

MATERIAL SAFETY DATA SHEET

Revision Date: 11/16/2004

SECTION 1	PRODUCT AND COMPANY IDENTIFICATION
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PRODUCT: PENNZOIL® Antifreeze and Summer Coolant

MSDS NUMBER: 600950LU - 1

PRODUCT CODE(S): 2744, 2748

MANUFACTURER

SOPUS Products

P.O. Box 4427

Houston, TX. 77210-4427

TELEPHONE NUMBERS

Spill Information: (877) 242-7400

Health Information: (877) 504-9351

MSDS Assistance Number: (877) 276-7285

SECTION 2	PRODUCT/INGREDIENTS
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INGREDIENTS

Antifreeze/Coolant

Ethylene Glycol

Deionized Water

Phosphoric acid

CAS#

107-21-1

7732-18-5

7664-38-2

CONCENTRATION

90 - 98 %weight

1 - 3 %weight

1 - 3 %weight

SECTION 3	HAZARDS IDENTIFICATION
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EMERGENCY OVERVIEW

Appearance & Odor: Fluorescent green liquid. Mild odor.

Health Hazards: May be harmful or fatal if swallowed. May cause acidosis, cardiopulmonary and kidney effects. May cause CNS depression.

NFPA Rating (Health, Fire, Reactivity): 2, 1, 0

Hazard Rating: Least - 0 Slight - 1 Moderate - 2 High - 3 Extreme - 4

Inhalation:

In applications where vapors (caused by high temperature) or mists (caused by mixing or spraying) are created, breathing may cause a mild burning sensation in the nose, throat and lungs.

Eye Irritation:

If irritation occurs, a temporary burning sensation, minor redness, swelling, and/or blurred vision may result.

Skin Contact:

May cause slight irritation of the skin. If irritation occurs, a temporary burning sensation and minor redness and/or swelling may result. Other adverse effects not expected from brief skin contact.

Ingestion:

May be harmful or fatal if swallowed. Contains ethylene glycol and/or diethylene glycol which are toxic when swallowed. A lethal dose for an adult is 1 ml per kilogram or about 4 ounces (1/2 cup). Severe kidney damage can occur as a result of ingestion. Ingestion may result in nausea, vomiting and abdominal cramps. Metabolic acidosis and cardiopulmonary effects can occur following ingestion. May cause Central Nervous System (CNS) depression.

Other Health Effects:

Refer to Section 11, Toxicological Information, for specific information on the following effects:

Developmental Toxicity

Primary Target Organs:

The following organs and/or organ systems may be damaged by overexposure to this material and/or its components:

Cardiovascular System, Kidney, Liver, Lungs

Signs and Symptoms:

May cause cardiopulmonary effects including rapid respiration and heartbeat, cyanosis and in severe cases, pulmonary edema and pneumonia. Early to moderate CNS depression may be evidenced by giddiness, headache, dizziness and nausea. In extreme cases, unconsciousness and death may occur. Kidney damage may be indicated by changes in urine output or appearance, pain upon urination or in the lower back or general edema (swelling from fluid retention). Liver damage may be indicated by loss of appetite, jaundice (yellowish skin and eye color), fatigue and sometimes pain and swelling in the upper right abdomen.

Aggravated Medical Conditions:

Pre-existing eye, skin, respiratory, liver and kidney disorders and may be aggravated by exposure to this product.

For additional health information, refer to section 11.

FIRST AID MEASURES

SECTION 4

Inhalation:

Move victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.

Skin:

Flush exposed area with water and follow by washing with soap if available. If skin irritation persists after washing, get medical advice.

Eye:

Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If eye irritation persists, seek medical advice.

Ingestion:

DO NOT take internally. If swallowed, IMMEDIATELY contact a poison control center, emergency treatment center, or physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

IMMEDIATE TREATMENT IS EXTREMELY IMPORTANT! Ethylene Glycol (EG) and Diethylene Glycol (DEG) intoxication may initially produce behavioral changes, drowsiness, vomiting, diarrhea, thirst, and convulsions. EG and DEG are nephrotoxic. End stages of poisoning may include renal damage or failure with acidosis. Supportive measures, supplemented with hemodialysis if indicated, may limit the progression and severity of toxic effects. May cause cardiopulmonary effects. For ETHYLENE GLYCOL POISONING, intravenous ethanol is a recognized antidotal treatment; other antidotal treatments also exist for ethylene glycol poisoning.

FIRE FIGHTING MEASURES

SECTION 5

Flash Point [Method]: 260 °F/126.67 °C [Pensky-Martens Closed Cup]

Extinguishing Media:

Prevent run off from fire control or dilution from entering streams, sewers or drinking water supply. Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO2) to extinguish flames. Do not use a direct stream of water.

Fire Fighting Instructions:

Do not enter confined fire space without full bunker gear (helmet with face shield, bunker coats, gloves and rubber boots), including a positive pressure, NIOSH approved, self-contained breathing apparatus.

ACCIDENTAL RELEASE MEASURES

SECTION 6

Protective Measures:

May burn although not readily ignitable.

Wear appropriate personal protective equipment when cleaning up spills. Refer to Section 8.

Spill Management:

Shut off source of leak if safe to do so. Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

Reporting:

U.S. regulations require reporting releases of this material to the environment which exceed the reportable quantity to the National Response Center at (800)424-8802.

HANDLING AND STORAGE

SECTION 7

Precautionary Measures:

Do not ingest. Avoid prolonged or repeated contact with eyes, skin or clothing. Avoid breathing of vapors, fumes or mists. Use with adequate ventilation. Wash thoroughly after handling.

Storage:

Do not store in open or unlabeled containers. Store in a cool, dry place with adequate ventilation. Keep away from open flames and high temperatures.

Container Warnings:

Keep containers closed when not in use. Containers, even those that have been emptied, can contain explosive vapors. Do not cut, drill, grind, weld or perform similar operations on or near containers.

EXPOSURE CONTROLS/PERSONAL PROTECTION
SECTION 8

Chemical	Limit	TWA	STEL	Ceiling	Notation
Ethylene Glycol	ACGIH TLV			100 mg/m3	
Ethylene Glycol	OSHA PEL - 1989(revoked)			50 ppmv	
Phosphoric acid	ACGIH TLV	1 mg/m3			
Phosphoric acid	OSHA PEL - 1989(revoked)	1 mg/m3	3 mg/m3		

Exposure Controls

Provide adequate ventilation to control airborne concentrations below the exposure guidelines/limits. Eye washes and showers for emergency use.

Personal Protection

Personal protective equipment (PPE) selections vary based on potential exposure conditions such as handling practices, concentration and ventilation. Information on the selection of eye, skin and respiratory protection for use with this material is provided below.

Eye Protection:

Chemical Goggles - If liquid contact is likely., or Safety glasses with side shields

Skin Protection:

Use protective clothing which is chemically resistant to this material. Selection of protective clothing depends on potential exposure conditions and may include gloves, boots, suits and other items. The selection(s) should take into account such factors as job task, type of exposure and durability requirements.

Published literature, test data and/or glove and clothing manufacturers indicate the best protection is provided by:

Neoprene, or Nitrile Rubber

Respiratory Protection:

If engineering controls do not maintain airborne concentrations to a level which is adequate to protect worker health, an

approved respirator must be worn. Respirator selection, use and maintenance should be in accordance with the requirements of the OSHA Respiratory Protection Standard, 29 CFR 1910.134.

Types of respirator(s) to be considered in the selection process include:

For Mist: Air Purifying, R or P style NIOSH approved respirator.

For Vapors: Air Purifying, R or P style prefilter & organic cartridge, NIOSH approved respirator.

Self-contained breathing apparatus for use in environments with unknown concentrations or emergency situations.

PHYSICAL AND CHEMICAL PROPERTIES

SECTION 9

Appearance & Odor: Fluorescent green liquid. Mild odor.

Substance Chemical Family: Ethylene Glycols

Boiling Point	226 °F	Flash Point	260 °F [Pensky-Martens Closed Cup]
Freezing Point	-34 °F	Odor	Mild odor.
Specific Gravity	1.12 - 1.14	Stability	Stable

NOTE: The freezing and boiling point values reflect a 50% solution in water at atmospheric pressure.

REACTIVITY AND STABILITY

SECTION 10

Stability:

Material is stable under normal conditions.

Hazardous Decomposition Products:

Thermal decomposition products are highly dependent on combustion conditions. A complex mixture of airborne solids, liquids and gases will evolve when this material undergoes pyrolysis or combustion. Acids, Aldehydes, Carbon Monoxide, Carbon Dioxide, Ketones and other unidentified organic compounds may be formed upon combustion.

TOXICOLOGICAL INFORMATION

SECTION 11

Acute Toxicity

TEST	Result	OSHA Classification	Material Tested
Dermal LD50	> 2 g/kg(Rabbit)	Non-Toxic	Based on components(s)

Carcinogenicity Classification

Chemical Name	NTP	IARC	ACGIH	OSHA
Antifreeze/Coolant	No	Not Reviewed	No	No

Cardiovascular

Ingestion of large doses can cause metabolic acidosis that results in cardiopulmonary effects.

System	
Developmental Toxicity	Oral exposure of pregnant rats and mice to ethylene glycol has produced birth defects in the offspring.
Kidney	Ingestion of ethylene glycol can cause bladder stones and kidney damage which can be fatal.
Liver	Prolonged and repeated ingestion of ethylene glycol has produced liver damage in rats.
Lungs	Ingestion of large doses can cause metabolic acidosis that results in cardiopulmonary effects.
Whole Animal	Orally, humans are more sensitive to ethylene glycol than rodents. The reported lethal dose range for an adult human is 1 -2 ml/kg, or 1/4 to 1/2 cup. Ingestion can result in metabolic acidosis.

ECOLOGICAL INFORMATION
SECTION 12

Environmental Fate:

The toxicity of this material to aquatic organisms has not been fully evaluated. This material must not be discharged or allowed to come into contact with sewage and drainage systems and any surface water body.

DISPOSAL CONSIDERATIONS
SECTION 13

RCRA Information:

Under RCRA, it is the responsibility of the user of the material to determine, at the time of the disposal, whether the material meets RCRA criteria for hazardous waste. This is because material uses, transformations, mixtures, processes, etc. may affect the classification. Refer to the latest EPA, state and local regulations regarding proper disposal. Follow all applicable laws and regulations. Used antifreeze recycling is recommended. Do not drain on the ground or into storm drainage systems. Do not dispose in sanitary sewer systems except where permitted by law.

TRANSPORT INFORMATION
SECTION 14

US Department of Transportation Classification

This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less. If shipped in a container of over 119 gallon capacity then the DOT information must be accompanied with RQ notation, or, an otherwise 'Not Regulated' product will be classified as Environmentally Hazardous (solid/liquid) N.O.S., Class 9, Packing group III unless the product qualifies for the petroleum exemption (49 CFR 171.8).

Hazardous Substance/Material RQ: Ethylene glycol / 5209.3481 lbs

International Air Transport Association

Hazard Class/Division: 9 (Miscellaneous)

Identification Number: UN3082

Packing Group: III

Proper Shipping Name: Environmentally Hazardous Substance, Liquid, N.O.S.

Technical Name(s): Ethylene Glycol

International Maritime Organization Classification

Hazard Class/Division: 9 (Miscellaneous)

Identification Number: UN3082

Packing Group: III

Proper Shipping Name: Environmentally Hazardous Substances, Liquid, N.O.S.

Technical Name(s): Ethylene Glycol

REGULATORY INFORMATION
SECTION 15

Federal Regulatory Status

OSHA Classification:

Product is hazardous according to the OSHA Hazard Communication Standard, 29 CFR 1910.1200.

Comprehensive Environmental Release, Compensation & Liability Act (CERCLA):

Ethylene Glycol	RQ 5000 lbs	Reportable Spill => 5209.348071 lbs or 624.85 gal
Potassium hydroxide	RQ 1000 lbs	Reportable Spill => 139664.804469 lbs or 16752.41 gal

Ozone Depleting Substances (40 CFR 82 Clean Air Act):

This material does not contain nor was it directly manufactured with any Class I or Class II ozone depleting substances.

Superfund Amendment & Reauthorization Act (SARA) Title III:

There are no components in this product on the SARA 302 list.

SARA Hazard Categories (311/312):

Immediate Health	Delayed Health	Fire	Pressure	Reactivity
YES	YES	NO	NO	NO

SARA Toxic Release Inventory (TRI) (313):

Ethylene Glycol,

Toxic Substances Control Act (TSCA) Status:

All component(s) of this material is(are) listed on the EPA/TSCA Inventory of Chemical Substances.

Other Chemical Inventories:

Component(s) of this material is (are) listed on the Australian AICS, Canadian DSL, Chinese Inventory, European EINECS, Korean Inventory, Philippines PICCS,

State Regulation

The following chemicals are specifically listed by individual states; other product specific health and safety data in other sections of the MSDS may also be applicable for state requirements. For details on your regulatory requirements you should contact the appropriate agency in your state.

New Jersey Right-To-Know Chemical List:

Ethylene Glycol (0878)	90 - 98 %weight	Special Hazard
Phosphoric acid	1 - 3 %weight	Environmental Hazard

Pennsylvania Right-To-Know Chemical List:

1,2-Ethanediol (107-21-1)	90 - 98 %weight	Environmental Hazard
Phosphoric acid	1 - 3 %weight	Environmental Hazard

OTHER INFORMATION

SECTION 16

Revision#: 1
Revision Date: 11/16/2004
Revisions since last change (discussion): This Material Safety Data Sheet (MSDS) has been reviewed to fully comply with the guidance contained in the ANSI MSDS standard (ANSI Z400.1-1998). We encourage you to take the opportunity to read the MSDS and review the information contained therein.

LABEL INFORMATION

SECTION 17

READ AND UNDERSTAND MATERIAL SAFETY DATA SHEET BEFORE HANDLING OR DISPOSING OF PRODUCT. THIS LABEL COMPLIES WITH THE REQUIREMENTS OF THE OSHA HAZARD COMMUNICATION STANDARD (29 CFR 1910.1200) FOR USE IN THE WORKPLACE. THIS LABEL IS NOT INTENDED TO BE USED WITH PACKAGING INTENDED FOR SALE TO CONSUMERS AND MAY NOT CONFORM WITH THE REQUIREMENTS OF THE CONSUMER PRODUCT SAFETY ACT OR OTHER RELATED REGULATORY REQUIREMENTS.

PRODUCT CODE(S): 2744, 2748

PENNZOIL® Antifreeze and Summer Coolant

WARNING!

MAYBE HARMFUL OR FATAL IF SWALLOWED. MAY CAUSE ACIDOSIS, CARDIOPULMONARY AND KIDNEY EFFECTS. MAY CAUSE CENTRAL NERVOUS SYSTEM DEPRESSION. The following organs and/or organ systems may be damaged by overexposure to this material and/or its components.

MAY CAUSE DAMAGE TO: Cardiovascular System, Kidney, Liver, Lungs

**Refer to Section 11, Toxicological Information, for specific information on the following effects:
Developmental Toxicity**

Precautionary Measures:

Avoid prolonged or repeated contact with eyes, skin and clothing. Avoid breathing of vapors, fumes, or mist. Use only with adequate ventilation. Keep container closed when not in use. Wash thoroughly after handling.

FIRST AID

Inhalation: Move victim to fresh air and provide oxygen if breathing is difficult. Get medical attention.

Skin Contact: Flush exposed area with water and follow by washing with soap if available. If skin irritation persists after washing, get medical advice.

Eye Contact: Flush eyes with plenty of water while holding eyelids open. Rest eyes for 30 minutes. If eye irritation persists, seek medical advice.

Ingestion: DO NOT take internally. If swallowed, IMMEDIATELY contact a poison control center, emergency treatment center, or physician. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.

FIRE

In case of fire, Use water fog, 'alcohol foam', dry chemical or carbon dioxide (CO₂) to extinguish flames. Do not use a direct stream of water.

SPILL OR LEAK

Dike and contain spill.

FOR LARGE SPILLS: Remove with vacuum truck or pump to storage/salvage vessels.

FOR SMALL SPILLS: Soak up residue with an absorbent such as clay, sand or other suitable material. Place in non-leaking container and seal tightly for proper disposal.

CONTAINS: Ethylene Glycol, 107-21-1; Deionized Water, 7732-18-5; Phosphoric acid, 7664-38-2

NFPA Rating (Health, Fire, Reactivity): 2, 1, 0

TRANSPORTATION

US Department of Transportation Classification

This material is not regulated under 49 CFR if in a container of 119 gallon capacity or less. If shipped in a container of over 119 gallon capacity then the DOT information must be accompanied with RQ notation, or, an otherwise 'Not Regulated' product will be classified as Environmentally Hazardous (solid/liquid) N.O.S., Class 9, Packing group III unless the product qualifies for the petroleum exemption (49 CFR 171.8).

Hazardous Substance/Material RQ: Ethylene glycol / 5209.3481 lbs

CAUTION: Misuse of empty containers can be hazardous. Empty containers can be hazardous if used to store toxic, flammable, or reactive materials. Cutting or welding of empty containers might cause fire, explosion or toxic fumes from residues. Do not pressurize or expose to open flames or heat. Keep container closed and drum bungs in place.

Name and Address

SOPUS Products
P.O. Box 4427
Houston, TX 77210-4427

ADMINISTRATIVE INFORMATION
MANUFACTURER ADDRESS: SOPUS Products, P.O. Box 4427, Houston, TX. 77210-4427
Company Product Stewardship & Regulatory Compliance Contact: Timothy W Childs
Phone Number: (713) 241-1524

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