Material Safety Data Sheet
2-Ethoxyethanol, 99%

ACC# 01749

Section 1 - Chemical Product and Company Identification

MSDS Name: 2-Ethoxyethanol, 99%
Catalog Numbers: AC156020000, AC156020010, AC156020025
Synonyms: Cellosolve(R); Ethylene glycol ethyl ether; 2-Ethoxyethanol; Oxitol; EGEE.
Company Identification:

Acros Organics N.V.
One Reagent Lane
Fair Lawn, NJ 07410

For information in North America, call: 800-ACROS-01
For emergencies in the US, call CHEMTREC: 800-424-9300

Section 2 - Composition, Information on Ingredients

CAS#	Chemical Name	Percent	EINECS/ELINCS
110-80-5	Ethylene glycol monoethyl ether	> 99.0	203-804-1
7732-18-5	Water	< 0.15	231-791-2

Hazard Symbols: T
Risk Phrases: 10 20/21/22

Section 3 - Hazards Identification

EMERGENCY OVERVIEW

Appearance: clear, colorless liquid. Flash Point: 110 deg F. **Warning! Flammable liquid and vapor.** May cause central nervous system depression. May cause liver and kidney damage. May cause blood abnormalities. May cause reproductive and fetal effects. This material has been reported to be susceptible to autoxidation and therefore should be classified as peroxidizable. May form explosive peroxides. Causes eye irritation. Causes respiratory tract irritation. May cause skin irritation. May be harmful if swallowed, inhaled, or absorbed through the skin. Possible birth defect hazard. May cause birth defects based on animal data.
Target Organs: Blood, kidneys, central nervous system, liver, reproductive system.

Potential Health Effects

Eye: Causes eye irritation. May cause transient corneal injury.
Skin: May cause 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.
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. May cause liver and kidney damage. May cause dyspnea (difficult or labored breathing).
Chronic: May cause anemia and other blood cell abnormalities. Prolonged inhalation can cause a sharp drop in blood pressure, throbbing, headache, nausea, and weakness. 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.

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. Flush skin with plenty of water for at least 15 minutes while removing contaminated clothing and shoes.
Ingestion: If victim is conscious and alert, give 2-4 cupfuls of milk or water. Never give anything by mouth to an unconscious person. Get medical aid immediately.
Inhalation: Remove from exposure and move to fresh air immediately. 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. Vapors may form an explosive mixture with air. Use water spray to keep fire-exposed containers cool. Flammable liquid and vapor. May be ignited by heat, sparks, and flame. 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: For small fires, use dry chemical, carbon dioxide, water spray or alcohol-resistant foam. Use water spray to cool fire-exposed containers. Water may be ineffective. Do NOT use straight streams of water. For large fires, use dry chemical, carbon dioxide, alcohol-resistant foam, or water spray.
Flash Point: 110e deg F (43.33 deg C)
Autoignition Temperature: 235 deg C (455.00 deg F)
Explosion Limits, Lower: 1.70
Upper: 15.60
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. A vapor suppressing foam may be used to reduce vapors. Water spray may reduce vapor but may not prevent ignition in closed spaces.

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. 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: Facilities storing or utilizing this material should be equipped with an eyewash facility and a safety shower. Use adequate general or local exhaust ventilation to keep airborne concentrations below the permissible exposure limits.
Exposure Limits

Chemical Name	ACGIH	NIOSH	OSHA - Final PELs
Ethylene glycol monoethyl ether	5 ppm TWA; skin - potential for cutaneous absorption	0.5 ppm TWA; 1.8 mg/m3 TWA 500 ppm IDLH	200 ppm TWA; 740 mg/m3 TWA
Water	none listed	none listed	none listed

OSHA Vacated PELs: Ethylene glycol monoethyl ether: 200 ppm TWA; 740 mg/m3 TWA Water: No OSHA Vacated PELs are listed for this chemical.
Personal Protective Equipment
Eyes: Wear chemical 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. Always use a NIOSH or European Standard EN 149 approved respirator when necessary.

Section 9 - Physical and Chemical Properties

Physical State: Liquid
Appearance: clear, colorless
Odor: practically odorless
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: Not available.
Boiling Point: 135 deg C
Freezing/Melting Point:-70 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 bases, strong acids, copper, aluminum.
Hazardous Decomposition Products: Carbon monoxide, carbon dioxide.
Hazardous Polymerization: Will not occur.

Section 11 - Toxicological Information

RTECS#:
CAS# 110-80-5: KK8050000

CAS# 7732-18-5: ZC0110000
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;

CAS# 7732-18-5:
Oral, rat: LD50 = >90 mL/kg;

Carcinogenicity:
CAS# 110-80-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA. CAS# 7732-18-5: Not listed by ACGIH, IARC, NIOSH, NTP, or OSHA.
Epidemiology: No information available.
Teratogenicity: Effects on Newborn: Behavioral, inhalation(ihl)-rat TCLo=25ppm/7H; Biochemical and Metabolic, oral-rat TDLo= 175mg/kg; Growth Statistics, ihl-rat TCLo=100ppm/6H. Embryo or Fetus: Death, orl-monkey TDLo=930mg/kg; Fetotoxicity, oral-rat TDLo=350mg/kg. Specific Developmental Abnormalities: Cardiovascular, oral-rat TDLo=175mg/kg; Central nervous system and Urogenital, intraperitoneal(ipr)-rat TDLo=190mg/kg; Musculoskeletal, ipr-rat TDLo=330mg/kg.
Reproductive Effects: Fertility: Abortion, oral-monkey TDLo=930mg/kg; Female index, ihl-rat TCLo=100ppm/6H; Litter size, ihl-mouse TCLo=50ppm/6H. Paternal Effects: Spermatogenesis, oral-rat TDLo=250mg/kg; Testes/sperm duct/epididymis, oral-rat TDLo=100mg/kg.
Neurotoxicity: See actual entry in RTECS for complete information.
Mutagenicity: No information available.
Other Studies: See actual entry in RTECS for complete information.

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	IATA	RID/ADR	IMO	Canada TDG
Shipping Name:	ETHYLENE GLYCOL MONOETHYL ETHER				No information available.
Hazard Class:	3				
UN Number:	UN1171				
Packing Group:	III				

Section 15 - Regulatory Information

US FEDERAL

TSCA
CAS# 110-80-5 is listed on the TSCA inventory.
CAS# 7732-18-5 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
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.
SARA

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: acute, chronic, flammable.
Section 313
This material contains Ethylene glycol monoethyl ethe (CAS# 110-80-5, 99 0%),which is subject to the reporting requirements of Section 313 of SARA Title III and 40 CFR Part 373.
Clean Air Act:
This material does not contain any hazardous air pollutants. 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.
CAS# 7732-18-5 is not present on state lists from CA, PA, MN, MA, FL, or NJ.
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 birth defects or other reproductive harm. WARNING: This product contains Ethylene glycol monoethyl ethe, a chemical known to the state of California to cause birth defects or other reproductive harm. 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
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
CAS# 7732-18-5: No information available.
Canada - DSL/NDSL
CAS# 110-80-5 is listed on Canada's DSL List.
CAS# 7732-18-5 is listed on Canada's DSL List.
Canada - WHMIS
This product does not have a WHMIS classification.
Canadian Ingredient Disclosure List
CAS# 110-80-5 is listed on the Canadian Ingredient Disclosure List.
Exposure Limits
CAS# 110-80-5: OEL-AUSTRALIA:TWA 5 ppm (19 mg/m3);Skin OEL-BELGIUM: TWA 5 ppm (18 mg/m3);Skin OEL-DENMARK:TWA 5 ppm (18.5 mg/m3);Skin OE L-FINLAND:TWA 50 ppm (185 mg/m3);STEL 100 ppm (370 mg/m3);Skin OEL-FR ANCE:TWA 5 ppm (19 mg/m3);Skin OEL-GERMANY:TWA 20 ppm (75 mg/m3);Skin OEL-HUNGARY:TWA 70 mg/m3;STEL 140 mg/m3;Skin JAN9 OEL-JAPAN:TWA 5 p pm (18 mg/m3);Skin OEL-THE NETHERLANDS:TWA 5 ppm (19 mg/m3);Skin OEL -THE PHILIPPINES:TWA 200 ppm (740 mg/m3);Skin OEL-POLAND:TWA 200 mg/m 3 OEL-RUSSIA:TWA 5 ppm;STEL 5 mg/m3 OEL-SWEDEN:TWA 5 ppm (19 mg/m3); STEL 10 ppm (40 mg/m3);Skin OEL-SWITZERLAND:TWA 5 ppm (19 mg/m3);STEL 10 ppm (38 mg/m3);Skin OEL-TURKEY:TWA 200 ppm (740 mg/m3) OEL-UNITE D KINGDOM:TWA 10 ppm (37 mg/m3);Skin OEL IN BULGARIA, COLOMBIA, JORDA N, KOREA check ACGIH TLV OEL IN NEW ZEALAND, SINGAPORE, VIETNAM check ACGI TLV

Section 16 - Additional Information

MSDS Creation Date: 6/04/1999
Revision #4 Date: 3/04/2004