point: 82-83 deg C @ 760 mm Hg

Freezing/Melting Point: -58 deg C

Decomposition Temperature: Not available.

Solubility: Soluble.

Specific Gravity/Density: .86285 @ 20°C

Molecular Formula: C₄H₁₀O₂

Molecular Weight: 90.12

Section 10 - Stability and Reactivity

Chemical Stability: Under normal storage conditions, peroxidizable compounds can form and accumulate peroxides which may explode when subjected to heat or shock. This material is most hazardous when peroxide levels are concentrated by distillation or evaporation.

Conditions to Avoid: Light, ignition sources, exposure to air, excess heat, evaporating to near dryness.

Incompatibilities with Other Materials: Strong oxidizing agents.

Hazardous Decomposition Products: Carbon monoxide, irritating and toxic fumes and gases, carbon dioxide.

Hazardous Polymerization: Has not been reported.

Section 11 - Toxicological Information

RTECS#:

CAS# 110-71-4: KI1451000

LD50/LC50:

CAS# 110-71-4:

Oral, mouse: LD50 = 3200 mg/kg;

Oral, rabbit: LD50 = 320 mg/kg;

Oral, rat: LD50 = 775 mg/kg;

Carcinogenicity:

CAS# 110-71-4: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.

Teratogenicity: See actual entry in RTECS for complete information.

Reproductive Effects: See actual entry in RTECS for complete information.

Mutagenicity: No information available.

Neurotoxicity: Ataxia, tremor, somnolence, lethargy, headache, dysarthria, blurred vision, coma, and personality changes have been reported after chronic inhalation.

Other Studies:

Section 12 - Ecological Information

Ecotoxicity: No data available. No information available.

Environmental: No information reported.

Physical: No information available.

Other: None.

Section 13 - Disposal Considerations

Chemical waste generators must determine whether a discarded chemical is classified as a hazardous waste. US EPA guidelines for the classification determination are listed in 40 CFR Parts 261.3. Additionally, waste generators must consult state and local hazardous waste regulations to ensure complete and accurate classification.

RCRA P-Series: None listed.

RCRA U-Series: None listed.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	1,2-DIMETHOXYETHANE	1,2-DIMETHOXYETHANE
Hazard Class:	3	3
UN Number:	UN2252	UN2252
Packing Group:	II	II
Additional Info:		FLASHPOINT 1 C

Section 15 - Regulatory Information

US FEDERAL

TSCA

CAS# 110-71-4 is listed on the TSCA inventory.

Health & Safety Reporting List

None of the chemicals are on the Health & Safety Reporting List.

Chemical Test Rules

None of the chemicals in this product are under a Chemical Test Rule.

Section 12b

None of the chemicals are listed under TSCA Section 12b.

TSCA Significant New Use Rule

None of the chemicals in this material have a SNUR under TSCA.

CERCLA Hazardous Substances and corresponding RQs

None of the chemicals in this material have an RQ.

SARA Section 302 Extremely Hazardous Substances

None of the chemicals in this product have a TPQ.

SARA Codes

CAS # 110-71-4: immediate, fire, reactive.

Section 313

This material contains 1,2-Dimethoxyethane (listed as Glycol ethers), >99%, (CAS# 110-71-4) which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.

Clean Air Act:

CAS# 110-71-4 (listed as Glycol ethers) is listed as a hazardous air pollutant (HAP).

This material does not contain any Class 1 Ozone depleters.

This material does not contain any Class 2 Ozone depleters.

Clean Water Act:

None of the chemicals in this product are listed as Hazardous Substances under the CWA.

None of the chemicals in this product are listed as Priority Pollutants under the CWA.

None of the chemicals in this product are listed as Toxic Pollutants under the CWA.

OSHA:

None of the chemicals in this product are considered highly hazardous by OSHA.

STATE

CAS# 110-71-4 can be found on the following state right to know lists: Pennsylvania, Massachusetts.

California Prop 65

California No Significant Risk Level: None of the chemicals in this product are listed.

European/International Regulations
European Labeling in Accordance with EC Directives

Hazard Symbols:

T F

Risk Phrases:

- R 11 Highly flammable.
- R 19 May form explosive peroxides.
- R 20 Harmful by inhalation.
- R 60 May impair fertility.
- R 61 May cause harm to the unborn child.

Safety Phrases:

- S 16 Keep away from sources of ignition - No smoking.
- S 33 Take precautionary measures against static discharges.
- S 45 In case of accident or if you feel unwell, seek medical advice immediately (show the label where possible).
- S 53 Avoid exposure - obtain special instructions before use.
- S 9 Keep container in a well-ventilated place.

WGK (Water Danger/Protection)

CAS# 110-71-4: 1

Canada - DSL/NDSL

CAS# 110-71-4 is listed on Canada's DSL List.

Canada - WHMIS

This product has a WHMIS classification of B2, D2B.

This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and the MSDS contains all of the information required by those regulations.

Canadian Ingredient Disclosure List

CAS# 110-71-4 is not listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information
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MSDS Creation Date: 12/12/1997

Revision #7 Date: 10/03/2005

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