

EMS CATALOG NO: 12631;12641
EMS PRODUCT: Silver Extender
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MATERIAL SAFETY DATA SHEET

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ELECTRON MICROSCOPY SCIENCES

321 MORRIS ROAD

P.O. BOX 251

FORT WASHINGTON, PA 19034

(215) 646-1566

24 HOUR EMERGENCY PHONE NUMBER

CHEMTREC: (800) 424-9300

FOR PRODUCT AND SALES INFORMATION

CONTACT ELECTRON MICROSCOPY SCIENCES OFFICE ABOVE.

PRODUCT IDENTIFICATION

CHEMICAL NAME: 2-Ethoxyethanol
TRADE NAME & SYNONYMS: "Cellosolve"; Ethylene Glycol Monoethyl Ether
CHEMICAL FAMILY: Glycol Ether
FORMULA: C₂H₅OCH₂CH₂OH
MOLECULAR WGT: 90.12

COMPOSITION/INFORMATION ON INGREDIENTS

Component	CAS #	Appr %
2-Ethoxyethanol	110-80-5	100%

HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

Harmful if inhaled, swallowed or absorbed through skin.
Vapor irritating.
Combustible liquid and vapor.
May cause damage to kidneys, lungs, spleen and liver.
Tests on laboratory animals indicate possible harmful effects on reproductive organs and pregnancies.

POTENTIAL HEALTH EFFECTS (ACUTE AND CHRONIC)

SYMPTOMS OF EXPOSURE:

Harmful if inhaled, swallowed or absorbed through skin, causes headache, nausea, breathing difficulties.
Contact with skin or eyes causes irritation.
Vapor irritating to eyes and respiratory passages.
Material can be rapidly absorbed through skin and not cause irritation, therefore irritation is not, of itself, a reliable indicator of overexposure.
Kidney, lung, spleen and liver damage may result from excessive overexposure.

MEDICAL CONDITION AGGRAVATED BY EXPOSURE:

Pregnancy, respiratory, liver, kidney and spleen conditions.

ROUTES OF ENTRY: Inhalation, ingestion or skin contact.

CARCINOGENICITY:

The material is not listed (IARC, NTP, OSHA) AS cancer causing agent.

FIRST AID MEASURES

EMERGENCY FIRST AID:

GET MEDICAL ASSISTANCE FOR ALL CASES OF OVEREXPOSURE.

SKIN: Immediately flush thoroughly with large amounts of water.

EYES: Immediately flush thoroughly with water for at least 15 minutes.

INHALATION: Remove to fresh air; give artificial respiration if breathing has stopped.

INGESTION: If conscious, drink water and induce vomiting immediately.
Never give anything by mouth to an unconscious person.
Remove contaminated clothing and wash before reuse.

FIRE FIGHTING MEASURES

FLASH POINT (F): 110oF (tcc)

FLAMMABLE LIMITS LEL (%): 1.70
FLAMMABLE LIMITS UEL (%): 15.60
EXTINGUISHING MEDIA: Water spray, CO2, foam, dry chemical

FIRE FIGHTING PROCEDURES:
Wear self-contained breathing apparatus and protective clothing.

FIRE & EXPLOSION HAZARDS:
Vapor can travel distances to ignition source and flash back.

ACCIDENTAL RELEASE MEASURES

SPILL RESPONSE:

Evacuate the area of all unnecessary personnel.
Wear suitable protective equipment listed under Exposure/Personal Protection.
Eliminate any ignition sources until the area is determined to be free from explosion or fire hazards.
Contain the release and eliminate its source, if this can be done without risk.
Take up and containerize for proper disposal as described under Disposal.
Comply with Federal, State, and local regulations on reporting releases.

HANDLING AND STORAGE

HANDLING & STORAGE:

Keep container tightly closed.
Store in a cool, well-ventilated area away from heat and sources of ignition.
Store separate from oxidizers and alkalies.
Do not breathe vapor.
Do not get in eyes, on skin, or on clothing.
Electrically ground all equipment when handling this product.
Retained residue may make empty containers hazardous; use caution!

EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS AND PERSONAL PROTECTIVE EQUIPMENT:

Ventilation, Respiratory Protection, Protective Clothing, Eye Protection
Respiratory Protection: If workplace exposure limit(s) of product or any component is exceeded, a NIOSH/MSHA approved air supplied respirator is advised in absence of proper environmental control. OSHA regulations also permit other NIOSH/MSHA respirators (negative pressure type) under specified conditions. Engineering and/or administrative controls should be implemented to reduce

exposure.

Material must be handled or transferred in an approved fume hood or with equivalent ventilation.

Protective gloves must be worn to prevent skin contact (Butyl Rubber or equivalent).

Safety glasses with side shields must be worn at all times.

Impervious protective clothing should be worn to prevent skin contact.

WORK / HYGENIC PRACTICES:

Wash thoroughly after handling.

Do not take internally.

Eye wash and safety equipment should be readily available.

EXPOSURE GUIDELINES

OSHA - PEL:

Component	TWA		STEL		CL		Skin
	PPM	MG/M3	PPM	MG/M3	PPM	MG/M3	
2-Ethoxyethanol	200	740					X

ACGIH - TLV:

Component	TWA		STEL		CL		Skin
	PPM	MG/M3	PPM	MG/M3	PPM	MG/M3	
2-Ethoxyethanol	5	18					X

PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT: 135oC (760mm Hg)
MELTING POINT: N/A
EVAPORATION RATE: <.32 (Butyl Acetate = 1)
SPECIFIC GRAVITY: 0.93 (H2O = 1)
VAPOR PRESSURE: 4.0 (mm Hg)
VAPOR DENSITY: 3.0 (air = 1)
VOLATILE BY VOLUME (%): 100
SOLUBILITY IN WATER: Miscible
APPEARANCE AND ODOR: Clear, colorless liquid mild, pleasant odor.

TSCA LISTING: Yes
CERCLA RQ (lbs): 1000
OSHA floor list: Yes
SARA 313: Yes
DeMinimus for SARA 313 (%): 1.0

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SOLUBILITY IN WATER: Miscible
APPEARANCE AND ODOR: Clear, colorless liquid mild, pleasant odor.

STABILITY AND REACTIVITY

STABILITY: Yes
INCOMPATIBILITY: Acids, oxidizers, alkalies.
HAZARDOUS DECOMPOSITION: COx.
HAZARDOUS POLYMERIZATION: Does not occur.
CONDITIONS TO AVOID: Heat, sparks, open flame.

TOXICOLOGICAL INFORMATION

TOXICITY DATA: orl - gpg LD50: 1400 mg/kg
inh - mus LC50: 1820 ppm/7H

TOXICOLOGICAL FINDINGS:

Tests on laboratory animals indicate material may produce adverse mutagenic and reproductive effects.
Cited in Registry of Toxic Effects of Chemical Substances (RTECS)

DISPOSAL CONSIDERATIONS:

EPA WASTE NUMBERS: U359

TREATMENT:

Specified Technology - Contact your local permitted waste disposal site (TSD) for permissible treatment sites.
ALWAYS CONTACT A PERMITTED WASTE DISPOSER (TSD) TO ASSURE COMPLIANCE WITH ALL CURRENT LOCAL, STATE AND FEDERAL REGULATIONS.

TRANSPORT INFORMATION

DOT Proper Shipping Name: Ethylene Glycol Monoethyl Ether

DOT ID Number: UN1171

REGULATORY INFORMATION

TSCA Statement:

The CAS number of this product is listed on the TSCA Inventory.

Component	SARA EHS (302)	SARA EHS TPQ (lbs)	CERCLA RQ (lbs)
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2-Ethoxyethanol			1000
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Component	OSHA Floor List	SARA 313	DeMinimis for SARA 313 %
2-Ethoxyethanol	Y	Y	1.0

OTHER INFORMATION

Ethylene Glycol Monoethyl Ether is listed as known to the State of California to cause birth defects or other reproductive harm.

N/A = Not Available
N/E = None Established

NFPA Hazard Ratings:
Health: 2
Flammability: 2
Reactivity: 0

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