

# MATERIAL SAFETY DATA SHEET

## SECTION 1 PRODUCT AND COMPANY IDENTIFICATION

### PRODUCT

**Product Name:** PERMAZONE ANTIFREEZE 50/50 PREMIX  
**Product Description:** Glycol  
**Product Code:** 301218-00, 97Z171  
**Intended Use:** Antifreeze/coolant

### COMPANY IDENTIFICATION

**Supplier:** EXXON MOBIL CORPORATION  
3225 GALLOWS RD.  
FAIRFAX, VA. 22037 USA  
**24 Hour Health Emergency:** 609-737-4411  
**Transportation Emergency Phone:** 800-424-9300  
**ExxonMobil Transportation No.:** 281-834-3296  
**Product Technical Information:** 800-662-4525, 800-947-9147  
**MSDS Internet Address:** <http://www.exxon.com>, <http://www.mobil.com>

## SECTION 2 COMPOSITION / INFORMATION ON INGREDIENTS

### Reportable Hazardous Substance(s) or Complex Substance(s)

Name	CAS#	Concentration*
DIETHYLENE GLYCOL	111-46-6	1 - 5%
ETHYLENE GLYCOL	107-21-1	40 - 50%

\* All concentrations are percent by weight unless material is a gas. Gas concentrations are in percent by volume.

## SECTION 3 HAZARDS IDENTIFICATION

This material is considered to be hazardous according to regulatory guidelines (see (M)SDS Section 15).

### POTENTIAL HEALTH EFFECTS

May cause harm to the unborn child. Harmful or fatal if swallowed. Ingestion may cause serious adverse effects and may be fatal. May cause kidney failure and central nervous system effects. Prolonged exposure to elevated concentrations of mist or liquid may cause irritation of the skin, eyes, and respiratory tract. High-pressure injection under skin may cause serious damage.

**Target Organs:** Kidney | Reproductive system |

**NFPA Hazard ID:** Health: 1 Flammability: 1 Reactivity: 0  
**HMIS Hazard ID:** Health: 2\* Flammability: 1 Reactivity: 0

Product Name: PERMAZONE ANTIFREEZE 50/50 PREMIX

Revision Date: 19 Aug 2011

Page 2 of 10

**NOTE:** This material should not be used for any other purpose than the intended use in Section 1 without expert advice. Health studies have shown that chemical exposure may cause potential human health risks which may vary from person to person.

<b>SECTION 4</b>	<b>FIRST AID MEASURES</b>
------------------	---------------------------

**INHALATION**

Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**SKIN CONTACT**

Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

**EYE CONTACT**

Flush thoroughly with water. If irritation occurs, get medical assistance.

**INGESTION**

Seek immediate medical attention.

**NOTE TO PHYSICIAN**

This product contains ethylene glycol and/or diethylene glycol which, if ingested, are metabolized to toxic metabolites by the enzyme alcohol dehydrogenase, for which ethanol and 4-methylpyrazole {U.S. drug name Fomepizole, trade name Antizol} are antagonists. Administration of oral or intravenous ethanol or intravenous 4-methylpyrazole may arrest further metabolism of this material and thereby ameliorate the toxicity. Use of ethanol or 4-methylpyrazole does not affect toxic metabolites that are already present and is not a substitute for hemodialysis.

<b>SECTION 5</b>	<b>FIRE FIGHTING MEASURES</b>
------------------	-------------------------------

**EXTINGUISHING MEDIA**

**Appropriate Extinguishing Media:** Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**Inappropriate Extinguishing Media:** Straight Streams of Water or Regular Foam

**FIRE FIGHTING**

**Fire Fighting Instructions:** Material will not burn. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

**Unusual Fire Hazards:** Hazardous material. Firefighters should consider protective equipment indicated in Section 8.

**Hazardous Combustion Products:** Smoke, Fume, Aldehydes, Incomplete combustion products, Oxides of

Product Name: PERMAZONE ANTIFREEZE 50/50 PREMIX

Revision Date: 19 Aug 2011

Page 3 of 10

---

carbon

### FLAMMABILITY PROPERTIES

**Flash Point [Method]:** N/A

**Flammable Limits (Approximate volume % in air):** LEL: N/D UEL: N/D

**Autoignition Temperature:** >371°C (700°F)

## SECTION 6

### ACCIDENTAL RELEASE MEASURES

### NOTIFICATION PROCEDURES

In the event of a spill or accidental release, notify relevant authorities in accordance with all applicable regulations. US regulations require reporting releases of this material to the environment which exceed the applicable reportable quantity or oil spills which could reach any waterway including intermittent dry creeks. The National Response Center can be reached at (800)424-8802.

### PROTECTIVE MEASURES

Avoid contact with spilled material. Warn or evacuate occupants in surrounding and downwind areas if required due to toxicity or flammability of the material. See Section 5 for fire fighting information. See the Hazard Identification Section for Significant Hazards. See Section 4 for First Aid Advice. See Section 8 for advice on the minimum requirements for personal protective equipment. Additional protective measures may be necessary, depending on the specific circumstances and/or the expert judgment of the emergency responders.

### SPILL MANAGEMENT

**Land Spill:** Stop leak if you can do it without risk. Do not touch or walk through spilled material. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Recover by pumping or with suitable absorbent.

**Water Spill:** Stop leak if you can do it without risk. Consult an expert. Warn other shipping. Material will sink. Remove material, as much as possible, using mechanical equipment.

Water spill and land spill recommendations are based on the most likely spill scenario for this material; however, geographic conditions, wind, temperature, (and in the case of a water spill) wave and current direction and speed may greatly influence the appropriate action to be taken. For this reason, local experts should be consulted. Note: Local regulations may prescribe or limit action to be taken.

### ENVIRONMENTAL PRECAUTIONS

Remove debris in path of spill and remove contaminated debris from shoreline and water surface and dispose of according to local regulations. Large Spills: Dike far ahead of liquid spill for later recovery and disposal. Prevent entry into waterways, sewers, basements or confined areas.

## SECTION 7

### HANDLING AND STORAGE

### HANDLING

Avoid breathing mists or vapors. Avoid contact with skin. Prevent small spills and leakage to avoid slip hazard.

**Static Accumulator:** This material is not a static accumulator.

### STORAGE

Do not store in open or unlabelled containers.

<b>SECTION 8</b>	<b>EXPOSURE CONTROLS / PERSONAL PROTECTION</b>
------------------	--

### EXPOSURE LIMIT VALUES

Exposure limits/standards (Note: Exposure limits are not additive)

Source	Form	Limit / Standard			NOTE	Source
DIETHYLENE GLYCOL		TWA	10 mg/m <sup>3</sup>		N/A	AIHA WEEL
ETHYLENE GLYCOL	Aerosol.	Ceiling	100 mg/m <sup>3</sup>		N/A	ACGIH

NOTE: Limits/standards shown for guidance only. Follow applicable regulations.

### ENGINEERING CONTROLS

The level of protection and types of controls necessary will vary depending upon potential exposure conditions. Control measures to consider:

No special requirements under ordinary conditions of use and with adequate ventilation.

### PERSONAL PROTECTION

Personal protective equipment selections vary based on potential exposure conditions such as applications, handling practices, concentration and ventilation. Information on the selection of protective equipment for use with this material, as provided below, is based upon intended, normal usage.

**Respiratory Protection:** If engineering controls do not maintain airborne contaminant concentrations at a level which is adequate to protect worker health, an approved respirator may be appropriate. Respirator selection, use, and maintenance must be in accordance with regulatory requirements, if applicable. Types of respirators to be considered for this material include:

No protection is ordinarily required under normal conditions of use and with adequate ventilation.

For high airborne concentrations, use an approved supplied-air respirator, operated in positive pressure mode. Supplied air respirators with an escape bottle may be appropriate when oxygen levels are inadequate, gas/vapor warning properties are poor, or if air purifying filter capacity/rating may be exceeded.

**Hand Protection:** Any specific glove information provided is based on published literature and glove manufacturer data. Glove suitability and breakthrough time will differ depending on the specific use conditions. Contact the glove manufacturer for specific advice on glove selection and breakthrough times for your use conditions. Inspect and replace worn or damaged gloves. The types of gloves to be considered for this material include:

If prolonged or repeated contact is likely, chemical resistant gloves are recommended. If contact with forearms is likely, wear gauntlet style gloves.

**Eye Protection:** If contact is likely, safety glasses with side shields are recommended.

**Skin and Body Protection:** Any specific clothing information provided is based on published literature or manufacturer data. The types of clothing to be considered for this material include:

If prolonged or repeated contact is likely, chemical, and oil resistant clothing is recommended.

Product Name: PERMAZONE ANTIFREEZE 50/50 PREMIX

Revision Date: 19 Aug 2011

Page 5 of 10

**Specific Hygiene Measures:** Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants. Discard contaminated clothing and footwear that cannot be cleaned. Practice good housekeeping.

## ENVIRONMENTAL CONTROLS

See Sections 6, 7, 12, 13.

## SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

**Note:** Physical and chemical properties are provided for safety, health and environmental considerations only and may not fully represent product specifications. Contact the Supplier for additional information.

### GENERAL INFORMATION

**Physical State:** Liquid  
**Color:** Green  
**Odor:** Characteristic  
**Odor Threshold:** N/D

### IMPORTANT HEALTH, SAFETY, AND ENVIRONMENTAL INFORMATION

**Relative Density (at 15 C):** 1.07  
**Flash Point [Method]:** N/A  
**Flammable Limits (Approximate volume % in air):** LEL: N/D UEL: N/D  
**Autoignition Temperature:** >371°C (700°F)  
**Boiling Point / Range:** 106C (223F) - 108C (226F)  
**Vapor Density (Air = 1):** 2.1 at 101 kPa [n-Butyl Acetate]  
**Vapor Pressure:** < 0.013 kPa (0.1 mm Hg) at 20 C  
**Evaporation Rate (n-butyl acetate = 1):** N/D  
**pH:** 10.5 - 11  
**Log Pow (n-Octanol/Water Partition Coefficient):** < 2  
**Solubility in Water:** Complete  
**Viscosity:** <15.6 cSt (15.6 mm<sup>2</sup>/sec) at 40 C  
**Oxidizing Properties:** See Hazards Identification Section.

### OTHER INFORMATION

**Freezing Point:** -18°C (0°F)  
**Melting Point:** N/D

## SECTION 10 STABILITY AND REACTIVITY

**STABILITY:** Material is stable under normal conditions.

**CONDITIONS TO AVOID:** High energy sources of ignition.

**MATERIALS TO AVOID:** Strong oxidizers, Strong Acids

**HAZARDOUS DECOMPOSITION PRODUCTS:** Material does not decompose at ambient temperatures.

**HAZARDOUS POLYMERIZATION:** Will not occur.

Product Name: PERMAZONE ANTIFREEZE 50/50 PREMIX

Revision Date: 19 Aug 2011

Page 6 of 10

<b>SECTION 11</b>	<b>TOXICOLOGICAL INFORMATION</b>
-------------------	----------------------------------

**ACUTE TOXICITY**

<u>Route of Exposure</u>	<u>Conclusion / Remarks</u>
<b>Inhalation</b>	
Toxicity (Rat): LC50 > 5000 mg/m3	Minimally Toxic. Based on test data for structurally similar materials.
Irritation: Data available.	Negligible hazard at ambient/normal handling temperatures. Based on test data for structurally similar materials.
<b>Ingestion</b>	
Toxicity (Human): LDLo 100 ml	Moderately toxic. Based on test data for structurally similar materials.
<b>Skin</b>	
Toxicity (Rabbit): LD50 > 2000 mg/kg	Minimally Toxic. Based on test data for structurally similar materials.
Irritation (Rabbit): Data available.	Negligible irritation to skin at ambient temperatures. Based on test data for structurally similar materials.
<b>Eye</b>	
Irritation (Rabbit): Data available.	May cause mild, short-lasting discomfort to eyes. Based on test data for structurally similar materials.

**CHRONIC/OTHER EFFECTS**

**Contains:**

DIETHYLENE GLYCOL (DEG): Orally, DEG is more toxic to humans than animal test data indicate. Probable lethal dose for an adult is about 50 ml (2 oz.), or 2 -3 swallows. Smaller amounts may cause kidney degeneration and failure. Benign urinary bladder tumors were observed in rats, no tumors were observed in mice.

ETHYLENE GLYCOL (EG): Repeated high oral exposure has caused kidney damage, neurological effects, degeneration of the liver and changes in blood chemistry and circulating blood cells in laboratory animals. Repeated overexposure has the potential to cause similar toxic effects in humans. EG causes developmental and reproductive effects at high dose levels in laboratory animals. The relevance of these findings to humans is uncertain.

Additional information is available by request.

The following ingredients are cited on the lists below: None.

--REGULATORY LISTS SEARCHED--

1 = NTP CARC  
2 = NTP SUS

3 = IARC 1  
4 = IARC 2A

5 = IARC 2B  
6 = OSHA CARC

<b>SECTION 12</b>	<b>ECOLOGICAL INFORMATION</b>
-------------------	-------------------------------

The information given is based on data available for the material, the components of the material, and similar materials.

**ECOTOXICITY**

Material -- Not expected to be harmful to aquatic organisms.

Product Name: PERMAZONE ANTIFREEZE 50/50 PREMIX

Revision Date: 19 Aug 2011

Page 7 of 10

#### MOBILITY

Material -- Expected to remain in water or migrate through soil.

#### PERSISTENCE AND DEGRADABILITY

##### Biodegradation:

Material -- Expected to be readily biodegradable.

##### Atmospheric Oxidation:

Material -- Expected to degrade rapidly in air

#### BIOACCUMULATION POTENTIAL

Material -- Potential to bioaccumulate is low.

### SECTION 13

### DISPOSAL CONSIDERATIONS

Disposal recommendations based on material as supplied. Disposal must be in accordance with current applicable laws and regulations, and material characteristics at time of disposal.

#### DISPOSAL RECOMMENDATIONS

Even though this product is biodegradable, it must not be indiscriminately discarded into the environment. Product is suitable for burning in an enclosed controlled burner for fuel value or disposal by supervised incineration at very high temperatures to prevent formation of undesirable combustion products.

#### REGULATORY DISPOSAL INFORMATION

RCRA Information: The unused product, in our opinion, is not specifically listed by the EPA as a hazardous waste (40 CFR, Part 261D), nor is it formulated to contain materials which are listed as hazardous wastes. It does not exhibit the hazardous characteristics of ignitability, corrosivity or reactivity and is not formulated with contaminants as determined by the Toxicity Characteristic Leaching Procedure (TCLP). However, used product may be regulated.

**Empty Container Warning** Empty Container Warning (where applicable): Empty containers may contain residue and can be dangerous. Do not attempt to refill or clean containers without proper instructions. Empty drums should be completely drained and safely stored until appropriately reconditioned or disposed. Empty containers should be taken for recycling, recovery, or disposal through suitably qualified or licensed contractor and in accordance with governmental regulations. **DO NOT PRESSURISE, CUT, WELD, BRAZE, SOLDER, DRILL, GRIND, OR EXPOSE SUCH CONTAINERS TO HEAT, FLAME, SPARKS, STATIC ELECTRICITY, OR OTHER SOURCES OF IGNITION. THEY MAY EXPLODE AND CAUSE INJURY OR DEATH.**

### SECTION 14

### TRANSPORT INFORMATION

#### LAND (DOT)

**Proper Shipping Name:** ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Ethylene Glycol )

**Hazard Class & Division:** 9

**ID Number:** 3082

**Packing Group:** III

**Product RQ:** 10416.67 LBS - ETHYLENE GLYCOL

**ERG Number:** 171

Product Name: PERMAZONE ANTIFREEZE 50/50 PREMIX

Revision Date: 19 Aug 2011

Page 8 of 10

**Label(s):** 9

**Transport Document Name:** UN3082, ENVIRONMENTALLY HAZARDOUS SUBSTANCES, LIQUID, N.O.S. (Ethylene Glycol), 9, PG III, RQ

Footnote: This material is not regulated under 49 CFR when the quantity in a package is less than the Product RQ.

**LAND (TDG):** Not Regulated for Land Transport

**SEA (IMDG):** Not Regulated for Sea Transport according to IMDG-Code

**AIR (IATA):** Not Regulated for Air Transport

SECTION 15	REGULATORY INFORMATION
------------	------------------------

**OSHA HAZARD COMMUNICATION STANDARD:** When used for its intended purpose, this material is classified as hazardous in accordance with OSHA 29CFR 1910.1200.

**Complies with the following national/regional chemical inventory requirements::** EINECS, PICCS, ENCS, AICS, KECI, TSCA, DSL

**EPCRA:** This material contains no extremely hazardous substances.

**CERCLA:**

Chemical Name	CAS Number	Typical Value	Component RQ	Product RQ
ETHYLENE GLYCOL	107-21-1	40 - 50%	5000 LBS	10526.32 LBS
ETHYLENE GLYCOL	107-21-1	40 - 50%	5000 LBS	10416.67 LBS

**SARA (311/312) REPORTABLE HAZARD CATEGORIES:** Immediate Health. Delayed Health.

**SARA (313) TOXIC RELEASE INVENTORY:**

Chemical Name	CAS Number	Typical Value
ETHYLENE GLYCOL	107-21-1	40 - 50%

The following ingredients are cited on the lists below:

Chemical Name	CAS Number	List Citations
DIETHYLENE GLYCOL	111-46-6	16, 19
ETHYLENE GLYCOL	107-21-1	1, 13, 16, 17, 18, 19

--REGULATORY LISTS SEARCHED--

1 = ACGIH ALL  
2 = ACGIH A1

6 = TSCA 5a2  
7 = TSCA 5e

11 = CA P65 REPRO  
12 = CA RTK

16 = MN RTK  
17 = NJ RTK



Product Name: PERMAZONE ANTIFREEZE 50/50 PREMIX

Revision Date: 19 Aug 2011

Page 9 of 10

---

3 = ACGIH A2	8 = TSCA 6	13 = IL RTK	18 = PA RTK
4 = OSHA Z	9 = TSCA 12b	14 = LA RTK	19 = RI RTK
5 = TSCA 4	10 = CA P65 CARC	15 = MI 293	

Code key: CARC=Carcinogen; REPRO=Reproductive

<b>SECTION 16</b>	<b>OTHER INFORMATION</b>
-------------------	--------------------------

N/D = Not determined, N/A = Not applicable

**THIS SAFETY DATA SHEET CONTAINS THE FOLLOWING REVISIONS:**

Revision Changes:

Section 04: First Aid Inhalation - Header was modified.

Section 04: First Aid Ingestion - Header was modified.

Section 06: Protective Measures was modified.

Section 09: Phys/Chem Properties Note was modified.

Hazard Identification: Health Hazards was modified.

Hazard Identification: HMIS Flammability was modified.

Hazard Identification: NFPA Flammability was modified.

Section 15: National Chemical Inventory Listing - Header was modified.

Section 15: National Chemical Inventory Listing was modified.

-----  
**PRECAUTIONARY LABEL TEXT:**

**Contains:** ETHYLENE GLYCOL

**DANGER!**

**HEALTH HAZARDS**

May cause harm to the unborn child. Harmful or fatal if swallowed.

**Target Organs:** Kidney | Reproductive system |

**FIRST AID**

**Inhalation:** Remove from further exposure. For those providing assistance, avoid exposure to yourself or others. Use adequate respiratory protection. If respiratory irritation, dizziness, nausea, or unconsciousness occurs, seek immediate medical assistance. If breathing has stopped, assist ventilation with a mechanical device or use mouth-to-mouth resuscitation.

**Eye:** Flush thoroughly with water. If irritation occurs, get medical assistance.

**Oral:** Seek immediate medical attention.

**Skin:** Wash contact areas with soap and water. If product is injected into or under the skin, or into any part of the body, regardless of the appearance of the wound or its size, the individual should be evaluated immediately by a physician as a surgical emergency. Even though initial symptoms from high pressure injection may be minimal or absent, early surgical treatment within the first few hours may significantly reduce the ultimate extent of injury.

**FIRE FIGHTING MEDIA**

Use water fog, alcohol-resistant foam, dry chemical or carbon dioxide (CO<sub>2</sub>) to extinguish flames.

**SPILL/LEAK**

**Land Spill:** Stop leak if you can do it without risk. Small Spills: Absorb with earth, sand or other non-combustible material and transfer to containers for later disposal. Recover by pumping or with suitable absorbent. Do not touch or walk through spilled material.



Product Name: PERMAZONE ANTIFREEZE 50/50 PREMIX

Revision Date: 19 Aug 2011

Page 10 of 10

---

**Water Spill:** Stop leak if you can do it without risk. Report spills as required to appropriate authorities. Material will sink. This product emulsifies, disperses or is miscible in water. Consult an expert.

---

The information and recommendations contained herein are, to the best of ExxonMobil's knowledge and belief, accurate and reliable as of the date issued. You can contact ExxonMobil to insure that this document is the most current available from ExxonMobil. The information and recommendations are offered for the user's consideration and examination. It is the user's responsibility to satisfy itself that the product is suitable for the intended use. If buyer repackages this product, it is the user's responsibility to insure proper health, safety and other necessary information is included with and/or on the container. Appropriate warnings and safe-handling procedures should be provided to handlers and users. Alteration of this document is strictly prohibited. Except to the extent required by law, re-publication or retransmission of this document, in whole or in part, is not permitted. The term, "ExxonMobil" is used for convenience, and may include any one or more of ExxonMobil Chemical Company, Exxon Mobil Corporation, or any affiliates in which they directly or indirectly hold any interest.

---

Internal Use Only

MHC: 2, 0, 0, 0, 0, 0

PPEC: C

DGN: 7094472XUS (1011501)

---

Copyright 2002 Exxon Mobil Corporation, All rights reserved