DK **DeMenno Kerdoon**

MATERIAL SAFETY DATA SHEET – MSDS

Revision No.:2 Revision Date: 10/13/03
Original Issue Date: 11/12/97 Last Review Date: 10/23/00

TRINITY N245P PREDILUTED HEAVY DUTY ANTIFREEZE (50%)

MSDA No. 101303.2
Date 08/18/03

WARNING! May cause irritation. Contains ethylene glycol. Harmful or fatal if swallowed. May cause damage to brain, kidney, or liver. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling. For industrial use only: not for household use.

Emergency Number: Chemtrec: 800-424-9300
General Information: DeMenno Kerdoon 310-537-7100

SECTION I – IDENTIFICATION

Product: Trinity Fully Formulated Prediluted Heavy Duty Coolant N245P

Synonyms: DK N245P Prediluted Heavy Duty Antifreeze Formulation

Chemical Family: Ethylene Glycol solutions of salts

CAS RN: Mixture – no single CAS number applicable

SECTION II – INGREDIENTS

Components	CAS RN	Nominal%	PEL/TLV	Hazard
Ethylene Glycol	107-21-1	40-55%	Ceiling 50 ppm (125 mg/m) [vapor mist]	Respiratory irritant Ingestion may produce liver, brain and kidney damage.
Diethylene Glycol	111-46-4	Less than 5%	None	Ingestion may produce liver and kidney damage
Hydrated inorganic	proprietary	Less than 5%	PEL-TWA 5 mg/m TLV-TWA: 5mg/m	Skin, eye and respiratory irritant. GI tract salts and inflammation.
Water	7732-18-5	Less than 50%	None	None noted

SECTION III – HEALTH INFORMATION

Inhalation: Breathing excessive levels of the vapor or mist can irritate the respiratory tract. Excessive vapor concentrations of the major component (ethylene glycol), as might be generated during heating of this material, have occasionally been reported to cause adverse effects on the blood-forming system and the nervous system.

Ingestion: The acute oral toxicities of the components of this mixture are as follows:

Ethylene Glycol: The lowest dose reported to produce death in humans was estimated to be 710 mg/kg body weight; for a person weighing 150 pounds, this would be equivalent to drinking about one and one half (1.5) fluid ounces of pure ethylene glycol in a short period of time.

Acute oral LD50's	=	4,700 mg/kg (rats) 7,500 mg/kg (mice) 2,000 mg/kg (cats)

Hydrated Inorganic Acid, Sodium Salt: The lowest dose of a similar compound reported to produce death in humans was estimated to be 709 mg/kg body weight; for a person weighing 150 pounds, this would be equivalent to swallowing about one-tenth (.1) of a pound of the dry material in a short period of time.

Acute oral LD50's For a similar compound	=	2,660 mg/kg (rats) 2,000 mg/kg (mice)

Diethylene Glycol:

Acute oral LD50's	=	1,000 mg/kg (humans) 14,800 mg/kg (rats) 9,000 mg/kg (dogs)

Eye Contact: Based on the pH and irritation potential of this mixture's constituents, the mist or liquid can be expected to cause mild to moderate irritation or inflammation of the eyes.

Skin Contact: The acute dermal LD50 of the major component (ethylene glycol) of this product is 11.89 mg/kg (rabbits). Based on the pH and the irritation potential of this mixture's constituents, the mist or liquid can be expected to cause mild to moderate irritation of the skin.

SECTION IV – OCCUPATIONAL EXPOSURE LIMITS

PEL (OSHA Permissible Exposure Limit): None established for mixture, See Section II

TLV (ACGIH Threshold Limit Value): None established for mixture, See Section II

SECTION V – EMERGENCY FIRST AID PROCEDURE

For Overdose Exposure By:

Swallowing: If victim is conscious and able to swallow, quickly have victim drink water or milk to dilute. **DO NOT** give sodium bicarbonate, fruit juices or vinegar. **NEVER** give anything by mouth if victim is unconscious or having convulsions. Induce vomiting only if advised by physician or Poison Control Center. **CALL PHYSICIAN OR POISON CONTROL CENTER IMMEDIATELY.**

Skin Contact: Immediately flush skin with plenty of water while removing contaminated clothing.

Eye Contact: Immediately flush eyes with plenty of cool water for at least fifteen (15) minutes. **DO NOT** permit victim to rub eyes. **GET MEDICAL ATTENTION IMMEDIATELY.**

Inhalation: Immediately remove victim to fresh air. If victim has stopped breathing, give artificial respiration, preferable mouth to mouth. **GET MEDICAL ATTENTION IMMEDIATELY.**

SECTION VI – PHYSICAL DATA

Boiling Point:	226^{o}F
Melting Point:	Not Determined
Vapor Pressure:	Not Determined
Specific Gravity:	(60/60 F): 1.088
Vapor Density:	(AIR=1): Not Determined
pH (30% water solution):	7.9
Solubility in Water:	Infinitely miscible
Appearance and Color:	Clear, slightly viscous, green colored liquid

SECTION VII – FIRE AND EXPLOSIVE HAZARDS

Flash Point:	>40% water; none
Auto-Ignition Temp:	Not Determined (750^{o}F for ethylene glycol)
Flammable Limits in Air, % by Vol:	Lower: Not Determined (3.2% for ethylene glycol)
	Upper: Not Determined (15.3% for ethylene glycol)

NEPA Rating: Health (1) Fire (1) Reactivity (0) NEPA Rating (Does not apply to exposure hazards other than during a fire). Major component (ethylene glycol) has ratings of Health (1), Fire (1), and Reactivity (0).

Fire Fighting Procedures: (Note: Individuals should perform only those firefighting procedures for which they have been trained). Use water spray, dry chemical, foam or carbon dioxide. Use water to keep fire exposure containers cool. If a spill or leak has not ignited, use water spray to disperse the vapors. Water spray may be used to flush spills away from fire and dilute spills to noncombustible proportions (see warnings on water spray on hot glycol below).

Unusual Fire & Explosion Hazards: Fire fighters should wear self-contained breathing apparatus in the positive pressure mode with a full-face piece when there is possibility of exposure to smoke, fumes or hazardous decomposition products. Water spray may cause foaming of hot glycol so indirect application of water spray or use of other extinguishing media should be used on hot glycol.

SECTION VIII – REACTIVITY

Stability:	Generally stable
Hazardous Polymerization:	Not likely to occur
Conditions and Materials to Avoid:	Avoid concentrated strong acids, oxidizing agents and bases. Do not expose to open flame.
Hazardous Decomposition Products:	If pyrolyzed, thermal decomposition products of residue may include C, CO, CO_2, H_2O, NH_3, organic vapors and nitrogen containing.

SECTION IX – EMPLOYEE PROTECTION

Control Measures: Handle in the presence of adequate ventilation. Engineering controls should be used whenever feasible to maintain concentrations below acceptable exposure criteria (see Section II and IV), including enclosures and local exhaust ventilation.

Respiratory Protection: Where exposure is likely to exceed acceptable criteria (see Section II and IV) and engineering controls are not feasible, use NOSH/MISHA approved respiratory protection equipment. Respirators should be selected based on the form and concentration of contaminants in air and in accordance with OSHA (29 CFR 1910-134).

Protective Clothing: Wear gloves and protective clothing which are impervious to the product for the duration of exposure if there is potential for skin contact.

Eye Protection: Wear safety glasses meeting the specifications of ANSI Standard Z87.1 where no contact with the eye is anticipated. Chemical safety goggles meeting the specification of ANSI Standard Z87.1 should be worn whenever there is the possibility of splashing or other contact with the eyes.

SECTION X – ENVIRONMENTAL PROTECTION

Environmental Protections: Avoid uncontrolled releases of this material. Where spills are possible, a comprehensive spill release response plan should be developed and implemented.

Spill or Leak Procedures: Wear appropriate respiratory equipment and protective equipment as described in Section IX. Contain spilled material. Transfer to secure containers. Where

necessary, collect using absorbent media. In the event of an uncontrolled release it may be reportable under the applicable laws and regulations.
Water Disposal: All recovered material should be packaged, labeled, transported, and disposed of or reclaimed in conformance with good engineering practices. Avoid land filling of liquids. Reclaim where possible.

SECTION XI – REGULATORY CONTROLS

Department of Transportation:

DOT Classification:	Class 9 miscellaneous
DOT Proper Shipping Name:	Other regulated substances, liquid, n.o.s. (ethylene glycol), Class 9, UN 3082, PG III, RQ (ethylene glycol)

Other Regulatory Requirements:

Toxic Substance Control Act: This product is listed in the TSCA Inventory of Chemical Substances. All of the components of the mixture are listed in the TSCA Inventory of Chemical Substances.

SARA Hazardous Categories (as defined in Section 3111-313): Immediate, Acute Health Hazard: Delayed/Chronic Health Hazard.

The product contains greater than 85% ethylene glycol (CAS #107-21-1), which is subject to the reporting requirements of Section 313 of Title III of the Superfund Amendments and Reauthorization Act of 1986 and 40 CFR part 372.

Clean Air Act (1990) – List Hazardous Air Contaminants: Listed

CERCLA: Reportable Quantity (RQ): 5,000 pounds

State Right-to-know:

California – Exposure limits-Ceilings: Vapor-50 ppm Ceiling: 125 mg/m^3 ceiling

California Proposition 65 (Safe Drinking Water and Toxic Enforcement Act of 1986): This product chemical(s) known to the State of California to cause birth defects and or other reproductive harm.

Component	CAS#	Amount
Ethylene glycol monomethyl ether	109-86-4	<=.0009%

California SCAQMD Rule 443.1 Labeling of materials containing organic solvents

VOC: Vapor pressure 0.06 mmHG at 20 degrees C

SECTION XII – PRECAUTIONS: HANDLING, STORAGE AND USAGE

- To prevent possible storage container rupture, do not permit to freeze; See Section VI.
- Do not expose children and pets to this material.
- Keep container closed.
- Keep away from open flames.
- After handling product, wash thoroughly with soap and water before drinking, eating or smoking.
- Container hazardous when emptied. Since emptied container retains product residue, all hazardous precautions described on this MSDS must be observed.

SECTION XIII – CONTACT INFORMATION

The information presented herein is believed to be factual as it has been derived from the works and opinions of people believed to be qualified experts; however, nothing contained in this information is to be taken as a warranty or representation for which DeMenno Kerdoon Corporation bears legal responsibility. The user should review any recommendations in the specific context of intended use to determine whether they are appropriate.

Prepared by DeMenno Kerdoon Corporation

For further information contact:
Environmental Manager
DeMenno Kerdoon Corporation
2100 North Alameda Street
Compton, CA. 90222
310-537-7100