

USED ANTIFREEZE
MATERIAL SAFETY INFORMATION SHEET FOR USA AND
CANADA



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: USED ANTIFREEZE

SYNONYMS: 1,2-Ethanediol; 1,2-Ethylene glycol; 2-Hydroxyethanol; Ethylene alcohol

PRODUCT CODE: Prefix 95P

PRODUCT USE: Used automotive coolant.
If this product is used in combination with other products, refer to the Material Safety Data Sheet for those products.

These numbers are for emergency use only. If you desire non-emergency product information, please call a phone number listed below.

**24-HOUR EMERGENCY PHONE NUMBERS
MEDICAL AND TRANSPORTATION (SPILL):**

1-800-468-1760

SUPPLIER: Safety-Kleen
2600 North Central Expressway
Suite 400
Richardson, Texas 75080
USA
1-800-669-5740

TECHNICAL INFORMATION: 1-800-669-5740 Press 1 then Enter 7500

MSDS FORM NUMBER: 82912

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SUPERSEDES: March 14, 2011

PREPARED BY: Product MSDS Coordinator

APPROVED BY: MSDS Task Force

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SECTION 2: COMPOSITION/INFORMATION ON INGREDIENTS

WT%	NAME	SYNONYM	CAS NO.	OSHA PEL**		ACGIH TLV®		LD ^a	LC ^b
				TWA	STEL	TWA	STEL		
30-87	Water	N.Av.	7732-18-5	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.	N.Av.
2-68	Ethylene glycol	1,2-Ethanediol; 1,2-Dihydroxyethane	107-21-1	N.Av.	N.Av.	100 (Ceiling value)	N.Av.	4000 mg/kg (9530 uL/kg) ^c	N.Av.
4-44	1,2-Propylene glycol	N.Av.	57-55-6	N.Av. ^d	N.Av.	N.Av.	N.Av.	20 gm/kg (20800 mg/kg) ^c	N.Av.
1-2	Diethylene glycol	2,2'-oxybis-ethanol	111-46-6	N.Av. ^e	N.Av.	N.Av.	N.Av.	12565 mg/kg (11890 mg/kg) ^c	N.Av.

**OSHA Final PEL value (enforceable). Some States have adopted more stringent values.

N.Av. = Not Available

^aOral-Rat LD₅₀

^bInhalation-Rat LC₅₀

^cSkin-Rabbit LD₅₀

^dAIHA recommended TWA 50 ppm

^eAIHA recommended TWA 10mg/m³

SECTION 3: HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

APPEARANCE

Liquid, green, sweet odor. Syrupy.

DANGER!

HEALTH HAZARDS

May be harmful if inhaled.

Harmful or fatal if swallowed.

May irritate the respiratory tract (nose, throat, and lungs), eyes, and skin.

Contains material which may cause lung, kidney, liver, central nervous system, and eye damage.

POTENTIAL HEALTH EFFECTS

INHALATION (BREATHING):

This product is not likely to present an inhalation hazard at normal temperatures and pressures. However, when aerosolizing, misting, or heating this product, high concentrations of generated vapor or mist may irritate the respiratory tract (nose, throat, and lungs). High concentrations of vapor or mist may be harmful if inhaled. High concentrations of vapor or mist may cause liver, lung, and kidney damage. High concentrations of vapor or mist may cause nausea, vomiting, headaches, dizziness, loss of coordination, numbness, and other central nervous system effects. Massive acute overexposure may cause rapid central nervous system depression, sudden collapse, coma, and/or death.

EYES:

May cause irritation. May cause inflammation of the iris, ciliary body, and the membrane lining the eyelids and covering the eyeball (conjunctivitis). May cause corneal damage.

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SKIN:	May cause irritation. Not likely to be absorbed through the skin in harmful amounts.
INGESTION (SWALLOWING):	May be fatal if swallowed. The estimated lethal dose is 100 ml (3.4 ounces). May damage lung, liver, and kidneys. May cause throat irritation, nausea, vomiting, central nervous system effects as noted under INHALATION (BREATHING) , unconsciousness, coma, and death. Breathing product into the lungs during ingestion or vomiting may cause lung injury and possible death.
MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:	Individuals with pre-existing liver, kidney, respiratory tract (nose, throat, and lungs), central nervous system, eye, and/or skin disorders may have increased susceptibility to the effects of exposure.
CHRONIC:	Prolonged or repeated inhalation may cause toxic effects as noted under INHALATION (BREATHING) . Prolonged or repeated eye contact may cause blindness. Prolonged or repeated skin contact may cause drying, cracking, redness, itching, and/or swelling (dermatitis). Prolonged or repeated exposure may have reproductive toxicity, teratogenic, or mutagenic effects.
CANCER INFORMATION:	No known carcinogenicity. For more information, see SECTION 11: CARCINOGENICITY .

POTENTIAL ENVIRONMENTAL EFFECTS

Not available. Also see **SECTION 12: ECOLOGICAL INFORMATION**.

SECTION 4: FIRST AID MEASURES

INHALATION (BREATHING):	Remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Oxygen should only be administered by qualified personnel. Someone should stay with victim. Get medical attention if breathing difficulty persists.
EYES:	If irritation or redness from exposure to vapor develops, move away from exposure into fresh air. Upon contact, immediately flush eyes with plenty of lukewarm water, holding eyelids apart, for 15 minutes. Get medical attention.
SKIN:	Remove affected clothing and shoes. Wash skin thoroughly with soap and water. Get medical attention if irritation or pain develops or persists.
INGESTION (SWALLOWING):	Do NOT induce vomiting. Immediately get medical attention. Call 1-800-468-1760 for additional information. If spontaneous vomiting occurs, keep head below hips to avoid breathing the product into the lungs. Never give anything to an unconscious person by mouth.

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NOTE TO PHYSICIANS:

Treat symptomatically and supportively. Administration of gastric lavage, if warranted, should be performed by qualified medical personnel.

Treatment may vary with condition of victim and specifics of incident. Call 1-800-468-1760 for additional information.

Ethylene glycol is metabolized by alcohol dehydrogenase to various metabolites including glycoaldehyde, glycolic acid, and oxalic acid. The signs and symptoms in ethylene glycol poisoning are those of metabolic acidosis, central nervous system depression, and kidney damage. The currently recommended medical management of ethylene glycol poisoning includes elimination of ethylene glycol and metabolites, correction of metabolic acidosis, and prevention of kidney injury. As a competitive substrate for alcohol dehydrogenase, ethanol is antidotal when given in the early stages of intoxication because it blocks the formation of nephrotoxic metabolites. A more effective intravenous antidote is 4-methylpyrazole, a potent inhibitor of alcohol dehydrogenase, which effectively blocks the formation of toxic metabolites. Pulmonary edema with hypoxia has been described in a number of patients following ethylene glycol poisoning. Respiratory support with mechanical ventilation and positive end expiratory pressure may be required. There may be cranial nerve involvement in the later stages of toxicity from swallowing ethylene glycol. Effects have been reported presenting bilateral facial paralysis, diminished hearing, and dysphagia.

SECTION 5: FIRE FIGHTING MEASURES

FLASH POINT: >200°F (>93.3°C)

FLAMMABLE LIMITS IN AIR:	LOWER: 3.2 VOL% (ethylene glycol)	UPPER: 15.3 VOL% (ethylene glycol)
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AUTOIGNITION TEMPERATURE: 748°F (398°C) (ethylene glycol)

HAZARDOUS COMBUSTION PRODUCTS: Decomposition and combustion materials may be toxic. Burning may produce carbon monoxide and unidentified organic compounds.

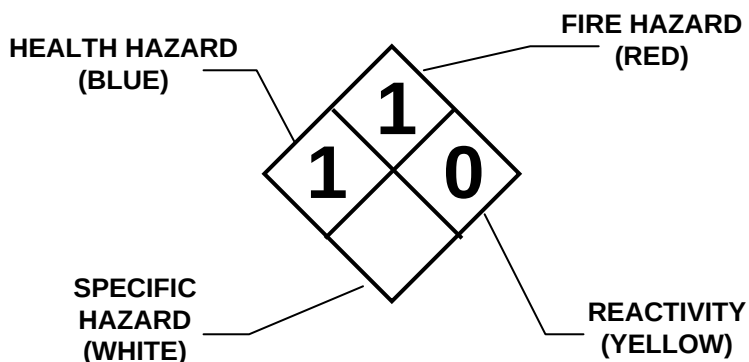
CONDITIONS OF FLAMMABILITY: Heat, sparks, or flame. Products may burn, but do not ignite readily.

EXTINGUISHING MEDIA: Carbon dioxide, alcohol-resistant foam, dry chemical, water spray, or water fog. Water or foam may cause frothing.

NFPA 704 HAZARD IDENTIFICATION: This information is intended solely for the use by individuals trained in this system.

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FIRE FIGHTING INSTRUCTIONS:

Keep storage containers cool with water spray. A positive-pressure, self-contained breathing apparatus (SCBA) and full-body protective equipment are required for fire emergencies.

FIRE AND EXPLOSION HAZARDS:

Vapors will spread along the ground and collect in low or confined areas. Heated containers may rupture or be thrown into the air. "Empty" containers may retain residue and can be dangerous. Product is not sensitive to mechanical impact or static discharge.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Remove all ignition sources. Do not touch or walk through spilled product. Stop leak if you can do it without risk. Wear protective equipment and provide engineering controls as specified in **SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION**. Isolate hazard area. Keep unnecessary and unprotected personnel from entering. Ventilate area and avoid breathing vapor or mist. A vapor suppressing foam may be used to reduce vapors. Contain spill away from surface water and sewers. Contain spill as a liquid for possible recovery, or sorb with compatible sorbent material and shovel with a clean tool into a sealable container for disposal. Additionally, for large spills: Water spray may reduce vapor, but may not prevent ignition in closed spaces. Dike far ahead of liquid spill for collection and later disposal.

SECTION 7: HANDLING AND STORAGE

HANDLING:

Keep away from heat, sparks, or flame. Where flammable mixtures may be present, equipment safe for such locations should be used. Use clean tools and explosion-proof equipment. When transferring large volumes of product, metal containers, including trucks and tank cars, should be grounded and bonded. Do not breathe vapor or mist. Use in a well ventilated area. Avoid contact with eyes, skin, clothing, and shoes.

SHIPPING AND STORING:

Keep container tightly closed when not in use and during transport. Do not pressurize, cut, weld, braze, solder, drill, or grind containers. Keep containers away from heat, flame, sparks, static electricity, or other sources or ignition. Empty product containers may retain product residue and can be dangerous. See **SECTION 14: TRANSPORTATION INFORMATION** for Packing Group information.

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SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS: Provide general ventilation needed to maintain concentration of vapor or mist below applicable exposure limits. Where adequate general ventilation is unavailable, use process enclosures, local exhaust ventilation, or other engineering controls to control airborne levels below applicable exposure limits.

PERSONAL PROTECTIVE EQUIPMENT

RESPIRATORY PROTECTION: Use NIOSH-certified, full-face, air-purifying respirators with P- or R- series particulate filter and organic vapor cartridges when concentration of vapor or mist exceeds applicable exposure limits. Selection and use of respiratory protective equipment should be in accordance in the USA with OSHA General Industry Standard 29 CFR 1920.134; or in Canada with CSA Standard Z94.4.

EYE PROTECTION: Where eye contact is likely, wear chemical goggles; contact lens use is not recommended.

SKIN PROTECTION: Where skin contact is likely, wear Polyvinyl Chloride (PVC), neoprene, butyl rubber, nitrile, or equivalent protective gloves; use of polyvinyl alcohol (PVA) or equivalent gloves is not recommended. To avoid prolonged or repeated contact where spills and splashes are likely, wear appropriate chemical-resistant faceshield, boots, apron, whole body suits, or other protective clothing.

PERSONAL HYGIENE: Use good personal hygiene. Wash thoroughly with soap and water after handling product and before eating, drinking, or using tobacco products. Clean affected clothing, shoes, and protective equipment before reuse. Discard affected clothing, shoes, and/or protective equipment if they cannot be thoroughly cleaned. Discard leather articles, such as shoes, saturated with this product.

OTHER PROTECTIVE EQUIPMENT: Where spills and splashes are likely, facilities storing or using this product should be equipped with an emergency eyewash and shower, both equipped with clean water, in the immediate work area.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE, APPEARANCE, AND ODOR: Liquid, green, sweet odor. Syrupy.
ODOR THRESHOLD: Not available.

MOLECULAR WEIGHT: 106
SPECIFIC GRAVITY: >1 (water = 1)

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DENSITY:	Not available.
VAPOR DENSITY:	>1 (air = 1)
VAPOR PRESSURE:	<0.1 mmHg at 68°F (20°C)
BOILING POINT:	>300°F (148.9°C)
FREEZING/MELTING POINT:	Not available.
pH:	6-10
EVAPORATION RATE:	Not available.
SOLUBILITY IN WATER:	Complete
FLASH POINT:	>200°F (>93.3°C)
FLAMMABLE LIMITS IN AIR:	LOWER: 3.2 VOL% (ethylene glycol) UPPER: 15.3 VOL% (ethylene glycol)
AUTOIGNITION TEMPERATURE:	748°F (398°C) (ethylene glycol)

SECTION 10: STABILITY AND REACTIVITY

STABILITY:	Stable under normal temperatures and pressures. Avoid heat, sparks, or flame.
INCOMPATIBILITY:	Avoid acids, alkalies, oxidizing agents, or reactive metals.
REACTIVITY:	Polymerization is not known to occur under normal temperature and pressures. Not reactive with water.
HAZARDOUS DECOMPOSITION PRODUCTS:	None under normal temperatures and pressures. See also SECTION 5: HAZARDOUS COMBUSTION PRODUCTS.

SECTION 11: TOXICOLOGICAL INFORMATION
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SENSITIZATION:	Ethylene glycol has demonstrated human effects of skin sensitization. Based on best current information, the other components listed in SECTION 2 are not sensitizers.
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MUTAGENICITY:	Ethylene glycol and diethylene glycol have demonstrated human effects of mutagenicity.
CARCINOGENICITY:	Based on best current information, there is no known carcinogenicity as categorized by ACGIH A1 or A2 substances; as categorized by IARC Group 1, Group 2A, or Group 2B agents; or as listed by NTP as either known carcinogens or substances for which there is limited evidence of carcinogenicity in humans or sufficient evidence of carcinogenicity in experimental animals.
REPRODUCTIVE TOXICITY:	Ethylene glycol and diethylene glycol have demonstrated animal effects of reproductive toxicity.
TERATOGENICITY:	Ethylene glycol and diethylene glycol have demonstrated animal effects of teratogenicity.
TOXICOLOGICALLY SYNERGISTIC PRODUCT(S):	Based on best current information, there are no known toxicologically synergistic products associated with this product.

SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICITY:	Ethylene glycol (107-21-1)	
	Test & Species	Conditions
	96 Hr LC50 rainbow trout	41000 mg/L
	96 Hr LC50 bluegill	27500 mg/L static
	96 Hr LC50 fathead minnow	40000 mg/L static
	1,2-Propylene glycol (57-55-6)	
	96 Hr LC50 rainbow trout	51600 mg/L static
	96 Hr LC50 fathead minnow	51400 mg/L static
	Diethylene glycol (111-46-6)	
	96 Hr LC50 fathead minnow	75200 mg/L flow-through
OCTANOL/WATER PARTITION COEFFICIENT:	Not available.	
VOLATILE ORGANIC COMPOUNDS:	Not available.	

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SECTION 13: DISPOSAL CONSIDERATIONS

DISPOSAL: Dispose in accordance with federal, state, provincial, and local regulations. Regulations may also apply to empty containers. The responsibility for proper waste disposal lies with the owner of the waste. Contact Safety-Kleen regarding proper recycling or disposal.

USEPA WASTE CODES(S): This product, if discarded, is not expected to be a characteristic or listed hazardous waste. Processing, use, or contamination by the user may change the waste code(s) applicable to the disposal of this product.

SECTION 14: TRANSPORT INFORMATION

DOT: **Shipping Name:** Not regulated as a hazardous material for transportation.
Additional Information: Bulk Shipments containing ≥ 5000 lbs (~540 gallons) of ethylene glycol:
UN3082, Environmentally hazardous substance, liquid, n.o.s. (Ethylene glycol), RQ, 9, PGIII

TDG: **Shipping Name:** Not regulated as a dangerous good for transportation.

EMERGENCY RESPONSE GUIDE NUMBER: Not applicable.
Reference *North American Emergency Response Guidebook*

SECTION 15: REGULATORY INFORMATION

USA REGULATIONS

SARA SECTIONS 302 AND 304: Based on the ingredient(s) listed in **SECTION 2**, this product does not contain any "extremely hazardous substances" listed pursuant to Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) Section 302 or Section 304 as identified in 40 CFR Part 355, Appendix A and B.

SARA SECTIONS 311 AND 312: This product poses the following health hazard(s) as defined in 40 CFR Part 370 and is subject to the requirements of sections 311 and 312 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA):
Immediate (Acute) Health Hazard
Delayed (Chronic) Health Hazard

SARA SECTION 313: The following component is subject to the requirements of section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 (SARA) and 40 CFR Part 372.

Ethylene glycol (107-21-1) 1.0 percent de minimis concentration

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CERCLA: Based on the ingredient(s) listed in SECTION 2, this product contains the following "hazardous substance(s)" listed under the Comprehensive Environmental Response, Compensation and Liability Act of 1980 (CERCLA) in 40 CFR Part 302, Table 302.4 with the following reportable quantities (RQ):
Ethylene glycol (107-21-1) 5000 lb final RQ; 2270 kg final RQ

TSCA: All the components of this product are listed on, or are automatically included as "naturally occurring chemical substances" on, or are exempted from the requirement to be listed on, the TSCA Inventory.

CALIFORNIA: This product does not contain detectable amounts of any chemical known to the State of California to cause cancer.

This product does not contain detectable amounts of any chemical known to the State of California to cause birth defects or other reproductive harm.

CANADIAN REGULATIONS

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

WHMIS: Class D2A - Contains component that may cause cancer.
Class D2B - Irritating to eyes and skin.

CANADIAN ENVIRONMENTAL PROTECTION ACT (CEPA): All the components of this product are listed on, or are automatically included as "substance occurring in nature" on, or are exempted from the requirements to be listed on, the Canadian Domestic Substances List (DSL).

SECTION 16. OTHER INFORMATION

REVISION INFORMATION: Regulatory Update. Revisions to Section 1 (Product and Company Identification)

LABEL/OTHER INFORMATION: Not available.

User assumes all risks incident to the use of this(these) product(s). To the best of our knowledge, the information contained herein is accurate. However, Safety-Kleen assumes no liability whatsoever for the accuracy or completeness of the information contained herein. No representations or warranties, either express or implied, of merchantability, fitness for a particular purpose or of any other nature are made hereunder with respect to information or the product to which information refers. The data contained on this sheet apply to the product(s) as supplied to the user.