

Ethylene Glycol

Spill Assessment

Gather Available Information

Shipping Manifest Required

Product ID: [Ethylene Glycol](#)

TDG Class, UN# & PG: [Not a DOT controlled substance](#)

Special Provisions for Transport: [none](#)

Special Provisions Exemption: [none](#)

Mixed Load Limited Quantity: [none](#)

ERAP Index: [none](#)

Passenger Vehicle Limitation: [none](#)

Uses: [Keeps engine cool during summer and from freezing in the winter. It also acts as a lubricant in the moving parts it comes in contact with.](#)

Manufacture Information

Name/ Contact:

Tel:

Cell:

Assess the Volume Spilled

Total volume:

Number of Containers:

Product not spilled:

Product recovered / Contained:

Product Information:

Physical Classification: [Liquid substance that absorbs water](#)

Color: [Colorless \(pure\) or florescent yellow/green](#)

Odor: [Odorless](#)

pH: [Not applicable](#)

Molecular Formula: [C₂H₄\(OH\)₂ also C₂H₄O₂](#)

Specific Gravity: [1.11 @ 20°C \(water = 1\)](#)

Solubility: [Very soluble in water](#)

Flash Point: [115°C](#)

Freezing point: [-13°C](#)

Vapor Density: [2.1 \(air = 1\)](#)

Neutralize: [Not applicable](#)

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Compatibility Issues: All antifreezes are glycol based products this includes both propylene glycol (PG) and ethylene glycol (EG). The only difference between these two antifreezes are the toxicity values. PG is less toxic, both acute and chronic than EG. Used EG antifreeze is a chronic toxic waste due to the heavy metals it picks up.

Safety Assessment

Responders Safety

Public Security Perimeter: 50m for liquid spills

Evacuation Perimeter: 800m for major incident involving fire

PPE Requirement for minor spills: Safety Glasses. Skin protection (Long sleeves and pants). Respirator (limited protection). Gloves.

PPE Requirement for major spills: Splash Glasses/ Goggles. Rubber Boots. Gloves (Nitrile, Neoprene, PVC). Use NIOSH approved respirators (organic vapor cartridge)

Structural Fire Fighters' Protective Clothing: Only provides limited protection

Routes of Entry: Skin contact, eyes, inhalation and ingestion

Acute Health Effects: In general, acute exposure in small quantities will not affect responders' health.

Skin contact: may slowly enter bloodstream through skin contact, if not washed off. It typically leaves the body within 1-2 days through excretion of urine.

Eye contact: irritant possibly conjunctival inflammation

Inhalation: upper respiratory irritant

Ingestion: hazardous as it may cause central nervous system depression, kidney and liver damage and cardiopulmonary effects

Decontamination Requirements: Full decon unit should be on standby.

Product Safety Information:

Toxic Vapors: Fires involving ethylene glycol may release toxic gases

Combustible: Ethylene glycol liquid and vapors are flammable.

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Vapors: Heavier than air and may travel to a source of ignition and flash back. Product of combustion includes carbon monoxide (CO).

Small Fire Hazards: Slightly flammable to flammable in the presence of open flames and sparks. Use water spray, dry chemical, alcohol foam, or carbon dioxide. Water may not be effective, but will cool containers.

Large Fire Hazards: Major fires use water spray, fog or foam. Do not use water jet.

Explosion Hazard: When heated or misted may form explosive mixture with air.

Conditions contributing to instability: Heat, sparks and open flame.
Moderate fire and explosion hazard when heated or misted into air.

Incompatibilities: can react dangerously to strong oxidizing agents, peroxides, nitrates and acids

Hazard decomposition products: Toxic gases (CO) may be released in a fire

First Aid Requirements: see MSDS for full details. Contact Manufacture.

Environmental Assessment

Assess the following Conditions

Ambient Temperatures:

Precipitation (%):

Sunrise (time)/ Sunset (time):

Slope or ground contour (% gradient):

Porous Soil (sand/ cobble):

Dense Soil (clay/ bedrock):

Ground cover (foliage/ peat/ marsh / snow):

Assess Distance to Water Body

<5m:

5-15m:

>15m:

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Identify the Water Body

Distance Marker (km #):

Name of nearby water bodies:

Fisheries assessment reports:

Distance to other tributaries:

Effects of Product into Water

Environmental effects: [Readily biodegradable in water.](#)

[Does not bioaccumulate and is not considered a cumulative hazard to the environment](#)

Toxicity: [Considered non-toxic to the aquatic environment. It is not persistent and biodegrades aerobically and anaerobically in water. The LC₅₀ 96hr for fish \(freshwater\) using ethylene glycol is >10,000mg/L. A reduction of dissolved oxygen \(DO\) is usually the most significant impact to water quality.](#)

Specific Properties: [Dispersal](#) – none

[Dissolves / solubility](#) – 100%

[Evaporation](#) – will break down within several days to a few weeks

[Emulsification](#) – does not occur

Spill Response: [Assess, Contain, Recover & Dispose. Refer to specific guidelines.](#)

Effects of Product on Air

Environmental effects: [Readily biodegradable in air.](#)

[Does not bioaccumulate and is not considered a cumulative hazard to the environment](#)

Spill to open environment (no fire): [Vapors](#) are heavier than air and may collect in low-lying areas, however ethylene glycol is not readily volatile but undergoes a photochemical oxidation process. Vapors typically break down in about 10 days. The atmospheric half-life is approximately 1-day

Hazardous Decompositions (no fires): [None](#)

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Effects of Product on Land

Environmental effects: Readily biodegradable in soil.

Does not bioaccumulate and is not considered a cumulative hazard to the environment

Effects on Land: saturation will occur as ethylene glycol is very mobile in soil. Ethylene glycol is not persistent and biodegrades with or without oxygen present. Its half-life is approximately 1-day.

Small Spills (land): Dilute with water and mop up or absorb with an inert dry material.

Large Spills (land): Water may be used to dilute spills to non-combustible mixtures.

Freezing Temperatures: Ethylene glycol will not readily freeze but it will saturate snow and ice