ITEM: 5ZP74 - GAUGE WELDING 30 PSI

MSDS: A6193 **ORDER: 0207908186** **DROP LOCATION: 100**

MATERIAL SAFETY DATA SHEET (MSDS)

This MSDS should be attached or kept with the respective product with which it is associated.

##

IAL SAFETY DATA SHEET - A6193

Associated Grainger Items
1A316, 1A317, 1X676, 1X678, 1X680, 1X682, 1X684, 1X686, 1X689, 1X691, 1X694
1X696, 1X698, 1X700, 1X702, 1X704, 1X706, 1X708, 1X710, 1X712, 1X714, 1X716
1X718, 1X720, 1X722, 1X724, 2A211, 2P846, 2P847, 2P848, 2P849, 2P850, 2P851
3A420, 4A370, 4A371, 4A372, 5A041, 5A042, 5A043, 5A044, 5A045, 5HK51, 5HK52
5HK53, 5HK54, 5HK55, 5HK56, 5HK57, 5HK58, 5HK59, 5HK60, 5HK61, 5HK62, 5HK63
5HK64, 5HK65, 5HK66, 5HK67, 5HK68, 5HK69, 5HK70, 5HK71, 5HK72, 5HK75, 5X369
5X370, 5X371, 5X938, 5X939, 5XP52, 5XP54, 5XP56, 5XP58, 5XP60, 5XP62, 5XP65
5XP67, 5XP68, 5XP69, 5XP70, 5XP71, 5XP72, 5XP73, 5XP74, 5XP75, 5XP76, 5XP77
5XP80, 5XP81, 5XP82, 5XP86, 5XP87, 5XP88, 5XP89, 5ZP68, 5ZP69, 5ZP70, 5ZP71
5ZP72, 5ZP73, 5ZP74, 5ZP75, 5ZP76, 5ZP77, 5ZP78, 5ZP79, 5ZP80, 5ZP81, 5ZP82
5ZP83, 5ZP84, 5ZP85, 5ZP90, 5ZP91, 5ZP92, 5ZP93, 5ZP94, 5ZP95, 5ZP96, 5ZP97
5ZP98, 5ZP99, 5ZR01, 5ZR02, 5ZR03, 5ZR04, 5ZR05, 5ZR06, 5ZR07, 5ZR08, 5ZR09
5ZR10, 5ZR11, 5ZR12, 5ZR13, 5ZR14, 5ZR15

REPORT NUMBER: 703
MSDS NO: DZ08439
MAINFRAME UPLOAD DATE: 02/18/03

UNIVAR USA INC.
MATERIAL SAFETY DATA SHEET

VERSION: 007
PRODUCT: GLYCERINE

UNIVAR USA INC.
6100 CARILLON POINT
KIRKLAND, WA 98033
(425) 889-3400

EMERGENCY ASSISTANCE:
FOR EMERGENCY ASSISTANCE INVOLVING CHEMICALS CALL - CHEMTREC: (800) 424-9300

PRODUCT IDENTIFICATION:

PRODUCT NAME: GLYCERINE

MSDS#: DZ08439

DATE ISSUED: 07/10/00

SUPERSEDES: NEW

ISSUED BY: 008360

1. CHEMICAL PRODUCT IDENTIFICATION

OUR EMERGENCY PHONE NUMBER: 989-636-4400

JCT: GLYCERINE

2. COMPOSITION/INFORMATION ON INGREDIENTS

GLYCERINE, MINIMUM CAS# 000056-81-5 99.7%

3. HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW:
WATER WHITE LIQUID. ODORLESS. NO SIGNIFICANT HAZARDS FOR EMERGENCY RESPONSE ARE KNOWN.

POTENTIAL HEALTH EFFECTS (SEE SECTION 11 FOR TOXICOLOGICAL DATA.)

EYE:
MAY CAUSE SLIGHT TRANSIENT (TEMPORARY) EYE IRRITATION. CORNEAL INJURY IS UNLIKELY.

SKIN:
PROLONGED OR REPEATED EXPOSURE NOT LIKELY TO CAUSE SIGNIFICANT SKIN IRRITATION. A SINGLE PROLONGED EXPOSURE IS NOT LIKELY TO RESULT IN THE MATERIAL BEING ABSORBED THROUGH SKIN IN HARMFUL AMOUNTS. MAY BE ABSORBED IN POTENTIALLY HARMFUL AMOUNTS WHEN APPLIED IN LARGE QUANTITIES TO SEVERE BURNS (SECOND OR THIRD DEGREE) OVER LARGE AREAS OF THE BODY AS PART OF A CREAM OR OTHER TOPICAL APPLICATION. ABSORPTION UNDER SUCH CIRCUMSTANCES CAN ELEVATE SERUM OSMOLALITY AND MAY RESULT IN OSOMOTIC SHOCK.

INGESTION:
SINGLE DOSE ORAL TOXICITY IS CONSIDERED TO BE EXTREMELY LOW. SMALL AMOUNTS SWALLOWED INCIDENTAL TO NORMAL HANDLING OPERATIONS ARE NOT LIKELY TO CAUSE INJURY; SWALLOWING AMOUNTS LARGER THAN THAT MAY CAUSE INJURY. SIGNS AND SYMPTOMS OF EXCESSIVE EXPOSURE MAY BE CENTRAL NERVOUS SYSTEM EFFECTS AND INCREASED BLOOD SUGAR LEVELS.

INHALATION:
AT ROOM TEMPERATURE, VAPORS ARE MINIMAL DUE TO PHYSICAL PROPERTIES. IF HEATED OR SPRAYED AS AN AEROSOL, AIRBORNE MATERIAL MAY CAUSE UPPER RESPIRATORY IRRITATION.

SYSTEMIC (OTHER TARGET ORGAN) EFFECTS:
REPEATED EXCESSIVE EXPOSURES MAY CAUSE INCREASED FAT LEVELS IN BLOOD. OBSERVATIONS IN ANIMALS INCLUDE KIDNEY, LIVER, AND GASTROINTESTINAL EFFECTS WITH VERY LARGE ORAL DOSES.

CANCER INFORMATION: DID NOT CAUSE CANCER IN LONG-TERM ANIMAL STUDIES.

NTOLOGY:
H DEFECTS ARE UNLIKELY. EXPOSURES HAVING NO ADVERSE EFFECTS ON THE ER SHOULD HAVE NO EFFECT ON THE FETUS.

REPRODUCTIVE EFFECTS:
REPRODUCTIVE EFFECTS SEEN IN FEMALE ANIMALS ARE BELIEVED TO BE DUE TO ALTERED NUTRITIONAL STATUS RESULTING FROM EXTREMELY HIGH DOSES IN THEIR DIETS. SIMILAR EFFECTS HAVE BEEN SEEN IN ANIMALS FED SYNTHETIC DIETS.

4. FIRST AID

EYES: FLUSH EYES WITH PLENTY OF WATER.

SKIN: WASH OFF IN FLOWING WATER OR SHOWER.

INGESTION:
IF SWALLOWED, SEEK MEDICAL ATTENTION. DO NOT INDUCE VOMITING UNLESS DIRECTED TO DO SO BY MEDICAL PERSONNEL.

INHALATION: REMOVE TO FRESH AIR IF EFFECTS OCCUR. CONSULT A PHYSICIAN.

NOTE TO PHYSICIAN:
NO SPECIFIC ANTIDOTE. SUPPORTIVE CARE. TREATMENT BASED ON JUDGMENT OF THE PHYSICIAN IN RESPONSE TO REACTIONS OF THE PATIENT.

5. FIRE FIGHTING MEASURES

FLAMMABLE PROPERTIES:

FLASH POINT: 390 F, 199C
METHOD USED: PMCC

AUTOIGNITION TEMPERATURE: 698 F, 370 C.

FLAMMABILITY LIMITS:
LFL: NOT DETERMINED.
UFL: NOT DETERMINED.

HAZARDOUS COMBUSTION PRODUCTS:
DURING A FIRE, SMOKE MAY CONTAIN THE ORIGINAL MATERIAL IN ADDITION TO UNIDENTIFIED TOXIC AND/OR IRRITATING COMPOUNDS. HAZARDOUS COMBUSTION PRODUCTS MAY INCLUDE AND ARE NOT LIMITED TO:
ALDEHYDES, CARBON MONOXIDE, CARBON DIOXIDE.

OTHER FLAMMABILITY INFORMATION:
VIOLENT STEAM GENERATION OR ERUPTION MAY OCCUR UPON APPLICATION OF DIRECT WATER STREAM.

EXTINGUISHING MEDIA:
WATER FOG OR FINE SPRAY, CARBON DIOXIDE, DRY CHEMICAL, FOAM. ALCOHOL RESISTANT FOAMS (ATC TYPE) OR PROTEIN FOAMS MAY FUNCTION, BUT MUCH LESS EFFECTIVELY. DO NOT USE DIRECT WATER STREAM. WILL SPREAD FIRE.

MEDIA TO BE AVOIDED: DO NOT USE DIRECT WATER STREAM.

FIRE FIGHTING INSTRUCTIONS:
KEEP PEOPLE AWAY. ISOLATE FIRE AREA AND DENY UNNECESSARY ENTRY. BURNING LIQUIDS MAY BE MOVED BY FLUSHING WITH WATER TO PROTECT PERSONNEL AND MINIMIZE PROPERTY DAMAGE. BURNING LIQUIDS MAY BE EXTINGUISHED BY DILUTION WITH WATER. DO NOT USE DIRECT WATER STREAM. MAY SPREAD FIRE.

PROTECTIVE EQUIPMENT FOR FIRE FIGHTERS:
WEAR POSITIVE-PRESSURE SELF-CONTAINED BREATHING APPARATUS (SCBA) AND PROTECTIVE FIRE FIGHTING CLOTHING (INCLUDES FIRE FIGHTING HELMET, COAT, PANTS, BOOTS, AND GLOVES. IF PROTECTIVE EQUIPMENT IS NOT AVAILABLE OR NOT USED, FIGHT FIRE FROM A PROTECTED LOCATION OR SAFE DISTANCE.

6. ACCIDENTAL RELEASE MEASURES

(SEE SECTION 15 FOR REGULATORY INFORMATION)

PROTECT PEOPLE:
KEEP UNNECESSARY PEOPLE AWAY; ISOLATE HAZARD AREA AND DENY UNNECESSARY ENTRY.

PROTECT THE ENVIRONMENT:
KEEP OUT OF SEWERS, STORM DRAINS, SURFACE WATER AND SOIL.

CLEANUP:
SMALL SPILLS: COVER WITH ABSORBENT MATERIAL, SOAK UP AND SWEEP INTO A DRUM.
LARGE SPILLS: DIKE AROUND SPILL AND PUMP INTO SUITABLE CONTAINERS.

7. HANDLING AND STORAGE

HANDLING: PRACTICE REASONABLE CARE AND CAUTION.

STORAGE:
GLYCERINE FREEZES AT 64F. GLYCERINE SHOULD BE KEPT ABOVE 64F BUT BELOW 130F.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:
PROVIDE GENERAL AND/OR LOCAL EXHAUST VENTILATION TO CONTROL AIRBORNE LEVELS BELOW THE EXPOSURE GUIDELINES.

PERSONAL PROTECTIVE EQUIPMENT:

EYE/FACE PROTECTION: USE SAFETY GLASSES.

SKIN PROTECTION:
NO PRECAUTIONS OTHER THAN CLEAN BODY-COVERING CLOTHING SHOULD BE NEEDED.

RESPIRATORY PROTECTION:
FOR MOST CONDITIONS, NO RESPIRATORY PROTECTION SHOULD BE NEEDED; HOWEVER, IF MATERIAL IS HEATED OR SPRAYED, USE AN APPROVED AIR-PURIFYING RESPIRATOR.

EXPOSURE GUIDELINE:

GLYCERIN:
ACGIH TLV IS 10 MG/M3. OSHA PEL IS 10 MG/M3 TOTAL, 5 MG/M3 RESPIRABLE. PELS ARE IN ACCORD WITH THOSE RECOMMENDED BY OSHA, AS IN THE 1989 REVISION OF PELS.

9. PHYSICAL AND CHEMICAL PROPERTIES

APPEARANCE: WATER WHITE LIQUID.

ODOR: ODORLESS

VAPOR PRESSURE: <1.0 MMHg @ 20 C

VAPOR DENSITY: 3.1

BOILING POINT: 554 F, 290 C

SOLUBILITY IN WATER: MISCIBLE

SPECIFIC GRAVITY: 1.2607 @ 25/25 (MIN.)

10. STABILITY AND REACTIVITY

CHEMICAL STABILITY: STABLE.

CONDITIONS TO AVOID:
AVOID STRONG OXIDIZING AGENT (SUCH AS SODIUM HYPOCHLORITE, HYPOCHLOROUS ACID).

INCOMPATIBILITY WITH OTHER MATERIALS: OXIDIZING MATERIAL.

HAZARDOUS DECOMPOSITION PRODUCTS: ACROLEIN.

HAZARDOUS POLYMERIZATION: WILL NOT OCCUR.

11. TOXICOLOGICAL INFORMATION

(SEE SECTION 3 FOR POTENTIAL HEALTH EFFECTS. FOR DETAILED TOXICOLOGICAL DATA,
WRITE OR CALL THE ADDRESS OR NON-EMERGENCY NUMBER SHOWN IN SECTION 1)

SKIN: THE LD50 FOR SKIN ABSORPTION IN RABBITS IS >10,000 MG/KG.

INGESTION: THE ORAL LD50 FOR RATS IS 17,000 TO 27,200 MG/KG.

INHALATION: THE LC50 FOR 6 HOURS IN RATS WAS >4 MG/LITER.

MUTAGENICITY: IN VITRO MUTAGENICITY STUDIES WERE NEGATIVE.

12. ECOLOGICAL INFORMATION

(FOR DETAILED ECOLOGICAL DATA, WRITE OR CALL THE ADDRESS OR NON-EMERGENCY NUMBER SHOWN IN SECTION 1)

ENVIRONMENTAL FATE:

MOVEMENT & PARTITIONING:
BASED LARGELY OR COMPLETELY ON INFORMATION FOR SIMILAR MATERIAL(S), I.E. GLYCERINE. BIOCONCENTRATION POTENTIAL IS LOW (BCF LESS THAN 100 OR LOG POW LESS THAN 3). LOG OCTANOL/WATER COEFFICIENT (LOG POW) IS -1.76.

DEGRADATION & PERSISTENCE:
BASED LARGELY OR COMPLETELY ON INFORMATION FOR SIMILAR MATERIAL(S), I.E. GLYCERINE.
BIODEGRADATION UNDER AEROBIC LABORATORY CONDITIONS IS HIGH (BOD20 OR BOD/THOD GREATER THAN 40%).
BIODEGRADATION IS EXPECTED TO BE ACHIEVABLE IN A SECONDARY WASTEWATER TREATMENT PLANT.
INHIBITORY CONCENTRATION (IC50) IN OECD ACTIVATED SLUDGE RESPIRATION INHIBITION TEST (OECD TEST NO. 209) IS GREATER THAN 1000 MG/L.
5-DAY BIOCHEMICAL OXYGEN DEMAND (BOD5) IS 0.54 P/P.
10-DAY BIOCHEMICAL OXYGEN DEMAND (BOD10) IS 0.98 P/P.
20-DAY BIOCHEMICAL OXYGEN DEMAND (BOD20) IS 1.0 P/P.
THEORETICAL OXYGEN DEMAND (THOD) IS CALCULATED TO BE 1.22 P/P.

ECOTOXICITY:
BASED LARGELY OR COMPLETELY ON INFORMATION FOR SIMILAR MATERIAL(S), I.E. GLYCERINE.
MATERIAL IS PRACTICALLY NON-TOXIC TO FISH ON AN ACUTE BASIS (LC50 GREATER THAN 100 MG/L).
ACUTE LD50 FOR FATHEAD MINNOW (PIMEPHALES PROMELAS) IS 44000 MG/L.
ACUTE LD50 FOR GOLDFISH (CARASSIUS AURATUS) IS GREATER THAN 5000 MG/L.

13. DISPOSAL CONSIDERATIONS

(SEE SECTION 15 FOR REGULATORY INFORMATION)

DISPOSAL:
DO NOT DUMP INTO ANY SEWERS, ON THE GROUND, OR INTO ANY BODY OF WATER. ALL DISPOSAL METHODS MUST BE IN COMPLIANCE WITH ALL FEDERAL, STATE/PROVINCIAL AND LOCAL LAWS AND REGULATIONS. REGULATIONS MAY VARY IN DIFFERENT LOCATIONS. WASTE CHARACTERIZATIONS AND COMPLIANCE WITH APPLICABLE LAWS ARE THE RESPONSIBILITY SOLELY OF THE WASTE GENERATOR.

FOR UNUSED & UNCONTAMINATED PRODUCT, THE PREFERRED OPTIONS INCLUDE SENDING TO A LICENSED, PERMITTED:
RECYCLER, RECLAIMER, INCINERATOR OR OTHER THERMAL DESTRUCTION DEVICE.

14. TRANSPORT INFORMATION

U.S. DEPARTMENT OF TRANSPORTATION (DOT):
FOR DOT REGULATORY INFORMATION, IF REQUIRED, CONSULT TRANSPORTATION REGULATIONS, OR PRODUCT SHIPPING PAPERS.
NOT REGULATED FOR TRANSPORT BY DOT.

CANADIAN TDG INFORMATION:
FOR TDG REGULATORY INFORMATION, IF REQUIRED, CONSULT TRANSPORTATION REGULATIONS OR PRODUCT SHIPPING PAPERS.

15. REGULATORY INFORMATION

(NOT MEANT TO BE ALL-INCLUSIVE - SELECTED REGULATIONS REPRESENTED)

SARA HAZARD CATEGORY:
THIS PRODUCT HAS BEEN REVIEWED ACCORDING TO THE EPA "HAZARD CATEGORIES" PROMULGATED UNDER SECTIONS 311 AND 312 OF THE SUPERFUND AMENDMENT AND REAUTHORIZATION ACT OF 1986 (SARA TITLE III) AND IS CONSIDERED, UNDER APPLICABLE DEFINITIONS, TO MEET THE FOLLOWING CATEGORIES:
NOT TO HAVE MET ANY HAZARD CATEGORY

CANADIAN REGULATIONS:

WHMIS INFORMATION:

THE CANADIAN WORKPLACE HAZARDOUS MATERIALS INFORMATION SYSTEM (WHMIS) CLASSIFICATION FOR THIS PRODUCT IS: THIS PRODUCT IS NOT A "CONTROLLED PRODUCT" UNDER WHMIS.

16. OTHER INFORMATION

FOR ADDITIONAL INFORMATION:

CONTACT:
MSDS COORDINATOR
UNIVAR USA INC.
DURING BUSINESS HOURS
PACIFIC TIME
(425) 889-3400

NOTICE:
UNIVAR USA INC ("UNIVAR"), EXPRESSLY DISCLAIMS ALL EXPRESS OR IMPLIED WARRANTIES OF MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE, WITH RESPECT TO THE PRODUCT OR INFORMATION PROVIDED HEREIN, AND SHALL UNDER NO CIRCUMSTANCES BE LIABLE FOR INCIDENTAL OR CONSEQUENTIAL DAMAGES.

DO NOT USE INGREDIENT INFORMATION AND/OR PERCENTAGES IN THIS MSDS AS A PRODUCT SPECIFICATION. FOR PRODUCT SPECIFICATION INFORMATION REFER TO A PRODUCT SPECIFICATION SHEET AND/OR A CERTIFICATE OF ANALYSIS. THESE CAN BE OBTAINED FROM YOUR LOCAL UNIVAR SALES OFFICE.

ALL INFORMATION APPEARING HEREIN IS BASED UPON DATA OBTAINED FROM THE MANUFACTURER AND/OR RECOGNIZED TECHNICAL SOURCES. WHILE THE INFORMATION IS BELIEVED TO BE ACCURATE, UNIVAR MAKES NO REPRESENTATIONS AS TO ITS ACCURACY OR SUFFICIENCY. CONDITIONS OF USE ARE BEYOND UNIVARS CONTROL AND THEREFORE USERS ARE RESPONSIBLE TO VERIFY THIS DATA UNDER THEIR OWN OPERATING CONDITIONS TO DETERMINE WHETHER THE PRODUCT IS SUITABLE FOR THEIR PARTICULAR PURPOSES AND THEY ASSUME ALL RISKS OF THEIR USE, HANDLING, AND DISPOSAL OF THE PRODUCT, OR FROM THE PUBLICATION OR USE OF, OR RELIANCE UPON, INFORMATION CONTAINED HEREIN. THIS INFORMATION RELATES ONLY TO THE PRODUCT DESIGNATED HEREIN, AND DOES NOT RELATE TO ITS USE IN COMBINATION WITH ANY OTHER MATERIAL OR IN ANY OTHER PROCESS.

FLINT HILLS RESOURCES

MATERIAL SAFETY DATA SHEET

1 CHEMICAL PRODUCT & COMPANY IDENTIFICATION

TRADE NAME(S)	**FUEL OIL NO. 2 (LOW SULFUR)**
CAS NUMBER	68476-34-6
MSDS NUMBER	5465
PRODUCT CODE	ND
SYNONYM(S)	2 OIL, NO. 2 LOW SULFUR DIESEL, NO. 2 LOW SULFUR FUEL, APPLICABLE TO ALL GRADES DESULFURIZED NO. 2 FUEL OIL DIESEL FUEL, ARCTIC DIESEL, DIESEL FUEL NO. 2, DIESEL OIL, D-GRADE FUEL OIL, RAILROAD DIESEL, VIRGIN DIESEL DK 45 HEATING OIL, PREMIUM DIESEL (LOW SULFUR) NO. 2 FUEL OIL (NO2FO) PERFORMANCE GOLD PLUS U.S. SOY FIELD DIESEL U.S. SOY PLUS DIESEL
MANUFACTURER / SUPPLIER	Flint Hills Resources, LP 2825 Suntide Road (78409) P. O. Box 2608 Corpus Christi, TX 78403

TELEPHONE NUMBERS - 24 HOUR EMERGENCY ASSISTANCE

Chemtrec	800-424-9300
Flint Hills Resources, LP	361-241-4811

TELEPHONE NUMBERS - GENERAL ASSISTANCE

8-5 (M-F, CST)	361-241-4811
8-5 (M-F, CST) MSDS Assistance	316-828-7988

2 COMPOSITION / INFORMATION ON INGREDIENTS

Ingredient Name	CAS Number	Concentration*	Exposure Limits / Health Hazards
C9-C20 HYDROCARBONS PRODUCED BY THE PROCESSING OF CRUDE OIL	68476-34-6	99 - 100 %	ND
1,2,4-TRIMETHYLBENZENE	95-63-6	0.3 - 1 %	25 ppm 8-Hour TWA (ACGIH)
BIPHENYL	92-52-4	0 - 0.75 %	0.2 ppm 8-Hour TWA (OSHA) 0.2 ppm 8-Hour TWA (ACGIH)

Ingredient Name	CAS Number	Concentration*	Exposure Limits / Health Hazards
NAPHTHALENE	91-20-3	0 - 0.3 %	10 ppm 8-Hour TWA (OSHA) 10 ppm 8-Hour TWA (ACGIH) 15 ppm 15-Min STEL (ACGIH)
XYLENES	1330-20-7	0 - 1 %	100 ppm 8-Hour TWA (OSHA) 100 ppm 8-Hour TWA (ACGIH) 150 ppm 15-Min STEL (ACGIH)
TOLUENE	108-88-3	< 0.2 %	200 ppm 8-Hour TWA (OSHA) 300 ppm CEILING (OSHA) 50 ppm 8-Hour TWA (ACGIH)
CUMENE	98-82-8	< 0.1 %	50 ppm 8-Hour TWA (OSHA) 50 ppm 8-Hour TWA (ACGIH) Skin Designation**
BENZENE	71-43-2	0 - 200 PPM	1 ppm 8-Hour TWA (OSHA) 5 ppm 15-Min STEL (OSHA) 0.5 ppm 8-Hour TWA (ACGIH) 2.5 ppm 15-Min STEL (ACGIH)

*Values do not reflect absolute minimums and maximums; these values are typical which may vary from time to time.

COMPOSITION COMMENTS

** Exposure to this chemical may add to the overall exposure, as it is readily absorbed through the skin.

This Material Safety Data Sheet is intended to communicate potential health hazards and potential physical hazards associated with the product(s) covered by this sheet, and is not intended to communicate product specification information. For product specification information, contact your Flint Hills Resources, LP representative.

3 HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

WARNING!

HEALTH HAZARDS
MAY BE IRRITATING TO THE SKIN, EYES AND RESPIRATORY TRACT
OVEREXPOSURE MAY CAUSE CNS DEPRESSION
ASPIRATION HAZARD IF SWALLOWED-CAN ENTER LUNGS AND CAUSE DAMAGE
POTENTIAL REPRODUCTIVE HAZARD
SKIN CANCER HAZARD BASED ON TESTS WITH LABORATORY ANIMALS
SEE "TOXICOLOGICAL INFORMATION" (SECTION 11) FOR MORE INFORMATION

FLAMMABILITY HAZARDS
COMBUSTIBLE
PER OSHA GUIDELINES, 29 CFR 1910.1200(c)

REACTIVITY HAZARDS
STABLE

POTENTIAL HEALTH EFFECTS, SKIN

MODERATELY IRRITATING. Repeated or prolonged skin contact may cause drying, reddening, itching and cracking.

No significant effects are expected to occur following short term exposure. Repeated or prolonged contact with large amounts of this material may result in absorption through the skin to produce toxic effects.

Contact with heated material may cause thermal burns.

POTENTIAL HEALTH EFFECTS, EYE

SLIGHTLY IRRITATING. Exposure to vapors, fumes or mists may cause irritation. May cause slight transient irritation, lacrimation (tears) and a burning sensation in the eyes. Prolonged or repeated exposure may cause irritation and conjunctivitis.

Contact with heated material may cause thermal burns, destruction of eye tissue and possible permanent injury or blindness.

POTENTIAL HEALTH EFFECTS, INHALATION

Petroleum mists at high exposure levels may be irritating to the nose, throat and lungs.

May cause central nervous system depression or effects. Symptoms may include headache, excitation, euphoria, dizziness, incoordination, drowsiness, light-headedness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest and death, depending on the concentration and duration of exposure.

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

POTENTIAL HEALTH EFFECTS, INGESTION

PRACTICALLY NON-TOXIC. Ingestion of large amounts may cause gastrointestinal disturbances. May cause irritation of the mouth, throat and gastrointestinal tract. Symptoms may include salivation, pain, nausea, vomiting and diarrhea.

Aspiration into lungs may cause chemical pneumonia and lung damage.

Exposure may also cause central nervous system symptoms similar to those listed under "Inhalation" (see Inhalation section).

Overexposure to this material may cause systemic damage including target organ effects listed under "Toxicological Information" (Section 11).

Other specific symptoms of exposure are listed under "Toxicological Information" (Section 11).

4 FIRST AID MEASURES

SKIN

Immediately wash skin with plenty of soap and water while removing contaminated clothing and shoes. GET IMMEDIATE MEDICAL ATTENTION.

Place contaminated clothing in closed container for storage until laundered or discarded. If clothing is to be laundered, inform person performing operation of contaminant's hazardous properties. Discard contaminated leather goods.

Flash Point	> 125 °F (> 52 °C) PENSKY-MARTENS CLOSED CUP
Autoignition Temperature	494 °F (257 °C)
Flammability Limits in Air, Lower, % by Volume	0.6 %
Flammability Limits in Air, Upper, % by Volume	7.5 %

6 ACCIDENTAL RELEASE MEASURES

EMERGENCY ACTION

Eliminate and/or shut off ignition sources and keep ignition sources out of the area. Keep unnecessary people away; isolate hazard area and deny entry. Stay upwind. Isolate for 800 meters (1/2 mile) in all directions if tank, rail car or tank truck is involved in fire. Evacuate area endangered by release as required. (See Exposure Controls/Personal Protection, Section 8.)

ENVIRONMENTAL PRECAUTIONS

Eliminate all sources of ignition. Isolate hazard area and deny entry.

If material is released to the environment, take immediate steps to stop and contain release. Caution should be exercised regarding personnel safety and exposure to the released material. Notify local authorities and the National Response Center, if required.

SPILL OR LEAK PROCEDURE

Keep unnecessary people away. Isolate area for at least 25 to 50 meters (80 to160 feet) to preserve public safety. For large spills, consider initial evacuation for at least 300 meters (1000 feet).

Keep ignition sources out of area and shut off all ignition sources. Absorb spill with inert material (e. g. dry sand or earth) then place in a chemical waste container. Large Spills: Dike far ahead of liquid spill for later disposal.

Use water spray, fog, or regular foam to reduce vapors. Stop leak when safe to do so.

See Exposure Controls/Personal Protection (Section 8).

7 HANDLING & STORAGE

HANDLING

Ground lines and equipment used during transfer to reduce the possibility of static spark-initiated fire or explosion. Use non-sparking tools. Do not cut, grind, drill, weld or reuse containers unless adequate precautions are taken against these hazards.

Do not eat, drink or smoke in areas of use or storage.

STORAGE

Store in tightly closed containers in a cool, dry, isolated, well-ventilated area away from heat, sources of ignition and incompatibles. Avoid contact with strong oxidizers.

Empty containers may contain material residue. Do not reuse without adequate precautions.

Do not eat, drink or smoke in areas of use or storage.

8 EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS

Ventilation and other forms of engineering controls are the preferred means for controlling exposures.

EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Keep away from eyes. Eye contact can be avoided by using chemical safety glasses, goggles, and/or face shield. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Avoid skin contact with this material. Use appropriate chemical protective gloves when handling.

Good personal hygiene practices such as properly handling contaminated clothing, using wash facilities before entering public areas and restricting eating, drinking and smoking to designated areas are essential for preventing personal chemical contamination.

RESPIRATORY PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

A NIOSH approved air purifying respirator with an appropriate cartridge or canister, such as an organic vapor cartridge, may be used in circumstances where airborne concentrations may exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure air supplied respirator if there is any potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection.

9 PHYSICAL & CHEMICAL PROPERTIES

ODOR AND APPEARANCE

CRYSTAL CLEAR TO PALE YELLOW OR GREEN COLORED LIQUID WITH HYDROCARBON ODOR; FOR TAX EXEMPT PURPOSES, THIS FUEL MAY CONTAIN RED DYE

Boiling Point	325 - 700 °F (163-371 °C)

EYE PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Keep away from eyes. Eye contact can be avoided by using chemical safety glasses, goggles, and/or face shield. Have eye washing facilities readily available where eye contact can occur.

SKIN PROTECTION: PERSONAL PROTECTION EQUIPMENT (PPE)

Avoid skin contact with this material. Use appropriate chemical protective gloves when handling.

Good personal hygiene practices such as properly handling contaminated clothing, using wash facilities before entering public areas and restricting eating, drinking and smoking to designated areas are essential for preventing personal chemical contamination.

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9 PHYSICAL & CHEMICAL PROPERTIES

ODOR AND APPEARANCE

CRYSTAL CLEAR TO PALE YELLOW OR GREEN COLORED LIQUID WITH HYDROCARBON ODOR; FOR TAX EXEMPT PURPOSES, THIS FUEL MAY CONTAIN RED DYE

Boiling Point	325 - 700 °F (163-371 °C)
Specific Gravity	0.835 - 0.9 at 60/60 °F (15.6/15.6 °C)
Melting Point	-20 °F (-29 °C)
Percent Volatile	100 %
Vapor Pressure	2.6 mmHg at 122 °F (50 °C)
Vapor Density	8 (Air=1)
Bulk Density	6.96 - 7.51 lb./gal. at 60/60 °F (15.6/15.6 °C)
Solubility in Water	INSOLUBLE
Octanol/Water Partn	ND
Volatile Organic	ND
Pour Point	-20 to 10 °F (-29 to -12 °C) [ARCTIC DIESEL < -50 °F (< -45 °C)]
pH Value	ND
Freezing Point	ND
Viscosity	32.6 - 40.1 SUS at 100 °F (38 °C)
Evaporation Rate	ND
Molecular Formula	ND
Molecular Weight	ND
Chemical Family	HYDROCARBON MIXTURE
Odor Threshold	ND

10 STABILITY & REACTIVITY

STABILITY/INCOMPATIBILITY

Incompatible with oxidizing agents. See precautions under Handling & Storage (Section 7).

HAZARDOUS REACTIONS/DECOMPOSITION PRODUCTS

Combustion may produce COx, NOx, SOx, reactive hydrocarbons, irritating vapors, and other decomposition products in the case of incomplete combustion.

11 TOXICOLOGICAL INFORMATION

ROUTES OF EXPOSURE

Inhalation, ingestion, skin and eye contact.

TOXICOLOGICAL DATA

Acute or chronic overexposure to this material or its components may cause systemic toxicity, including adverse effects to the following: liver and kidney.

Exposure to components of this material may cause the following specific symptoms, depending on the concentration and duration of exposure: irritation of the hair follicles and blockage of the sebaceous glands.

Short-term exposure to diesel emissions can cause lung inflammation and other illnesses, while exacerbating existing allergies and asthma symptoms.

This material may contain benzene. Acute benzene poisoning causes central nervous system depression. Chronic exposure affects the hematopoietic system causing blood disorders including anemia and pancytopenia.

This material may contain naphthalene. Naphthalene can be harmful by any route of exposure. Humans may be more sensitive to naphthalene than laboratory animals. Naphthalene can cause skin and eye irritation and acute central nervous system effects. It can also cause blood effects, including hemolytic and aplastic anemia, cataracts, liver and kidney damage. Following maternal exposure, naphthalene has also been reported to cause fetal blood system, liver and possibly eye damage. In a 2-year lifetime inhalation bioassay, female mice showed a significantly increased incidence of pulmonary alveolar and bronchiolar adenomas. On this basis, NTP has determined that there is some evidence of naphthalene carcinogenicity in female mice. Both male and female mice showed evidence of chronic inflammation and its associated response in the respiratory system.

This material contains toluene. Toluene is an eye, skin, and respiratory tract irritant as well as a central nervous system depressant. Overexposure may result in damage to the brain, liver, kidney, cardiovascular, respiratory and neurological systems. Prolonged and repeated exposure may result in behavioral effects, anemia, and color vision abnormalities, blindness and hearing loss. It has been shown to produce reproductive effects in both humans and laboratory animals. It has also been reported to produce cardiac sensitization. Repeated or prolonged exposure to toluene may result in skin absorption, which may result in toxic effects. IARC has determined that there is inadequate evidence for the carcinogenicity of toluene in humans and experimental animals (IARC Class 3).

Reports have associated repeated and prolonged occupational overexposure to solvents with permanent brain and nervous system damage (sometimes referred to as solvent or painter's syndrome). Intentional misuse by deliberately concentrating and inhaling this product may be harmful or fatal.

WARNING: The use of any hydrocarbon fuel in an area without adequate ventilation may result in hazardous levels of combustion products and inadequate oxygen levels.

This material has not been tested as a whole for all potential health effects. Use caution in handling to avoid exposure.

CARCINOGENICITY

IARC has determined that there is limited evidence for the carcinogenicity of fuel oil #2 in experimental animals and inadequate evidence in humans.

Long-term exposure to diesel exhaust may pose a lung cancer hazard, as well as damage the lung in other ways depending on exposure.

Lifetime exposure to whole diesel exhaust has been shown to cause cancer in laboratory animals. NIOSH recommends that whole diesel exhaust be regarded as a potential occupational carcinogen.

This material may contain naphthalene. IARC has determined that there is sufficient evidence for the carcinogenicity of naphthalene in experimental animals and inadequate evidence for the carcinogenicity of naphthalene in humans. (IARC Class 2B)

This material may contain benzene. Benzene is carcinogenic to laboratory animals when given by intubation or by inhalation. There is an association between occupational exposure to benzene and human leukemia. Carcinogenic determinations: IARC human positive and animal suspected carcinogen (IARC Class 1); NTP known carcinogen; ACGIH suspected carcinogen; OSHA carcinogen. (IARC Class 1)

TERATOGENICITY, MUTAGENICITY, OTHER REPRODUCTIVE EFFECTS

This material may contain benzene. Mutagenic and clastogenic in mammalian and non-mammalian test systems. Reproductive or developmental toxicant only at doses that are maternally toxic, based on tests with animals.

This material contains components which may cause adverse reproductive and/or developmental effects.

Pregnant women may be at an increased risk from exposure. Consumption of alcoholic beverages may enhance toxic effects.

PRE-EXISTING CONDITIONS AGGRAVATED BY EXPOSURE

Pre-existing medical conditions which may be aggravated by exposure include disorders of the skin, eye and respiratory system.

12 ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION

ND

13 DISPOSAL CONSIDERATIONS

WASTE DISPOSAL

This material, as supplied, when discarded or disposed of, is a hazardous waste according to Federal Regulations due to the material exhibiting a hazardous characteristic under Subpart C of 40 CFR 261. Under RCRA, it is the responsibility of the user of the material to determine, at the time of disposal, whether the material meets RCRA criteria for hazardous waste.

The transportation, storage, treatment and disposal of RCRA waste material must be conducted in compliance with 40 CFR 262, 263, 264, 268 and 270. Disposal can occur only in properly permitted facilities. Check state and local regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Chemical additions, processing or otherwise altering this material may make the waste management information presented in this MSDS incomplete, inaccurate or otherwise inappropriate. Disposal of this material must be conducted in compliance with all federal, state and local regulations.

14 TRANSPORT INFORMATION

BILL OF LADING - BULK (U. S. DOT)

Fuel Oil (No. 2), Combustible Liquid, NA1993, PG III

BILL OF LADING - NON-BULK (U. S. DOT)

Non-Regulated

U. S. Department of Transportation (DOT) Requirements

General Transportation Information for Bulk Shipments

Proper Shipping Name	Fuel Oil (No. 2)		
Hazard Class	Combustible Liquid	UN/NA Code	NA1993
Packaging Group	PG III		
Labels Required	None		
Placards Required	Combustible Liquid, NA1993		
Reportable Quantity	See Regulatory Information (Section 15)		

General Transportation Information for Non-Bulk Shipments

Proper Shipping Name	Non-Regulated		
Hazard Class	NA	UN/NA Code	NA
Packaging Group	NA		
Labels Required	NA		
Placards Required	NA		
Reportable Quantity	NA		

COMMENTS

Non-bulk shipments of this material are non-regulated for domestic ground transportation when they meet the requirements of 49 CFR 173.150(f).

The above description may not cover shipping in all cases, please consult 49 CFR 100-185 for specific shipping information.

15 REGULATORY INFORMATION

FEDERAL REGULATIONS

All ingredients are on the TSCA inventory, or are not required to be listed on the TSCA inventory.

Consult OSHA's Benzene standard 29 CFR 1910.1028 for provisions on air monitoring, employee training, medical monitoring, etc.

A release of this material, as supplied, may be exempt from reporting under the Comprehensive Environmental Response Compensation and Liability Act (CERCLA - 40 CFR 302) by the petroleum exclusion. Releases may be reportable to the National Response Center (800-424-8802) under the Clean Water Act, 33 U.S.C. 1321(b)(3) and (5).

This material does not contain toxic chemicals (in excess of the applicable de minimis concentration) that are subject to the annual toxic chemical release reporting requirements of the Superfund Amendments and Reauthorization Act (SARA) Section 313 (40 CFR 372).

This material contains one or more substances listed as hazardous air pollutants under Section 112 of the Clean Air Act.

Check local, regional or state/provincial regulations for any additional requirements as these may be more restrictive than federal laws and regulations. Failure to report may result in substantial civil and criminal penalties.

STATE REGULATIONS

WARNING: This material contains a chemical known to the State of California to cause cancer and birth defects or other reproductive harm.

SARA 311/312 HAZARD CATEGORIES

Immediate Hazard:	X	Delayed Hazard:	X	Fire Hazard:	X	Pressure Hazard:	-
Reactivity Hazard:	-						

NFPA RATINGS

Health	1	Flammability	2	Reactivity	0	Special Hazards	-

HMIS RATINGS

Health	2*	Flammability	2	Reactivity	0

16 OTHER INFORMATION

DISCLAIMER

NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, an MSDS may not be used as a commercial specification sheet of manufacturer or seller, and no warranty or representation, expressed or implied, is made as to the accuracy or comprehensiveness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended practices, or from any hazards inherent in the nature of the product.

Current Revision Date 18-Jul-2003 Replaces Sheet Dated 25-Jun-2002

Completed By Flint Hills Resources Operations EH&S

Material Safety Data Sheet

UNLEADED PREMIUM GASOLINE (Including Reformulated)

February 26, 1999

PHILLIPS 66 COMPANY
A Division of Phillips Petroleum Company
Bartlesville, Oklahoma 74004

PHONE NUMBERS
Emergency: (918) 661-8118
General MSDS Information: (918) 661-3709
For Additional MSDSs: (918) 661-3709

A. Product Identification

Synonyms: Motor Fuel; Petrol
Chemical Name: Mixture
Chemical Family: Hydrocarbon
Chemical Formula: Mixture
CAS Reg. No.: Mixture
Product No.: 1013972(13050); (13051); 1014021(13750) (13751); (13080); (13081) (13180); (13181); 1014006(13170) (13171); (13280); (13281) 1014011(13270); (13271); (13380) (13381); 1014015(13370); (13371)

Product and/or Components Entered on EPA's TSCA Inventory: YES

This product is in U.S. commerce, and is listed in the Toxic Substances Control Act (TSCA) Inventory of Chemicals; hence, it may be subject to applicable TSCA provisions and restrictions.

B. Components

Ingredients	CAS Number	% By Wt.	OSHA PEL	ACGIH TLV
Gasoline, including:	8006-61-9	100	NE	300 ppm
Benzene	71-43-2	<5	10 ppm(1)	0.5 ppm
Toluene	108-88-3	1-35	200 ppm	50 ppm
Ethyl Benzene	100-41-4	0-4	100 ppm	100 ppm
Xylenes (mixed isomers)	1330-20-7	1-10	100 ppm	100 ppm
Methyl-tert-Butyl Ether	1634-04-4	<16	NE	40 ppm
1,2,4-Trimethyl Benzene	95-63-6	0.5-2.5	NE	25 ppm(2)
Isopentane	78-78-4	<20	NE	600 ppm
n-Butane	106-97-8	<10	NE	800 ppm

See Section B.

Acute Effects of Overexposure:

Eye: May cause mild irritation, with stinging and redness of the eyes.

Skin: May cause mild irritation. Repeated or prolonged contact may cause defatting of the skin, resulting in dermatitis.

Inhalation: May cause headache, nausea, weakness, sedation, and unconsciousness at high concentrations (>300 ppm).

Ingestion: May be slightly irritating to intestines. May cause nausea. If swallowed, may be aspirated resulting in inflammation and possible fluid accumulation in the lungs. The oral LD50, rat, for unleaded gasoline is 18.8 ml/kg.

Subchronic and Chronic Effects of Overexposure:

Unleaded gasoline has produced kidney cancer in male rats only. No comparable kidney disease is known to occur in humans.

Gasolines generally contain benzene which has been designated a carcinogen by the National Toxicology Program (NTP), the International Agency for Research on Cancer (IARC), and the Occupational Safety and Health Administration (OSHA). Benzene may produce blood changes which include reduced platelets, red blood cells, and white blood cells. Also, aplastic anemia, and acute nonlymphotic leukemia. Benzene has produced fetal death in laboratory animals and caused chromosome changes in humans and mutation changes in cells of other organisms.

Isopentane did not produce kidney damage in a subchronic oral laboratory study or in a subchronic inhalation exposure to 4500 ppm isopentane alone or 1000 ppm of a 50/50 mixture of isobutane and isopentane.

Exposure of pregnant rats during gestation to toluene at levels 250 ppm and higher produced some maternal toxicity and embryo/fetotoxicity. A lifetime inhalation study in rats did not show any toxic effects even at the high dose of 300 ppm.

Behavioural signs of hearing loss were observed in rats exposed to toluene subchronically at levels of 1000 ppm or more. Comparable effects have not been reported in humans.

Inhalation studies were conducted with experimental animals at dose levels that caused signs of toxicity which included central nervous system depression, decreased body weight, increased mortality, and decreased survival time. Methyl-tert-Butyl Ether (MTBE) did not cause neurotoxicity at doses that caused central nervous system depression nor reproductive toxicity at doses that caused parental toxicity. Developmental effects (fetal toxicity) were associated with parental toxicity. Increased incidence of carcinogenic effects (kidneys, testicles, liver) were observed at otherwise toxic concentrations in rodents.

Ethylbenzene has caused fetotoxicity and liver and kidney injury in laboratory animals. No comparable injury has been reported in humans.

Ethylbenzene is a recognized animal carcinogen by the National

Kidney Toxin; Liver Toxin

First Aid and Emergency Procedures:

Eye: Flush eyes with running water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Skin: Wash skin with soap and water for at least fifteen minutes. If irritation or adverse symptoms develop, seek medical attention.

Inhalation: Remove from exposure. If breathing is difficult, give oxygen. If breathing ceases, administer artificial respiration followed by oxygen. Seek immediate medical attention.

Ingestion: Do not induce vomiting. Seek immediate medical attention.

Note to Physician: Gastric lavage using a cuffed endotracheal tube may be performed at your discretion.

G. Physical Data

Appearance:	Clear to pink liquid
Odor:	Mild
Boiling Point:	75-437F (24-225C)
Vapor Pressure:	7.8-15.0 psia @ 100F (38C)
Vapor Density (Air = 1):	3-4
Solubility in Water:	Negligible
Specific Gravity (H2O = 1):	0.72-0.76 @ 60/60F (16/16C)
Percent Volatile by Volume:	100
Evaporation Rate (Butyl Acetate = 1):	> 1
Viscosity:	Not Established

H. Fire and Explosion Data

Flash Point (Method Used):	<-35F (-37C) (Estimated)
Flammable Limits (% by Volume in Air):	LEL - 1.5 UEL - 7.6
Fire Extinguishing Media:	Dry chemical, foam or carbon dioxide (CO2)
Special Fire Fighting Procedures:	Evacuate area of all unnecessary personnel. Wear appropriate safety equipment for fire conditions including NIOSH self-contained breathing apparatus (SCBA). Shut off source, if possible. Water fog or spray may be used to cool exposed containers and equipment. Do not spray water directly on fire product will float and could be reignited on surface of water.
Fire and Explosion Hazards:	Carbon oxides and various hydrocarbons formed when burned. Highly flammable vapors which are heavier than air may accumulate in low areas and/or spread along ground away from handling site.

N. Additional Comments

SARA 313

This product contains the following chemical or chemicals 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. (See Section B).

Benzene
Toluene
Methyl-tert-butyl ether
Ethylbenzene
Xylenes (mixed isomers)
1,2,4-Trimethyl Benzene

NFPA 704 Hazard Codes - - - - - - - - Signals

		Least - 0
Health	: 1	Slight - 1
Flammability	: 3	Moderate - 2
Reactivity	: 0	High - 3
Special Haz.	: -	Extreme - 4