

MATERIAL SAFETY DATA SHEET


PENNZOIL PRODUCTS COMPANY

I PRODUCT IDENTIFICATION

| | | | | | | | | | | | | |
|-------------------------|--|---|------------------|----------------|-----------|-----------|---------|------------|---------------|--------------|--|----------|
| Manufacturer's Name | PENNZOIL COMPANY | CAS Number: MIXTURE | | | | | | | | | | |
| Address | P.O. BOX 808 OIL CITY, PENNSYLVANIA 163010808 | MSDS Code: 000950 | | | | | | | | | | |
| | | NFPA Hazard Identification <table border="1"> <tr> <td>Degree of Hazard</td> <td>Hazard Ratings</td> </tr> <tr> <td>Health: 2</td> <td>0 - Least</td> </tr> <tr> <td>Fire: 1</td> <td>1 - Slight</td> </tr> <tr> <td>Reactivity: 0</td> <td>2 - Moderate</td> </tr> <tr> <td></td> <td>3 - High</td> </tr> <tr> <td></td> <td>4 - Extreme</td> </tr> </table> | Degree of Hazard | Hazard Ratings | Health: 2 | 0 - Least | Fire: 1 | 1 - Slight | Reactivity: 0 | 2 - Moderate | | 3 - High |
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| Health: 2 | 0 - Least | | | | | | | | | | | |
| Fire: 1 | 1 - Slight | | | | | | | | | | | |
| Reactivity: 0 | 2 - Moderate | | | | | | | | | | | |
| | 3 - High | | | | | | | | | | | |
| | 4 - Extreme | | | | | | | | | | | |
| Emergency Telephone No. | (713) 236-6070 | | | | | | | | | | | |
| Trade Name | PENNZOIL ANTI-FREEZE & SUMMER COOLANT | | | | | | | | | | | |
| Synonyms | ANTI-FREEZE | | | | | | | | | | | |

II INGREDIENTS

| COMPONENT NAME CAS NUMBER | HAZARDOUS IN BLEND | PERCENTAGE MIN MAX | COMPONENT EXPOSURE LIMITS | UNITS |
|---|-----------------------|-----------------------|------------------------------|----------------------|
| ETHYLENE GLYCOL 107-21-1 | YES | 80.00 TO 95.00 | ACGIH TLV 125.0000 | MG/M3 |
| WATER 7732-18-5 | NO | 1.00 TO 5.00 | OSHA PEL ACGIH TLV | NO LIMIT NO LIMIT |
| ADDITIVE PACKAGE CONTAINING SODIUM PROPRIETARY | NO | 1.00 TO 5.00 | OSHA PEL ACGIH TLV | NO LIMIT NO LIMIT |
| ADDITIVE PACKAGE CONTAINING PHOSPHOROUS PROPRIETARY | NO | 1.00 TO 5.00 | OSHA PEL ACGIH TLV | NO LIMIT NO LIMIT |
| ADDITIVE PACKAGE CONTAINING SODIUM, SILICON PROPRIETARY | NO | < 1.00 | OSHA PEL ACGIH TLV | NO LIMIT NO LIMIT |
| ADDITIVE PACKAGE CONTAINING SODIUM, NITROGEN PROPRIETARY | NO | < 1.00 | OSHA PEL ACGIH TLV | NO LIMIT NO LIMIT |

BY: ENVIRONMENTAL, SAFETY & HEALTH
(713) 546-8512

EFFECTIVE DATE: MARCH 16, 1988

DISCLAIMER OF WARRANTY:

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REQUIRED UNDER USDL SAFETY AND HEALTH REGULATIONS FOR SHIP REPAIRING, SHIPBUILDING, AND SHIPBREAKING (29 CFR 1915, 1916, 1917).

III HEALTH EFFECT INFORMATION**EYE CONTACT**

AVOID EYE CONTACT. THIS PRODUCT MAY BE SLIGHTLY IRRITATING TO THE EYES UPON DIRECT CONTACT. THIS PRODUCT HAS A LOW VAPOR PRESSURE AND IS NOT EXPECTED TO PRESENT A HAZARD TO THE EYES AT AMBIENT CONDITIONS. EXPOSURE TO VAPORS GENERATED UNDER UNUSUAL CONDITIONS MAY BE MILDLY IRRITATING TO THE EYES. SEE HEALTH DATA SECTION BELOW.

SKIN CONTACT

AVOID SKIN CONTACT. PROLONGED OR REPEATED CONTACT MAY RESULT IN SLIGHT SKIN IRRITATION. SEE HEALTH DATA SECTION BELOW.

INHALATION

AVOID PROLONGED INHALATION OF MIST OR VAPORS. THIS PRODUCT HAS A LOW VAPOR PRESSURE AND IS NOT EXPECTED TO PRESENT AN INHALATION HAZARD AT AMBIENT CONDITIONS. CAUTION SHOULD BE TAKEN TO PREVENT AEROSOLIZATION OR MISTING OF THIS PRODUCT. THIS PRODUCT MAY BE CONSIDERED A LOW HEALTH HAZARD UNLESS INHALED IN VERY HIGH CONCENTRATIONS. ACUTE AND CHRONIC OVEREXPOSURES MAY BE IRRITATING TO THE RESPIRATORY TRACT. SEE HEALTH DATA SECTION BELOW.

INGESTION

DO NOT INGEST. SEE HEALTH DATA SECTION BELOW.

HEALTH DATA

PRODUCT CONTAINS ETHYLENE GLYCOL. NOT READILY ABSORBED THROUGH SKIN IN ACUTELY TOXIC AMOUNTS. HOWEVER, ANIMAL STUDIES AND HUMAN CASE REPORTS SUGGEST THAT ABSORPTION THROUGH THE SKIN REPEATEDLY OVER A PROLONGED PERIOD OF TIME CAN PRESENT A HEALTH HAZARD. A HAZARD DUE TO INHALATION MAY EXIST IN CIRCUMSTANCES WHERE ETHYLENE GLYCOL IS HANDLED HOT OR WHERE AGITATION OR OTHER MECHANICAL OPERATIONS MAY CREATE AN EXCESSIVE FOG OR HEAVY MIST. HOWEVER, IF WARNING DISCOMFORT FROM EXCESSIVE CONCENTRATIONS ARE HEEDED, NO HEALTH PROBLEMS ARE EXPECTED. SIGNS AND SYMPTOMS OF INHALATION OVEREXPOSURE INCLUDE RESPIRATORY TRACT IRRITATION, HEADACHE, DROWSINESS AND NARCOSIS. MAY LEAD TO KIDNEY, LIVER, BLOOD AND CNS DISORDERS. INGESTION OF SMALL QUANTITIES (100 ML) MAY BE FATAL. PRODUCES CNS STIMULATION FOLLOWED BY DEPRESSION, CARDIOPULMONARY EFFECTS, AND LATER POTENTIALLY TERMINAL KIDNEY DAMAGE. SIGNS AND SYMPTOMS INCLUDE BEHAVIORAL DISORDERS, DROWSINESS, VOMITING, DIARRHEA, VISUAL DISTURBANCES, THIRST, CONVULSIONS, CYANOSIS, AND RAPID HEART RATE. REPRODUCTIVE AND DEVELOPMENTAL EFFECTS HAVE BEEN DEMONSTRATED IN EXPERIMENTAL ANIMALS INGESTING HIGH DOSES OF ETHYLENE GLYCOL. THE SIGNIFICANCE THESE RESULTS TO HUMANS IS NOT KNOWN. ETHYLENE GLYCOL IS NOT CONSIDERED TO BE CARCINOGENIC.

IV EMERGENCY & FIRST AID PROCEDURES**EYE CONTACT**

IMMEDIATELY FLUSH EYES WITH LARGE AMOUNTS OF WATER AND CONTINUE FLUSHING FOR 15 MINUTES UNTIL IRRITATION SUBSIDES. IF IRRITATION PERSISTS, SEEK MEDICAL ATTENTION.

SKIN CONTACT

WASH CONTAMINATED AREA THOROUGHLY WITH SOAP AND WATER.

INHALATION

THIS MATERIAL HAS A LOW VAPOR PRESSURE AND IS NOT EXPECTED TO PRESENT AN INHALATION EXPOSURE AT AMBIENT CONDITIONS. IF VAPOR OR MIST IS GENERATED WHEN THE MATERIAL IS HEATED OR HANDLED, REMOVE VICTIM FROM EXPOSURE. IF DISCOMFORT PERSISTS SEEK MEDICAL ATTENTION.

INGESTION

INDUCE VOMITING. SEEK IMMEDIATE MEDICAL ATTENTION.

V PERSONAL HEALTH PROTECTION INFORMATION**EYE
PROTECTION**

EYE PROTECTION IS NOT REQUIRED UNDER CONDITIONS OF NORMAL USE. IF MATERIAL IS HANDLED SUCH THAT IT COULD BE SPLASHED INTO EYES, WEAR PLASTIC FACE SHIELD OR SPLASH-PROOF SAFETY GOGGLES.

**SKIN
PROTECTION**

SKIN PROTECTION IS NOT REQUIRED UNDER CONDITIONS OF NORMAL USE.

**RESPIRATORY
PROTECTION**

RESPIRATORY PROTECTION IS NOT REQUIRED UNDER CONDITIONS OF NORMAL USE. IF VAPOR OR MIST IS GENERATED WHEN THE MATERIAL IS HEATED OR HANDLED, USE AN ORGANIC VAPOR RESPIRATOR WITH A DUST AND MIST FILTER. ALL RESPIRATORS MUST BE NIOSH CERTIFIED.

VENTILATION

GENERAL ROOM VENTILATION IS NORMALLY SUFFICIENT TO PREVENT BUILDUP OF HAZARDOUS CONCENTRATIONS. IF VAPOR OR MIST IS GENERATED WHEN THE MATERIAL IS HEATED OR HANDLED, ADEQUATE VENTILATION IN ACCORDANCE WITH GOOD ENGINEERING PRACTICE MUST BE PROVIDED TO MAINTAIN CONCENTRATIONS BELOW THE SPECIFIED EXPOSURE OR FLAMMABLE LIMITS.

OTHER

CONSUMPTION OF FOOD AND BEVERAGE SHOULD BE AVOIDED IN WORK AREAS WHERE HYDROCARBONS ARE PRESENT. ALWAYS WASH HANDS AND FACE WITH SOAP AND WATER BEFORE EATING, DRINKING, OR SMOKING.

VI. FIRE PROTECTION INFORMATION

FLASH POINT 230F

TEST METHOD C.O.C.

AUTOIGNITION TEMPERATURE NO DATA

TEST METHOD NO DATA

FLAMMABLE LIMITS IN AIR % BY VOL.

LOWER 3.2

UPPER NO DATA

EXTINGUISHING
MEDIA

USE DRY CHEMICAL, ALCOHOL FOAM, OR CARBON DIOXIDE.

SPECIAL FIRE
FIGHTING
PROCEDURES

WATER MAY BE INEFFECTIVE BUT CAN BE USED TO COOL CONTAINERS EXPOSED TO HEAT OR FLAME. CAUTION SHOULD BE EXERCISED WHEN USING WATER OR FOAM AS FROTHING MAY OCCUR, ESPECIALLY IF SPRAYED INTO CONTAINERS OF HOT, BURNING LIQUID.

UNUSUAL FIRE
AND EXPLOSIVE
CONDITIONS

DENSE SMOKE MAY BE GENERATED WHILE BURNING. CARBON MONOXIDE, CARBON DIOXIDE, AND OTHER OXIDES MAY BE GENERATED AS PRODUCTS OF COMBUSTION.

VII. REACTIVITY DATASTABILITY
(THERMAL,
LIGHT, ETC.)

STABLE

CONDITIONS TO
AVOID

NONE

HAZARDOUS
POLYMERIZATION

WILL NOT OCCUR

CONDITIONS TO
AVOID

NONE

INCOMPATIBILITY
MATERIALS TO AVOID

MAY REACT WITH STRONG OXIDIZING AGENTS.

HAZARDOUS DECOMPOSITION
PRODUCTS

NONE

VIII ENVIRONMENTAL PRECAUTIONS**STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED**

CONSULT HEALTH EFFECT INFORMATION IN SECTION III, PERSONAL HEALTH PROTECTION INFORMATION IN SECTION V, FIRE PROTECTION INFORMATION IN SECTION VI, AND REACTIVITY DATA IN SECTION VII. NOTIFY APPROPRIATE AUTHORITIES OF SPILL. CONTAIN SPILL IMMEDIATELY. DO NOT ALLOW SPILL TO ENTER SEWERS OR WATERCOURSES. REMOVE ALL SOURCES OF IGNITION. ABSORB WITH APPROPRIATE INERT MATERIAL SUCH AS SAND, CLAY, ETC.. LARGE SPILLS MAY BE PICKED UP USING VACUUM PUMPS, SHOVELS, BUCKETS, OR OTHER MEANS AND PLACED IN DRUMS OR OTHER SUITABLE CONTAINERS.

WASTE DISPOSAL METHOD

ALL DISPOSALS MUST COMPLY WITH FEDERAL, STATE, AND LOCAL REGULATIONS. THE MATERIAL, IF SPILLED OR DISCARDED, MAY BE A REGULATED WASTE. REFER TO STATE AND LOCAL REGULATIONS. DEPARTMENT OF TRANSPORTATION (DOT) REGULATIONS MAY APPLY FOR TRANSPORTING THIS MATERIAL WHEN SPILLED. WASTE MATERIAL MAY BE LANDFILLED OR INCINERATED AT AN APPROVED FACILITY. MATERIALS SHOULD BE RECYCLED IF POSSIBLE.

IX MISCELLANEOUS**HANDLING AND STORAGE REQUIREMENTS**

DO NOT TRANSFER TO UNMARKED CONTAINERS. STORE IN CLOSED CONTAINERS AWAY FROM HEAT, SPARKS, OPEN FLAME, OR OXIDIZING MATERIALS. THIS PRODUCT IS NOT CLASSIFIED AS HAZARDOUS UNDER DOT REGULATIONS. FIRE EXTINGUISHERS SHOULD BE KEPT READILY AVAILABLE. SEE NFPA 30 AND OSHA 1910.106--FLAMMABLE AND COMBUSTIBLE LIQUIDS.

ADDITIONAL INFORMATION

THIS MIXTURE MAY BE FORMULATED IN PART WITH COMPONENTS PURCHASED FROM OTHER COMPANIES. IN MANY INSTANCES, ESPECIALLY WHEN PROPRIETARY OR TRADE SECRET MATERIALS ARE USED, PENNZOIL COMPANY MUST RELY UPON THE HAZARD EVALUATION OF SUCH COMPONENT SUBMITTED TO PENNZOIL BY THAT PRODUCT'S MANUFACTURER OR IMPORTER.

X PHYSICAL PROPERTIES

| | | | |
|----------------|--------------------------------|---------------------------|---------------|
| BOILING POINT | 300F MIN | PERCENT VOLATILE | NIL |
| MELTING POINT | NO DATA | VAPOR DENSITY (AIR = 1) | 2.14 |
| APPEARANCE | FLUORESCENT GREEN OR BLUE LIQ. | EVAPORATION RATE (EE = 1) | < 1.0 |
| ODOR | MILD GLYCOL ODOR. | SPECIFIC GRAVITY | 1.110 - 1.145 |
| VAPOR PRESSURE | < 1.0 MM HG @ 68F | MOLECULAR WEIGHT | NO DATA |
| SOLUBILITY | COMPLETELY SOLUBLE IN WATER. | | |