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MSDS

**Common Name:** ZEREX ORIGINAL RTU ANTIFREEZE COOLANT**Manufacturer:** ASHLAND CHEMICAL**MSDS Revision Date:** 7/10/2008**Grainger Item Number(s):** 2MWE7, 2WCF8**Manufacturer Model Number(s):**

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ASHLAND (R\*)

SAFETY DATA SHEET

REVISION DATE: 07/10/2008

PRINT DATE: 7/10/2008

MSDS NUMBER: R0321158

VERSION: 1.6

ZEREX (R\*) ORIGINAL RTU ANTIFREEZE COOLANT

ZNRU2

### 1. IDENTIFICATION OF THE SUBSTANCE/PREPARATION

AND OF THE COMPANY/UNDERTAKING



ASHLAND  
P.O. BOX 2219  
COLUMBUS, OH 43216

REGULATORY INFORMATION NUMBER: 1-800-325-3751

TELEPHONE: 614-790-3333

EMERGENCY TELEPHONE: 1-800-ASHLAND (1-800-274-5263)  
PRODUCT NAME: ZEREX(R\*) ORIGINAL RTU ANTIFREEZE COOLANT

PRODUCT CODE: ZXRU2

PRODUCT USE DESCRIPTION: NO DATA

## 2. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:

APPEARANCE: LIQUID, GREEN

CAUTION!

MAY AFFECT THE CENTRAL NERVOUS SYSTEM CAUSING DIZZINESS, HEADACHE OR NAUSEA. MAY BE HARMFUL IF SWALLOWED. MAY BE HARMFUL IF SWALLOWED OR ABSORBED THROUGH SKIN. MAY CAUSE EYE IRRITATION.

POTENTIAL HEALTH EFFECTS:

ROUTES OF EXPOSURE:

SKIN ABSORPTION, SKIN CONTACT, EYE CONTACT, INHALATION, INGESTION

EYE CONTACT:

CAN CAUSE EYE IRRITATION. SYMPTOMS INCLUDE STINGING, TEARING, REDNESS, AND SWELLING OF EYES.

SKIN CONTACT:

MAY CAUSE MILD SKIN IRRITATION. SYMPTOMS MAY INCLUDE REDNESS AND BURNING OF SKIN. ALTHOUGH RARE, SKIN CONTACT WITH ETHYLENE GLYCOL MAY CAUSE ALLERGIC SKIN REACTION (DELAYED SKIN RASH WHICH MAY BE FOLLOWED BY BLISTERING, SCALING AND OTHER SKIN EFFECTS). PASSAGE OF THIS MATERIAL INTO THE BODY THROUGH THE SKIN IS POSSIBLE, AND MAY ADD TO TOXIC EFFECTS FROM BREATHING OR SWALLOWING.

INGESTION:

SWALLOWING SMALL AMOUNTS OF THIS MATERIAL DURING NORMAL HANDLING IS NOT LIKELY TO CAUSE HARMFUL EFFECTS. SWALLOWING LARGE AMOUNTS MAY BE HARMFUL. LIVER, KIDNEY AND BRAIN DAMAGE IN HUMANS HAS RESULTED FROM SWALLOWING LETHAL OR NEAR-LETHAL AMOUNTS OF ETHYLENE GLYCOL.

INHALATION:

BREATHING OF VAPOR OR FUME IS POSSIBLE. BREATHING SMALL AMOUNTS OF THIS MATERIAL DURING NORMAL HANDLING IS NOT LIKELY TO CAUSE HARMFUL EFFECTS. BREATHING LARGE AMOUNTS MAY BE HARMFUL. SYMPTOMS ARE NOT EXPECTED AT AIR CONCENTRATIONS BELOW THE RECOMMENDED EXPOSURE LIMITS, IF APPLICABLE (SEE SECTION 8.).

AGGRAVATED MEDICAL CONDITION:

PREEXISTING DISORDERS OF THE FOLLOWING ORGANS (OR ORGAN SYSTEMS) MAY BE AGGRAVATED BY EXPOSURE TO THIS MATERIAL:  
LUNG (FOR EXAMPLE, ASTHMA-LIKE CONDITIONS), LIVER, KIDNEY, EXPOSURE TO THIS MATERIAL MAY AGGRAVATE ANY PREEXISTING CONDITION SENSITIVE TO A DECREASE IN AVAILABLE OXYGEN, SUCH AS CHRONIC LUNG DISEASE, CORONARY ARTERY DISEASE OR ANEMIAS.

SYMPTOMS:

SIGNS AND SYMPTOMS OF EXPOSURE TO THIS MATERIAL THROUGH BREATHING, SWALLOWING, AND/OR PASSAGE OF THE MATERIAL THROUGH THE SKIN MAY INCLUDE: STOMACH OR INTESTINAL UPSET (NAUSEA, VOMITING, DIARRHEA), IRRITATION (NOSE, THROAT, AIRWAYS), COUGH, CENTRAL NERVOUS SYSTEM EXCITATION (GIDDINESS, LIVELINESS, LIGHT-HEADED FEELING) FOLLOWED BY CENTRAL NERVOUS SYSTEM DEPRESSION (DIZZINESS, DROWSINESS, WEARINESS, FATIGUE, NAUSEA, HEADACHE, UNCONSCIOUSNESS) AND OTHER CENTRAL NERVOUS SYSTEM EFFECTS, INVOLUNTARY EYE

MOVEMENT, CYANOSIS (CAUSES BLUE COLORING OF THE SKIN AND NAILS FROM LACK OF OXYGEN), LUNG EDEMA (FLUID BUILDUP IN THE LUNG TISSUE), ACUTE KIDNEY FAILURE (SUDDEN SLOWING OR STOPPING OF URINE PRODUCTION), LIVER DAMAGE, CONVULSIONS, COMA

**TARGET ORGANS:**

OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN LABORATORY ANIMALS: KIDNEY DAMAGE, LIVER DAMAGE, REPRODUCTIVE EFFECTS, OVEREXPOSURE TO THIS MATERIAL (OR ITS COMPONENTS) HAS BEEN SUGGESTED AS A CAUSE OF THE FOLLOWING EFFECTS IN HUMANS: KIDNEY DAMAGE, LIVER DAMAGE

**CARCINOGENICITY:**

BASED ON THE AVAILABLE INFORMATION, THIS MATERIAL CANNOT BE CLASSIFIED WITH REGARD TO CARCINOGENICITY.

**REPRODUCTIVE HAZARD:**

ETHYLENE GLYCOL HAS CAUSED BIRTH DEFECTS IN ANIMAL STUDIES AT HIGH ORAL DOSES. HOWEVER, IT DID NOT CAUSE HARM TO THE PREGNANT ANIMAL OR TO THE FETUS WHEN APPLIED TO THE SKIN OF THE PREGNANT ANIMAL.

**3. COMPOSITION/INFORMATION ON INGREDIENTS**

COMPONENTS	CAS-NO.	CONCENTRATION
ETHYLENE GLYCOL	107-21-1	>/=50-<60%

**4. FIRST AID MEASURES**

**EYES:**

IF SYMPTOMS DEVELOP, IMMEDIATELY MOVE INDIVIDUAL AWAY FROM EXPOSURE AND INTO FRESH AIR. FLUSH EYES GENTLY WITH WATER FOR AT LEAST 15 MINUTES WHILE HOLDING EYELIDS APART; SEEK IMMEDIATE MEDICAL ATTENTION.

**SKIN:**

REMOVE CONTAMINATED CLOTHING. WASH EXPOSED AREA WITH SOAP AND WATER. IF SYMPTOMS PERSIST, SEEK MEDICAL ATTENTION. LAUNDRER CLOTHING BEFORE REUSE.

**INGESTION:**

SEEK MEDICAL ATTENTION. IF INDIVIDUAL IS DROWSY OR UNCONSCIOUS, DO NOT GIVE ANYTHING BY MOUTH; PLACE INDIVIDUAL ON THE LEFT SIDE WITH THE HEAD DOWN. CONTACT A PHYSICIAN, MEDICAL FACILITY, OR POISON CONTROL CENTER FOR ADVICE ABOUT WHETHER TO INDUCE VOMITING. IF POSSIBLE, DO NOT LEAVE INDIVIDUAL UNATTENDED.

**INHALATION:**

IF SYMPTOMS DEVELOP, IMMEDIATELY MOVE INDIVIDUAL AWAY FROM EXPOSURE AND INTO FRESH AIR. SEEK IMMEDIATE MEDICAL ATTENTION; KEEP PERSON WARM AND QUIET. IF PERSON IS NOT BREATHING, BEGIN ARTIFICIAL RESPIRATION. IF BREATHING IS DIFFICULT, ADMINISTER OXYGEN.

**NOTES TO PHYSICIAN:**

**HAZARDS:**

EFFECTS OF ACUTE ETHYLENE GLYCOL POISONING APPEAR IN THREE FAIRLY DISTINCT STAGES. THE INITIAL STAGE OCCURS SHORTLY AFTER EXPOSURE, LASTS 6-12 HOURS, AND IS CHARACTERIZED BY CENTRAL NERVOUS SYSTEM EFFECTS (TRANSIENT EXHILARATION, NAUSEA, VOMITING, AND IN SEVERE CASES, COMA, CONVULSIONS, AND POSSIBLE DEATH). THE SECOND STAGE LASTS FROM 12-36 HOURS AFTER EXPOSURE AND IS INITIATED BY THE ONSET OF COMA. THIS PHASE IS CHARACTERIZED BY TACHYENIA, TACHYCARDIA, MILD HYPOTENSION, CYANOSIS, AND IN SEVERE CASES, PULMONARY EDEMA, BRONCHOPNEUMONIA, CARDIAC ENLARGEMENT, AND CONGESTIVE FAILURE. THE FINAL STAGE OCCURS 24-72 POST-EXPOSURE AND IS CHARACTERIZED BY RENAL FAILURE, RANGING FROM A MILD INCREASE IN BLOOD UREA NITROGEN AND CREATININE FOLLOWED BY RECOVERY, TO COMPLETE ANURIA WITH ACUTE TUBULAR

NECROSIS THAT CAN LEAD TO DEATH. OXALURIA IS FOUND IN MOST CASES. THE MOST SIGNIFICANT LABORATORY FINDING IN ETHYLENE GLYCOL INTOXICATION IS SEVERE METABOLIC ACIDOSIS.

**TREATMENT:**

THIS PRODUCT CONTAINS ETHYLENE GLYCOL. ETHANOL DECREASES THE METABOLISM OF ETHYLENE GLYCOL TO TOXIC METABOLITES. ETHANOL SHOULD BE ADMINISTERED AS SOON AS POSSIBLE IN CASES OF SEVERE POISONING SINCE THE ELIMINATION HALF-LIFE OF ETHYLENE GLYCOL IS 3 HOURS. IF MEDICAL CARE WILL BE DELAYED SEVERAL HOURS, GIVE THE PATIENT THREE TO FOUR 1-OUNCE ORAL "SHOTS" OF 86-PROOF OR HIGHER WHISKEY BEFORE OR DURING TRANSPORT TO THE HOSPITAL. FOMEPIZOLE (4-METHYLPYRAZOLE) IS AN EFFECTIVE ANTAGONIST OF ALCOHOL DEHYDROGENASE, AND AS SUCH, MAY BE USED AS AN ANTIDOTE IN THE TREATMENT OF ETHYLENE GLYCOL POISONING. HEMODIALYSIS EFFECTIVELY REMOVES ETHYLENE GLYCOL AND ITS METABOLITES FROM THE BODY.

**5. FIRE-FIGHTING MEASURES****SUITABLE EXTINGUISHING MEDIA:**

WATER MIST, CARBON DIOXIDE (CO<sub>2</sub>), DRY CHEMICAL, ALCOHOL-RESISTANT FOAM

**HAZARDOUS COMBUSTION PRODUCTS:**

MAY FORM: CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS

**PRECAUTIONS FOR FIRE-FIGHTING:**

NEVER USE WELDING OR CUTTING TORCH ON OR NEAR DRUM (EVEN EMPTY) BECAUSE PRODUCT (EVEN JUST RESIDUE) CAN IGNITE EXPLOSIVELY. WEAR FULL FIREFIGHTING TURN-OUT GEAR (FULL BUNKER GEAR), AND RESPIRATORY PROTECTION (SCBA).

FLAMMABILITY CLASS FOR FLAMMABLE LIQUIDS: COMBUSTIBLE LIQUID CLASS IIIB

**6. ACCIDENTAL RELEASE MEASURES**

PERSONAL PRECAUTIONS: NO DATA

ENVIRONMENTAL PRECAUTIONS: NO DATA

**METHODS FOR CLEANING UP:**

PERSONS NOT WEARING PROTECTIVE EQUIPMENT SHOULD BE EXCLUDED FROM AREA OF SPILL UNTIL CLEAN-UP HAS BEEN COMPLETED. STOP SPILL AT SOURCE, DIKE AREA OF SPILL TO PREVENT SPREADING, PUMP LIQUID TO SALVAGE TANK. REMAINING LIQUID MAY BE TAKEN UP ON SAND, CLAY, EARTH, FLOOR ABSORBENT, OR OTHER ABSORBENT MATERIAL AND SHOVELED INTO CONTAINERS. ABSORB LIQUID ON VERMICULITE, FLOOR ABSORBENT OR OTHER ABSORBENT MATERIAL.

**7. HANDLING AND STORAGE****HANDLING:**

CONTAINERS OF THIS MATERIAL MAY BE HAZARDOUS WHEN EMPTIED. SINCE EMPTIED CONTAINERS RETAIN PRODUCT RESIDUES (VAPOR, LIQUID, AND/OR SOLID), ALL HAZARD PRECAUTIONS GIVEN IN THE DATA SHEET MUST BE OBSERVED.

**STORAGE:**

STORE IN A COOL, DRY, VENTILATED AREA. KEEP CONTAINERS CLOSED WHEN NOT IN USE. DO NOT STORE NEAR EXTREME HEAT, OPEN FLAME, OR SOURCES OF IGNITION.

**8. EXPOSURE CONTROLS/PERSONAL PROTECTION**

EXPOSURE GUIDELINES:

ETHYLENE GLYCOL 107-21-1:

ACGIH:

CEILING LIMIT VALUE: 100 MG/M3 AEROSOL.

GENERAL ADVICE:

THESE RECOMMENDATIONS PROVIDE GENERAL GUIDANCE FOR HANDLING THIS PRODUCT. PERSONAL PROTECTIVE EQUIPMENT SHOULD BE SELECTED FOR INDIVIDUAL APPLICATIONS AND SHOULD CONSIDER FACTORS WHICH AFFECT EXPOSURE POTENTIAL, SUCH AS HANDLING PRACTICES, CHEMICAL CONCENTRATIONS AND VENTILATION. IT IS ULTIMATELY THE RESPONSIBILITY OF THE EMPLOYER TO FOLLOW REGULATORY GUIDELINES ESTABLISHED BY LOCAL AUTHORITIES.

EXPOSURE CONTROLS:

PROVIDE SUFFICIENT MECHANICAL (GENERAL AND/OR LOCAL EXHAUST) VENTILATION TO MAINTAIN EXPOSURE BELOW EXPOSURE GUIDELINES (IF APPLICABLE) OR BELOW LEVELS THAT CAUSE KNOWN, SUSPECTED OR APPARENT ADVERSE EFFECTS.

EYE PROTECTION:

NOT REQUIRED UNDER NORMAL CONDITIONS OF USE. WEAR SPLASH-PROOF SAFETY GOGGLES IF MATERIAL COULD BE MISTED OR SPLASHED INTO EYES.

SKIN AND BODY PROTECTION:

WEAR NORMAL WORK CLOTHING INCLUDING LONG PANTS, LONG-SLEEVED SHIRTS AND FOOT COVERING TO PREVENT DIRECT CONTACT OF THE PRODUCT WITH THE SKIN. LAUNDRY CLOTHING BEFORE REUSE. IF SKIN IRRITATION DEVELOPS, CONTACT YOUR FACILITY HEALTH AND SAFETY PROFESSIONAL OR YOUR LOCAL SAFETY EQUIPMENT SUPPLIER TO DETERMINE THE PROPER PERSONAL PROTECTIVE EQUIPMENT FOR YOUR USE.

WEAR RESISTANT GLOVES SUCH AS:

NEOPRENE  
NITRILE RUBBER  
POLYVINYL CHLORIDE  
POLYETHYLENE

RESPIRATORY PROTECTION:

RESPIRATORY PROTECTION IS NOT REQUIRED UNDER NORMAL CONDITIONS OF USE.

## 9. PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: LIQUID

FORM: NO DATA

COLOR: GREEN

ODOR: NO DATA

BOILING POINT/BOILING RANGE: 226.00 DEG. F / 226 DEG. F @ 760.00 MMHg

pH (AVERAGE): 10.5

FLASH POINT: (>)250 DEG. F / 121 DEG. C

EVAPORATION RATE: NO DATA

EXPLOSION LIMITS:

3.2% (V)  
15.3% (V)

VAPOR PRESSURE: 23.33 HPA @ 68 DEG. F / 20 DEG. C

VAPOR DENSITY: NO DATA

DENSITY (AVERAGE):

1.0825 G/CM3 @ 60.01 DEG. F / 15.56 DEG. C

8.956 LB/GAL

SOLUBILITY: NO DATA

PARTITION COEFFICIENT n-OCTANOL/WATER: NO DATA

LOG POW: NO DATA AVAILABLE

AUTOIGNITION TEMPERATURE: NO DATA

## 10. STABILITY AND REACTIVITY

STABILITY: STABLE.

CONDITIONS TO AVOID:

INCOMPATIBLE PRODUCTS:

AVOID CONTACT WITH: STRONG OXIDIZING AGENTS

HAZARDOUS DECOMPOSITION PRODUCTS:

MAY FORM: CARBON DIOXIDE AND CARBON MONOXIDE, VARIOUS HYDROCARBONS

HAZARDOUS REACTIONS:

PRODUCT WILL NOT UNDERGO HAZARDOUS POLYMERIZATION.

THERMAL DECOMPOSITION: NO DATA

## 11. TOXICOLOGICAL INFORMATION

ACUTE ORAL TOXICITY:

ETHYLENE GLYCOL:

LD50 RAT: 6,140 MG/KG

LD50 MOUSE: 14,600 MG/KG

ACUTE INHALATION TOXICITY:

ETHYLENE GLYCOL: NO DATA AVAILABLE

ACUTE DERMAL TOXICITY:

ETHYLENE GLYCOL:

LD50 RABBIT: 10,611 MG/KG

## 12. ECOLOGICAL INFORMATION

AQUATIC TOXICITY:

ACUTE AND PROLONGED TOXICITY TO FISH: NO DATA

ACUTE TOXICITY TO AQUATIC INVERTEBRATES: NO DATA

ENVIRONMENTAL FATE AND PATHWAYS: NO DATA

## 13. DISPOSAL CONSIDERATIONS

WASTE DISPOSAL METHODS:

DESTROY BY LIQUID INCINERATION. DISPOSE OF IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE AND FEDERAL REGULATIONS. FOR ASSISTANCE WITH YOUR WASTE MANAGEMENT NEEDS - INCLUDING DISPOSAL, RECYCLING AND WASTE STREAM REDUCTION, CONTACT ASHLAND DISTRIBUTION'S ENVIRONMENTAL SERVICES GROUP AT

800-637-7922.

**14. TRANSPORT INFORMATION**

DANGEROUS GOODS DESCRIPTIONS (IF INDICATED ABOVE) MAY NOT REFLECT PACKAGE SIZE, QUANTITY, END-USE OR REGION-SPECIFIC EXCEPTIONS THAT CAN BE APPLIED. CONSULT SHIPPING DOCUMENTS FOR DESCRIPTIONS THAT ARE SPECIFIC TO THE SHIPMENT.

**15. REGULATORY INFORMATION**

CALIFORNIA PROP. 65:

WARNING!

THIS PRODUCT CONTAINS A CHEMICAL KNOWN IN THE STATE OF CALIFORNIA TO CAUSE CANCER.

1,4-DIOXANE  
LEAD  
NICKEL  
ARSENIC  
CADMIUM  
ACETALDEHYDE

WARNING!

THIS PRODUCT CONTAINS A CHEMICAL KNOWN IN THE STATE OF CALIFORNIA TO CAUSE BIRTH DEFECTS OR OTHER REPRODUCTIVE HARM.

LEAD  
MERCURY  
CADMIUM

SARA HAZARD CLASSIFICATION: ACUTE HEALTH HAZARD

SARA 313 COMPONENT(S):

ETHYLENE GLYCOL	107-21-1	51.4689%
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REPORTABLE QUANTITY - PRODUCT:

US. EPA CERCLA HAZARDOUS SUBSTANCES (40 CFR 302): 9714 LBS

REPORTABLE QUANTITY - COMPONENTS:

ETHYLENE GLYCOL	107-21-1	5000 LBS
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HMIS NFPA

HEALTH	1*
FLAMMABILITY	1
REACTIVITY	0
OTHER	NO DATA

**16. OTHER INFORMATION**

THE INFORMATION ACCUMULATED HEREIN IS BELIEVED TO BE ACCURATE BUT IS NOT WARRANTED TO BE WHETHER ORIGINATING WITH THE COMPANY OR NOT. RECIPIENTS ARE ADVISED TO CONFIRM IN ADVANCE OF NEED THAT THE INFORMATION IS CURRENT, APPLICABLE, AND SUITABLE TO THEIR CIRCUMSTANCES. THIS MSDS HAS BEEN PREPARED BY ASHLAND'S ENVIRONMENTAL HEALTH AND SAFETY DEPARTMENT (1-800-325-3751).

