Material Safety Data Sheet
Ethylene glycol monoethyl ether

ACC# 27510

Section 1 - Chemical Product and Company Identification

MSDS Name: Ethylene glycol monoethyl ether
Catalog Numbers: AC156020000, AC156020010, AC156020025, E180-1, E180-20, E180-4
Synonyms: Cellosolve(R); Ethylene glycol ethyl ether; 2-Ethoxyethanol; Oxitol; EGEE; 2-EE.
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
110-80-5	Ethylene glycol monoethyl ether	> 99	203-804-1

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 43 deg C.
Warning! Flammable liquid and vapor. May cause harm to the unborn child. May cause harmful reproductive effects in men. Causes eye irritation. May be harmful if swallowed, inhaled, or absorbed through the skin. This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable. May form explosive peroxides. May cause central nervous system depression.
Target Organs: Blood, kidneys, central nervous system, liver, male reproductive system.

Potential Health Effects
Eye: Causes eye irritation. Caused moderate eye irritation in a standard Draize test.
Skin: May cause mild skin irritation. Prolonged and/or repeated contact may cause irritation and/or dermatitis. If absorbed, causes symptoms similar to those of ingestion. May be harmful if absorbed through the skin. Substance is readily absorbed through the skin. Not sensitizing in guinea pig maximization test.
Ingestion: May cause irritation of the digestive tract. May cause liver and kidney damage. Exposure may cause anemia and other blood abnormalities. May be harmful if swallowed. May cause central nervous system depression.
Inhalation: May cause respiratory tract irritation. Inhalation overexposure may lead to central nervous system depression, producing effects such as dizziness, headache, confusion, incoordination, nausea, weakness, and loss of consciousness. Extreme exposures may cause other CNS effects including death.
Chronic: 2-Ethoxyethanol may be a teratogen in humans since it has been shown to be a teratogen in animals. It may damage the testes and decrease fertility in males. Effects on liver and kidneys, stomach ulcers, blood changes and reduced growth seen at high doses. In humans, the main metabolite is ethoxyacetic acid, which is excreted in the urine, but is still detectable in the body 12 days after exposure.

Section 4 - First Aid Measures

Eyes: In case of contact, immediately flush eyes with plenty of water for a t least 15 minutes. Get medical aid.
Skin: In case of contact, flush skin with plenty of water. Remove contaminated clothing and shoes. Get medical aid if irritation develops and persists. Wash clothing before reuse.
Ingestion: If swallowed, do not induce vomiting unless directed to do so by medical personnel. Never give anything by mouth to an unconscious person. Get medical aid.
Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Get medical aid.
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. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. Containers may explode when heated. 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 dry chemical, carbon dioxide, or appropriate foam. Solid streams of water may be ineffective and spread material.
Flash Point: 43 deg C (109.40 deg F)
Autoignition Temperature: 235 deg C (455.00 deg F)
Explosion Limits, Lower:1.7% @ 93°C

Upper: 15.6% @ 93°C
NFPA Rating: (estimated) Health: 2; Flammability: 2; 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. Approach spill from upwind.

Section 7 - Handling and Storage

Handling: Wash thoroughly after handling. Remove contaminated clothing and wash before reuse. Ground and bond containers when transferring material. Use spark-proof tools and explosion proof equipment. Avoid contact with eyes, skin, and clothing. Empty containers retain product residue, (liquid and/or vapor), and can be dangerous. Keep container tightly closed. Keep away from heat, sparks and flame. Do not pressurize, cut, weld, braze, solder, drill, grind, or expose empty containers to heat, sparks or open flames. Use only with adequate ventilation. Avoid breathing vapor or mist.
Storage: Keep away from sources of ignition. Store in a tightly closed container. Store in a cool, dry, well-ventilated area away from incompatible substances. Flammables-area. Do not store in aluminum containers. Store protected from light and air. 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: Use process enclosure, local exhaust ventilation, or other engineering controls to control airborne levels below recommended exposure limits. Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylene glycol monoethyl ether	5 ppm TWA; Skin - potential significant contribution to overall exposure by the cutaneous r oute	0.5 ppm TWA; 1.8 mg/m3 TWA 500 ppm IDLH	200 ppm TWA; 740 mg/m3 TWA

OSHA Vacated PELs: Ethylene glycol monoethyl ether: 200 ppm TWA; 740 mg/m3 TWA
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: clear, colorless
Odor: mild odor - pleasant odor - ethereal odor - sweetish odor
pH: Not available.
Vapor Pressure: 3.8 mm Hg @ 20 deg C
Vapor Density: 3.1 (Air=1)
Evaporation Rate:0.41(BuOAc=1)
Viscosity: 2.1 cps @ 20 deg C
Boiling Point: 135 deg C
Freezing/Melting Point:-90 deg C
Decomposition Temperature: Not available.
Solubility: Soluble.
Specific Gravity/Density: 0.9300
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, excess heat, exposure to flame, prolonged exposure to air.
Incompatibilities with Other Materials: Strong oxidizing agents, strong acids, strong bases, aluminum.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide, peroxides.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 110-80-5: KK8050000
LD50/LC50:

CAS# 110-80-5:
Draize test, rabbit, eye: 50 mg Moderate;
Draize test, rabbit, eye: 500 mg/24H Mild;
Inhalation, mouse: LC50 = 1820 ppm/7H;
Inhalation, rat: LC50 = 2000 ppm/7H;
Oral, mouse: LD50 = 2451 mg/kg;
Oral, mouse: LD50 = 4000 mg/kg;
Oral, rabbit: LD50 = 1275 mg/kg;
Oral, rabbit: LD50 = 1275 mg/kg;
Oral, rat: LD50 = 2125 mg/kg;
Oral, rat: LD50 = 2125 mg/kg;
Skin, rabbit: LD50 = 3.6 mg/kg;
Skin, rat: LD50 = 3900 mg/kg;
.

Carcinogenicity:
CAS# 110-80-5: Not listed by ACGIH, IARC, NTP, or CA Prop 65.

Epidemiology: No information available.
Teratogenicity: Has caused fetotoxicity, embryotoxicity and teratogenicity in animals at doses which are not harmful to the mothers.
Reproductive Effects: Caused harmful effects to male fertility in animals. Limited human studies have indicated that 2-EE can cause reproductive effects in men.
Mutagenicity: No information available.
Neurotoxicity: See actual entry in RTECS for complete information.
Other Studies:

Section 12 - Ecological Information

Ecotoxicity: Fish: Bluegill/Sunfish: LC50 = >10000 mg/L; 96 Hr.; UnspecifiedFish: Bluegill/Sunfish: LC50 = 5400 mg/L; 24 Hr.; Modified ASTM D1345Water flea Daphnia: EC50 = >10000 mg/L; 24 Hr.; UnspecifiedBacteria: Phytobacterium phosphoreum: EC50 = 430 mg/L; 30 minutes; Microtox test No data available.
Environmental: No information available.
Physical: No information available.
Other: An estimated BCF value of 0.34 was calculated for ethylene glycol monoethyl ether, using an experimental log Kow of -0.32 and a recommended regression-derived equation. According to a classification scheme, this BCF value suggests that bioconcentration in aquatic organisms is low.

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:
CAS# 110-80-5: waste number U359.

Section 14 - Transport Information

	US DOT	Canada TDG
Shipping Name:	ETHYLENE GLYCOL MONOETHYL ETHER	Ethylene Glycol Monoethyl Ether
Hazard Class:	3	3
UN Number:	UN1171	UN1171
Packing Group:	III	III

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 110-80-5 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
CAS# 110-80-5: Section 5
TSCA Significant New Use Rule
None of the chemicals in this material have a SNUR under TSCA.
CERCLA Hazardous Substances and corresponding RQs
CAS# 110-80-5: 1000 lb final RQ; 454 kg final RQ
SARA Section 302 Extremely Hazardous Substances
None of the chemicals in this product have a TPQ.
SARA Codes
CAS # 110-80-5: immediate, delayed, fire.
Section 313
This material contains Ethylene glycol monoethyl ethe (CAS# 110-80-5, > 99%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR

Clean Air Act:
CAS# 110-80-5 (listed as Glycol ethers) is listed as a hazardous air p ollutant (HAP).
This material does not contain any Class 1 Ozone depletors.
This material does not contain any Class 2 Ozone depletors.

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# 110-80-5 can be found on the following state right to know lists: California, New Jersey, Pennsylvania, Minnesota, Massachusetts.

California Prop 65
The following statement(s) is(are) made in order to comply with the California Safe Drinking Water Act:
WARNING: This product contains Ethylene glycol monoethyl ethe, a chemical known to the state of California to cause male reproductive toxicity.
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:
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Risk Phrases:
R 10 Flammable.
R 20/21/22 Harmful by inhalation, in contact with skin and if swallowed.
R 60 May impair fertility.
R 61 May cause harm to the unborn child.

Safety Phrases:
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.

WGK (Water Danger/Protection)
CAS# 110-80-5: 1

Canada - DSL/NDSL
CAS# 110-80-5 is listed on Canada's DSL List.

Canada - WHMIS
This product has a WHMIS classification of B3, D2A, D1B.
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# 110-80-5 is listed on the Canadian Ingredient Disclosure List.

Section 16 - Additional Information

MSDS Creation Date: 6/04/1999
Revision #5 Date: 10/03/2005