



Section 1 – Company Information

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Section 2 – Product Identification/ Information on Ingredients

PRODUCT NAME Ethoxy Propanol
CAS NUMBER 52125-53-8
SYNONYM Propylene Glycol Monoethyl Ether; Glycol Ether
FORMULA N/A

PRODUCT	CAS NUMBER	% BY WEIGHT
Ethoxy Propanol	52125-53-8	95%

Section 3 – Hazards Identification

Emergency Overview

Flammable liquid and vapor. Inhalation of vapors may cause drowsiness, dizziness, headache and nausea and may lead to unconsciousness. Irritating to eyes, skin and respiratory tract.

Appearance, Color and Odor: Clear, colorless liquid; mild odor.

USA: This product is a hazardous material as defined by 29 CFR1910.1200, OSHA Hazard Communication Evaluation.

Canada: This is a controlled product under WHMIS.

Potential Health Effects

ACUTE (short term): see Section 8 for exposure controls

Relevant Route(s) of Exposure: Eye Contact, Skin Contact, Inhalation, Ingestion

Inhalation: Will form a vapor at room temperature. Overexposure to airborne vapors causes irritation to respiratory tract and nasal mucous membranes. Vapors may cause central nervous system depression with symptoms of headache, nausea, confusion, loss of coordination, dizziness and may lead to unconsciousness.

Ingestion: Swallowing large amounts may cause central nervous system depression with symptoms as described under "Inhalation" above.

Skin: Direct contact with the skin can cause slight irritation, based on animal information. This substance can be absorbed through the skin but harmful effects are not expected by this route of exposure.

Eye: Direct contact with the liquid can cause moderate to severe irritation, based on



animal information. Corneal injury and corneal opacity may occur. The vapor may cause eye irritation and tearing of the eyes.

CHRONIC (long term): see Section 11 for additional toxicological data

Repeated or prolonged contact may dry the skin and cause irritation. Long term overexposure may cause adverse effects to eyes, skin, respiratory system, central nervous system, kidneys, and liver.

Medical Conditions Aggravated by Exposure: Skin contact may aggravate an existing dermatitis

Interactions with Other Chemicals: See Section 10

Potential Environmental Effects: See Section 12.

Section 4 – First Aid Measures

Inhalation: This product is flammable. Take proper precautions (e.g. remove any sources of ignition). Take proper precautions to ensure your own safety before attempting rescue (e.g. wear appropriate protective equipment, use the buddy system). Remove source of contamination or move victim to fresh air. If breathing is difficult, trained personnel should administer emergency oxygen. If breathing is stopped, trained personnel should begin artificial respiration (AR) or if the heart has stopped cardiopulmonary resuscitation (CPR) or automated external defibrillation (AED) immediately. Immediately transport victim to an emergency care facility.

Eye Contact: Immediately flush the contaminated eye(s) with lukewarm, gently flowing water for 15-20 minutes, while holding the eyelid(s) open. If a contact lens is present, DO NOT delay irrigation or attempt to remove the lens. Take care not to rinse contaminated water into the unaffected eye or onto the face. Immediately obtain medical attention.

Skin Contact: As quickly as possible remove contaminated clothing, shoes and leather goods (e.g. watchbands, belts). Flush with lukewarm, gently flowing water for 15 minutes. If irritation persists, repeat flushing. Obtain medical attention immediately. Completely decontaminate clothing, shoes and leather goods before reuse or discard.

Ingestion: NEVER give anything by mouth if victim is rapidly losing consciousness, is unconscious or convulsing. Have victim rinse mouth thoroughly with water. DO NOT INDUCE VOMITING. If vomiting occurs naturally, have victim rinse mouth with water again. Immediately obtain medical attention.

Section 5 – Fire Fighting Measures

Flammable Properties: Flammable liquid.

Suitable extinguishing Media: Water spray, alcohol-resistant foam, carbon dioxide, chemical dry powder. Water spray can be used to absorb heat, keep containers cool and protect exposed material. If a leak or spill has not ignited, use water spray to disperse the vapors and to protect personnel attempting to stop a leak. Water spray may be used to flush spills away from ignition sources. Use water spray to cool fire-exposed containers.

Unsuitable extinguishing Media: Solid water jet ineffective as extinguishing media

Explosion Data: Above 40°C explosive vapor/air mixtures may be formed. Sensitivity to Mechanical Impact: Not sensitive Sensitivity to Static Discharge: Vapors in the flammable range



may be ignited by a static discharge of sufficient energy.

Specific Hazards arising from the Chemical:

Vapor is heavier than air and can travel a considerable distance to a source of ignition and flash back to a leak or open container. Can accumulate in confined spaces, resulting in a toxicity and flammability hazard. Concentrated solutions in water may be flammable. Closed containers may rupture violently when heated.

During a fire, products of combustion may include carbon monoxide, carbon dioxide, carbonyl compounds such as formaldehyde, acetaldehyde, methyl glyoxal, dense smoke and irritating to toxic fumes. Thermal decomposition of ethoxy propanol releases gaseous hydrocarbons, hydrogen gas and carbon monoxide.

Protective Equipment and precautions for firefighters:

Evacuate the area and fight fire from a safe distance or a protected location. Approach the fire from upwind to avoid hazardous vapors. Avoid contact with this material during firefighting operations. Wear chemical resistant clothing (chemical splash suit) and positive-pressure self-contained breathing apparatus. Contain water run-off if possible.

NFPA (estimated)

Health:	2
Flammability:	2
Instability:	0

Section 6 – Accidental Release Measures

Personal Precautions:

Isolate the area; keep all unprotected people away from the spill area. Ventilate the area. Wear all proper personal protective equipment as indicated in Section 8. Prevent inhalation exposures, skin contact and possible eye contact. Ensure clean-up is conducted by trained personnel only. Do not touch or walk through the spilled material. Extinguish or remove all ignition sources.

Environmental Precautions:

Prevent material from contaminating soil and from entering sewers or waterways.

Methods for Containment:

Isolate the spill area. Stop the spill if it is safe to do so. Contain the spill with earth, sand or suitable absorbent.

Methods for Clean-up:

Clean up spills immediately. Scoop up spilled material and any contaminated absorbents into appropriate, labeled containers. Contaminated absorbent may pose the same hazards as the spilled product.

Section 7 – Handling & Storage

Handling: Avoid contact with eyes, skin and clothing. Do not use with incompatible materials such as strong oxidizers (e.g. peroxides, nitrates and perchlorates; see Section 10). Avoid all ignition sources. Take precautions to prevent static discharges. Use non-sparking tools and lighting



systems. Post NO SMOKING signs. Never perform any welding, cutting, soldering, drilling or other hot work on an empty vessel, container or piping until all liquid and vapors have been cleared.

Storage:

Store in a cool, dry, well-ventilated area away from sunlight, heat and ignition sources. Keep storage area away from work areas. Store away from incompatible materials such as oxidizing agents (see Section 10). Store in suitable, labeled containers. Suitable materials for containers are steel, stainless steel, and glass; do not store in aluminum, copper, and synthetic material. Keep containers tightly closed.

Section 8 – Exposure Controls & Personal Protection

Exposure Guidelines

Ingredient	ACGIH TLV (8-hr. TWA) mg/m ³	U.S. OSHA PEL (8-hr. TWA) mg/m ³	Ontario (Canada) TWAEV mg/m ³
1-Ethoxy-2-Propanol (alpha-PGMEE)	Not Established	Not Established	Not Established
2-Ethoxy-1-Propanol (beta-PGMEE)	Not Established	Not Established	Not Established
Other Exposure Guidelines: Germany recommends a TWA of 50 ppm (220 mg/m ³) and ceiling limit of 100 ppm (440 mg/m ³)			

Exposure Controls

Engineering Controls:

Provide local exhaust ventilation or general dilution to maintain airborne concentrations below exposure limits.

Personal Protection:

Eye/Face Protection:

Wear chemical safety goggles. Wear a face shield when needed to prevent skin and eye contact.

Skin Protection:

Wear chemical protective gloves. Wear chemical protective clothing as needed to prevent skin contact. Protective clothing should be made of butyl rubber. Contact safety supplier for specifications.

Respiratory Protection:

When concentrations in air exceed the occupational exposure guidelines, always wear respiratory protection. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, maintenance and inspection.

A respiratory protection program that meets OSHA's 29 CFR 1910.134 and ANSI 288.2 requirements or Canadian Standards Association (CSA) Standard 294.4-93 must be followed whenever workplace conditions warrant a respirator's use.

Other Protective Equipment:

Have a safety shower and eye-wash fountain readily available for emergency use.



General Hygiene Measures:

Remove contaminated clothing promptly. Keep contaminated clothing in closed containers; discard or launder before rewearing. Do not eat, drink or smoke in work areas. Wash hands thoroughly and promptly after handling this material. Maintain good housekeeping. Inform laundry personnel of contaminant's hazards.

Section 9 – Physical & Chemical Properties

Physical State: Liquid

Appearance, Color and Odor: Clear, colorless; mild odor

Odor Threshold: Not available

pH: Not available

Specific Gravity: 0.897 at 20°C

(water = 1)

Partition coefficient: log Pow = 0.3

(n-octanol/water)

Solubility: In water 36.6g/100mL @25°C

Viscosity: 2.5 centistokes at 20°C

Decomposition Temperature: Not available

Flash Point & method: 40°C (104°F), Closed Cup.

Autoignition Temperature: 255°C (491°F)

Flammability Limits in Air: LFL: 1.3%

UFL: 12%

Vapor Pressure: 1 kPa (7.5 mm Hg) @ 25°C

Vapor Density: 3.6

(Air = 1)

Evaporation Rate: 0.54

(n-Butyl Acetate = 1)

Boiling Point Range: 130-133°C (266-271°F)

Melting Point: -90°C (-130°F)

Section 10 – Stability & Reactivity Data

Chemical Stability:

Normally stable. Oxidizes on prolonged contact with air to form peroxides. Hygroscopic.

Conditions to Avoid:

Avoid static discharge, sparks, temperatures of 35°C or above, sources of ignition, direct sunlight, and prolonged exposure to air. Keep away from water, moisture and humidity.

Incompatible Materials:

Strong oxidizing agents - may react violently, increasing risk of fire or explosion and form very toxic and carcinogenic byproducts.

Alkaline metals, metal hydrides - may release flammable hydrogen gas.



Lewis acids - may react violently, toxic and corrosive gases may be released.
 Halogenating agents - reaction evolves heat; toxic and corrosive gases may be released.
 Acylating agents - reaction may evolve heat; toxic and corrosive gases may be formed.
 Halogens - reaction may be delayed and releases heat.
 Epoxides, carbon disulfide, isocyanates, isothiocyanates - reaction may be rapid with evolution of heat. Strong acids - reaction evolves heat. Aldehydes, ketones, anhydrides - reaction may evolve heat. Copper and copper alloys, aluminum and aluminum alloys, zinc and galvanized metals - flammable hydrogen gas may be produced. Corrosivity to metals and non-metals: There is no specific information available but ethoxypropanol is expected to be corrosive to aluminum alloys; slightly corrosive to carbon steel and to 301 and 302 stainless steel alloys, but not corrosive to other 300 series or 400 series stainless steel alloys. Ethoxypropanol is expected to attack polyvinylidene chloride, polyvinyl chloride, polyurethane, polymethacrylate acrylic, polycarbonate, thermoset polyesters, and polystyrene. May slightly attack polypropylene, chlorinated polyether, high density polyethylene, and polyphenylene oxide. It is not expected to attack fluorinated plastics such as Teflon; chlorinated polyvinyl chloride, most polyamide plastics, and thermoset epoxy.

Hazardous Decomposition Products:

During a fire, products of combustion may include carbon monoxide, carbon dioxide, nitrogen oxides, dense smoke and irritating to toxic fumes.

Possibility of Hazardous Reactions:

On exposure to air can form peroxides.

Section 11 – Toxicological Information

Acute Toxicity Data

	LD50 Oral (mg/kg)	LD50 Dermal (mg/kg)	LC50 Inhalation (4 hrs.)
Ethoxypropanol	4 400 (rat)	8 065 (rabbit)	> 3 337 ppm (rat)

Chronic Toxicity Data

Carcinogenicity: The table below indicates whether each agency has listed any ingredient as a carcinogen.

	ACGIH	IARC	NTP	OSHA
1-Ethoxy-2-Propanol (alpha-PGME)	Not listed	Not listed	Not listed	Not listed
2-Ethoxy-1-Propanol (beta-PGME)	Not listed	Not listed	Not listed	Not listed

Irritation:

In tests with rabbits, undiluted ethoxypropanol caused moderate to severe eye irritation including discomfort, corneal injury and corneal opacity.



In tests with rabbits, application of ethoxypropanol caused mild skin irritation. Ethoxypropanol forms a vapor at normal temperatures. Overexposure to vapors and mists can irritate the eyes, nose, throat and respiratory tract, based on animal information.

Corrosivity: Not available

Sensitization: Not available

Neurological Effects:

Ingestion: Animals receiving large doses of ethoxypropanol showed signs of central nervous system depression.

Inhalation: Overexposure to vapors may cause central nervous system depression, with symptoms such as headache, nausea, light-headedness, drowsiness, dizziness and incoordination.

Skin contact: In tests with rabbits, application of high doses of ethoxypropanol (up to 13 440 mg/kg), under cover for 24 hours, caused central nervous system effects and mortality.

Genetic Effects: Negative results have been obtained in tests using cultured mammalian cells and bacteria.

Reproductive Effects: The beta isomer of PGME is expected to be metabolized in a similar way to ethylene glycol monoethyl ether, which has caused male reproductive toxicity in animal studies. This substance is not classified as toxic or harmful to reproduction.

Developmental Effects: The beta isomer of PGME is expected to be metabolized in a similar way to ethylene glycol monoethyl ether, which is teratogenic in animal studies. This substance is not classified as toxic or harmful to the unborn child.

Other: In a 13 week study, rats exposed to airborne PGME at 2 000 ppm, for 6 hours/day, 5 days/week, had minimal, reversible eye and nose irritation and a slight increase in liver weight for females. Detailed autopsy showed that liver tissues were normal. There were no changes in urine or serum composition or cellular changes in the kidney, but urine volume was increased in both sexes. Autopsy showed signs suggestive of lung irritation. At the airborne concentration of 300 ppm, urine volumes were increased in both sexes during the 12th week of exposure. There were no signs of adverse effect on the testes, blood forming tissue or blood.

Target Organ Effects: Eyes, skin, respiratory system, central nervous system, kidneys and liver

Section 12 – Ecological Information

Ecotoxicity:

Acute Toxicity to fish, LC0 > 10 000 mg/L; LC50 > 1 000 mg/L

Acute Toxicity to bacteria, EC10= 4 600 mg/L

Acute Toxicity to algae species, ECO > 100 mg/L

Persistence/Degradability:

If released into water, this substance is readily biodegraded; test: 68%, 28 days, OECD 301 D. Biodegradation BODS < 10 % ThOD.



Bioaccumulation/Accumulation:

log Pow = 0.3

This substance is slightly or not bioaccumulative.

Mobility:

VOC Content 100%. Soluble in water

Section 13 – Disposal Consideration

Waste Disposal Method:

DO NOT discharge into any sewers, on the ground, or into any body of water. Store material for disposal as indicated in Section 7 Handling and Storage. For unused, uncontaminated product, the preferred options include sending to a licensed, permitted recycler, reclaimer, incinerator or other thermal destruction device.

USA: Under RCRA, it is the responsibility of the user of the product to determine, at the time of disposal, whether the product meets RCRA criteria for hazardous waste. Dispose of in accordance with local, state and federal laws and regulations.

Canada: Dispose of in accordance with local, provincial and federal laws and regulations

Section 14 – Transportation Data

U.S. Hazardous Materials Regulation (DOT 49CFR):

UN1987, ALCOHOLS, N.O.S. (2-propanol, 1-ethoxy-), 3, PG III

Canadian Transportation of Dangerous Goods (TDG)

UN1987, ALCOHOLS, N.O.S. (2-propanol, 1-ethoxy-), 3, PG III

ADR/RID: UN1987, ALCOHOLS, N.O.S. (2-propanol, 1-ethoxy-), 3, PG III

IMDG: UN1987, ALCOHOLS, N.O.S. (2-propanol, 1-ethoxy-), 3, PG III

Marine Pollutants: None

ICAO/IATA: UN1987, ALCOHOLS, N.O.S. (2-propanol, 1-ethoxy-), 3, PG III

Section 15 – Regulatory Information

USA:

TSCA Status: Propanol, 1(or 2)-ethoxy-(CAS # 52125-53-8) is listed on the TSCA inventory. (Flag P which indicates a commenced Premanufacturing Notice (PMN) substance).



SARA Title III

Sec. 3021304: None
Sec: 311/312: Acute health hazard, Fire hazard
Sec. 313: None
CERCLA RQ: None

Canada

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

WHMIS Classification (for workplace exposures):

B2 - Flammable liquid
D2B - Material Causing Other Toxic Effects (due to eye, skin, and respiratory irritation)

NSNR Status (New Substance Notification Regulations):

Propanol, 1(or 2)-ethoxy-(CAS # 52125-53-8) and 2-Propanol, 1-ethoxy- (CAS # 1569-02-4) are listed on Canada's Domestic Substances List (DSL).

NPRI Substances (National Pollutant Release Inventory)

There are no NPRI reportable substances in this product.

Other International Inventories:

- Australia:** Listed on Australian Inventory of Chemical Substances (AICS).
- China:** Listed on the inventory.
- European Union Inventory:** Listed on the EINECS Inventory: 216-374-5
- Japan:** Listed on the inventory of Existing and New Chemical Substances (ENCS), 7-97
- Korea:** Listed on the inventory of Existing and Evaluated Chemical Substances, 2004-3-2707; KE-13477.
- New Zealand:** Listed on the inventory.
- Philippines:** Listed on the inventory of Chemicals and Chemical Substances (PICCS).

Section 16 – Other Information

Disclaimer

The above information is believed to be correct but does not purport to be all inclusive and shall be used only as a guide. The information in this document is based on the present state of our knowledge and is applicable to the product with regard to appropriate safety precautions. It does not represent any guarantee of the properties of the product.