

MATERIAL SAFETY DATA SHEET

SECTION 1 ♦ PRODUCT AND COMPANY IDENTIFICATION

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FOR EMERGENCY SOURCE INFORMATION CONTACT:

- (918) 493 - 5100
- CHEMTREC: (800) 424-9300 (24 hour contact)
- CANUTEC: (613) 996-6666
- SETIQ: 91-800-00214

TRADE NAMES/SYNONYMS: Jet Fuel Grade JP4 Military Jet

CHEMICAL FAMILY: Naphtha Based Petroleum, Kerosene

EPL Code: 58

This material safety data sheet represents the composite characteristics and properties of fungible petroleum hydrocarbons and other related substances transported by explorer pipeline company. The information presented was compiled from one or more product shipper sources and is intended to provide health and safety guidance for these fungible products. Individual shipper and manufacturer MSDSs are available at Explorer Pipeline Company's, Tulsa, Oklahoma, offices.

SECTION 2 * HAZARDS IDENTIFICATION

EMERGENCY OVERVIEW

Danger Extremely Flammable!!

- Clear, colorless liquid with faint hydrocarbon odor;
- Harmful or fatal if swallowed, inhaled or absorbed through skin.
- May cause CNS depression.
- Can produce skin irritation upon prolonged or repeated contact.
- Keep away from heat, sparks and open flame;
- Wash thoroughly after handling;
- Contains petroleum distillates! If swallowed, do not induce vomiting since aspiration into the lungs will cause chemical pneumonia;
- Avoid breathing vapors or mist;
- Use only with adequate ventilation; and
- Obtain prompt medical attention. Keep Out of Reach of Children!

SECTION 3 ▼ COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENTAGE (%)
Hydrotreated light naphtha, petroleum and Hydrotreated heavy naphtha, petroleum	64742-49-0 64742-47-8	100%
Antioxidant, anti-static, metal deactivator, and corrosion inhibitor additives	As approved	Added at low ppm levels to meet specifications
Ethylene glycol monomethyl ether	109-86-4	0.10 to 0.15. % by volume normally added as an anti-icing agent as required by military specifications.
May contain benzene	71-43-2	<2.5%

ACUTE

SUMMARY OF ACUTE HAZARDS: If this material is vomited and breathed into the lungs, chemical pneumonia can result. Repeated and prolonged overexposure to vapors can cause CNS depression, coma, and respiratory arrest.

GETTING IT IN YOUR EYE...

- May cause moderate irritation, including burning sensation, redness or swelling of eyelids.

GETTING IT ON YOUR SKIN...

- No significant signs or symptoms indicative of any health hazard are expected to occur as a result of skin absorption exposure.
- Some irritation may occur.
- Headaches and nausea are also possible.
- Prolonged or repeated contact may cause skin to become dry or cracked leading to dermatitis.

SWALLOWING IT...

- May be harmful or fatal if swallowed.
- Ingestion may result in vomiting.
- Aspiration of vomitus may lead to pneumonitis

BREATHING IT...

- Irritation to the nose, throat, and respiratory tract may cause CNS depression followed by dizziness and headache. May cause liver and kidney damage.

CHRONIC

- Early to moderate CNS (Central Nervous System) depression may be evidenced by giddiness. Headache, dizziness and nausea in extreme cases. Unconsciousness and death may occur.
- Aspiration pneumonitis may be evidenced by coughing, labored breathing and cyanosis (bluish skin color): In severe cases death may occur. Kidney damage may be evidenced by changes in urine output. Urine appearance or edema (swelling from fluid retention). Liver damage may be evidenced by loss of appetite. Jaundice (yellowish skin color) and sometimes pain in the upper abdomen on the right side.
- Preexisting eye, skin, and respiratory disorders may be aggravated by exposure to this product. Impaired liver and kidney function(s) from preexisting disorders may be aggravated by exposure to this product.

CANCER, REPRODUCTIVE AND GENETIC EFFECTS

- A chronic inhalation study supported by the United States Air Force found that fully vaporized JP-4 produced lung tumors in mice at the highest concentrations tested.
- Repeated high level benzene exposure may produce injury of the blood-forming tissues causing blood abnormalities and possibly leukemia; however, exposures to such high levels are not likely to be encountered in JP-4 vapor due to the low benzene content.

See Toxicological Information (Section 11) For More Information

SECTION 4 + FIRST AID MEASURES

EMERGENCY MEDICAL TREATMENT PROCEDURES: If more than 2.0 ml per KG has been ingested and vomiting has not occurred, emesis should be induced with medical supervision. Keep victim's head below hips to prevent aspiration. If symptoms such as loss of gag reflex, convulsions or unconsciousness occur before emesis, gastric lavage using a cuffed endotracheal tube should be considered.

EYES: If splashed into the eyes, flush with clear water for 15 minutes or until irritation subsides. If irritation persists, call a physician.

SKIN: In case of skin contact, remove any contaminated clothing and wash skin thoroughly with soap and water.

INGESTION: If ingested, DO NOT induce vomiting; call a physician immediately

INHALATION: If overcome by vapor, remove from exposure and call a physician immediately. If breathing is irregular or has stopped, start resuscitation, administer oxygen, if available.

NOTE TO PHYSICIAN: TREAT SYMPTOMATICALLY AND SUPPORTIVELY

SECTION 5 ⌘ FIRE FIGHTING MEASURES

- Extremely flammable vapors may be generated by material, when mixed with air and exposed to ignition source; vapors can burn in open or explode if confined.
- Vapors may be heavier than air, and may travel long distances along ground before igniting/flashing back to vapor source.
- Clothing, rags or similar organic material contaminated with this product and stored in a closed space may undergo spontaneous combustion; transfer to and from commonly grounded containers.

FLASH POINT:(Method Used) <10 °F

FLAMMABLE LIMITS:

LEL: 0.9%

UEL: 8.0%

AUTOIGNITION TEMPERATURE: 410-465 °F

EXTINGUISHING MEDIA: Dry Chemical, Foam, CO₂, and Water Fog

HAZARDOUS REACTIONS/DECOMPOSITION: Incomplete combustion generates highly poisonous carbon monoxide and perhaps other toxic gases.

SPECIAL INSTRUCTIONS: Do not enter fire area without proper protection. Decomposition products possible. Fight fire from safe distance/protected location. Heat may build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Do not use solid water stream -- may spread fire. Apply water spray/fog for cooling. Notify authorities if liquid enters sewer/public waters. Unignited vapors are extremely hazardous to health.

SECTION 6 ❖ ACCIDENTAL RELEASE MEASURES

- Shut off and eliminate all ignition sources.
- Keep people away.
- Recover free product.
- Add sand, earth or other suitable absorbent to spill area.
- Minimize breathing vapors.
- Minimize skin contact.
- Ventilate confined spaces.
- Open all windows and doors.
- Keep product out of sewers and watercourses by diking or impounding.
- Advise authorities if product has entered or may enter sewers, watercourses, or extensive land areas.
- Assure conformity with applicable governmental regulations.
- Continue to observe precautions for volatile, flammable vapors from absorbed material.

SECTION 7 ✂ HANDLING AND STORAGE

Storage: Protect against physical damage. Separate from oxidizing materials. Store in cool, well ventilated area of non-combustible construction away from possible sources of ignition.

SECTION 8 # EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: Both local exhaust and general room ventilation are usually required to meet recommended exposure standard(s).

OTHER HYGIENIC AND WORK PRACTICES: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential direct exposure. Use good personal hygiene practices. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove soiled clothing/wash thoroughly before reuse. Shower after work using plenty of soap and water.

EXPOSURE LIMITS			
OSHA PEL		ACGIH TLV (2005)	
BENZENE			
TWA	STEL	TWA	STEL
1 ppm	5 ppm	0.5 ppm	2.5 ppm

PERSONAL PROTECTIVE EQUIPMENT

- **EYES:** Eye protection such as chemical splash goggles and/or face shield must be worn when possibility exists for eye contact due to splashing or spraying liquid, airborne particles, or vapor. Contact lenses should not be worn.
- **SKIN:** When skin contact is possible, protective clothing including gloves, apron, sleeves, boots, head and face protection should be worn. This equipment must be cleaned thoroughly and/or discarded after use.
- **RESPIRATORY PROTECTION:** If exposure may or does exceed occupational exposure limits use a NIOSH-approved respirator to prevent overexposure. In accord with 1910.134 use either a full-face, atmosphere-supplying respirator or air-purifying respirator for organic vapors.

SECTION 9 ⚡ PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 MM HG): 130-518 °F	PERCENT VOLATILE BY VOLUME: 100%
SPECIFIC GRAVITY (H₂O = 1 AT 39.2 °F): 0.75-0.80	VISCOSITY UNITS, TEMP: 1 cSt @ 20°C
FREEZING POINT: -72°F	VAPOR DENSITY (AIR =1): 7.5
STABILITY: Stable	HAZARDOUS POLYMERIZATION: Not Expected to Occur
VAPOR PRESSURE AT 100°F: <80 mm Hg 2-3 psi	SOLUBILITY IN WATER: Negligible
APPEARANCE AND ODOR: Clear, colorless liquid with faint hydrocarbon odor.	

SECTION 10 ⚡ STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable under normal temperatures and pressures
CONDITIONS TO AVOID: Heat, sparks, open flame, strong oxidizing conditions.
OTHER PHYSICAL AND CHEMICAL PROPERTIES: No data available
MATERIALS TO AVOID: Strong oxidizing agents, such as oxygen, chlorine, and hypochlorites.
HAZARDOUS POLYMERIZATION: Has not been reported

SECTION 11 ☠ TOXICOLOGICAL INFORMATION

The variable composition makes it impossible to set a specific exposure limit for all compositions of this material. Specific exposure limits for potential components such as benzene should be applied based on air monitoring to assure employees are not exposed to excessive vapor levels of components individually or collectively.

BENZENE

Benzene is known to be a human carcinogen based on sufficient evidence in humans. Case reports and case series have reported leukemia (mostly acute myelogenous leukemia) in individuals exposed to benzene. The strongest epidemiological evidence that benzene causes cancer is from several cohort studies in various industries and geographical locations, which found that occupational exposure to benzene increased the risk of mortality from leukemia.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD _{50(oral)}	Mouse	4700 mg/kg	LC _{50(inh)}	Mouse	9980 ppm	TD _{LO(oral)}	Human	50 mg/kg

CARCINOGENICITY

IARC	Sufficient evidence in animals	Sufficient evidence in humans	Group 1: classifiable as a human carcinogen
NTP	Carcinogen		
California (Prop 65): Listed as carcinogen	NIOSH: Potential Occupational Carcinogen	ACGIH: A1 - Confirmed human carcinogen	OSHA: Select Carcinogen

MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS

Repeated or prolonged breathing of benzene vapor has been associated with the development of chromosomal damage in experimental animals and various blood diseases in humans ranging from aplastic anemia to leukemia (a form of cancer). All of these diseases can be fatal. In some individuals, benzene exposure can sensitize cardiac tissue to epinephrine which may precipitate fatal ventricular fibrillation.
 No birth defects have been shown to occur in pregnant laboratory animals exposed to doses not toxic to the mother.

SECTION 12 * ECOLOGICAL INFORMATION

ACUTE EFFECTS: No data available on product, however Benzene is considered moderately toxicity to aquatic life. Insufficient data are available to evaluate or predict the short-term effects to birds or land animals.
CHRONIC EFFECTS: No data available on product, however Benzene is considered moderately toxicity to aquatic life. Insufficient data are available to evaluate or predict the long-term effects to birds or land animals.
DISTRIBUTION AND PERSISTENCE IN THE ENVIRONMENT: No Data available.

SECTION 13 † DISPOSAL CONSIDERATIONS

Avoid waste contact/breathing harmful vapors. Contaminated product/soil/water may be RCRA/OSHA hazardous waste due to potential for fire/hazard.

SECTION 14 ★ TRANSPORTATION INFORMATION

Not Meant To Be All Inclusive - Check Local, State, And Federal Laws And Regulations

Agency	Shipping Name	Packing Group	Hazard Class	UN/NA #
U.S. DOT	Fuel, Aviation, Turbine Engine	I, II or III	Flammable Liquid	UN 1863

SECTION 15 ∩ REGULATORY INFORMATION

CERCLA RQ's (40 CFR Part 302)	Benzene – 10 pounds
RCRA	Benzene - U019
SARA (40 CFR Part 355) TPQ's	None of the ingredients are listed
SARA Title III Section 313	Benzene listed
California's Prop 65	Benzene listed
OSHA	Benzene is listed as hazardous under 29 CFR 1910.1200

SECTION 16 ☼ OTHER INFORMATION

NFPA 704 LABEL:		HMIS LABEL	1-4-0
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MSDS REVISIONS: Change in Format and update of Information

MSDS CREATION DATE: July 1997 **REVISION #1:** 01/03/06

DISCLAIMER

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MSDS DEVELOPER:
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