

MATERIAL SAFETY DATA SHEET

SECTION 1 ♦ PRODUCT AND COMPANY IDENTIFICATION

Explorer Pipeline Company
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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:

Methyl Tertiary Butyl Ether, Methyl Ether, Butyl Ether, or MTBE

CHEMICAL FAMILY: Alkyl Ethyl

EPL Code: 17

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 LIQUID

- Clear, colorless liquid with ether-like odor;
- Eye and mucous membrane irritant - effects central Nervous system - harmful or fatal if swallowed - aspiration hazard;
- High fire hazard. Keep away from heat, spark, open flame, and other ignition sources;
- Contact may cause eye, skin and mucous membrane irritation. Avoid prolonged breathing of vapors or mists;
- Inhalation may cause irritation, anesthetic effects (dizziness, nausea, headache, intoxication), and respiratory system effects;
- If ingested, do NOT induce vomiting, as this may cause chemical pneumonia (fluid in the lungs); and
- Obtain prompt medical attention. Keep Out of Reach of Children!

SECTION 3 ▼ COMPOSITION/INFORMATION OF INGREDIENTS

INGREDIENT	CAS NUMBER	PERCENTAGE (%)
Methyl Tertiary Butyl Ether	1634-04-4	97+%

ACUTE

GETTING IT IN YOUR EYE...

- May cause minor eye irritation.

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.
- May produce skin irritation.

SWALLOWING IT...

- The major health threat of ingestion occurs from the danger of aspiration (breathing) of liquid drops into the lungs, particularly from vomiting. Aspiration may result in chemical pneumonia (fluid in the lungs), severe lung damage, respiratory failure and even death.

BREATHING IT...

- Excessive exposure may cause irritation to the nose, throat, lungs and respiratory tract. Central nervous system (brain) effects may include headache, dizziness, loss of balance and coordination, unconsciousness, coma, respiratory failure, and death.

CHRONIC

- Medical information regarding special health effects is not conclusive.

CANCER, REPRODUCTIVE AND GENETIC EFFECTS

- This product has produced cancer, developmental and systemic toxicity in laboratory animals following repeated exposure. The significance of these results to human exposures has not been determined.

See Toxicological Information (Section 11) For More Information

SECTION 4 + FIRST AID MEASURES

EYES: In case of eye contact, immediately rinse with clean water for 20-30 minutes. Retract eyelids often. Obtain emergency medical attention if pain, blinking, tears or redness persist.

SKIN: Immediately remove contaminated clothing. Wash skin thoroughly with mild soap/water. Flush with lukewarm water for 15 minutes. If sticky, use waterless cleaner first.

INGESTION: If large quantity swallowed, give lukewarm water (pint) if victim completely conscious/alert. Do not induce vomiting/risk of damage to lungs exceeds poisoning risk. Obtain emergency medical attention.

INHALATION: If overcome by exposure, remove victim to fresh air immediately. Give oxygen or artificial respiration as needed. Obtain emergency medical attention. Prompt action is essential.

NOTE TO PHYSICIAN: TREAT SYMPTOMATICALLY AND SUPPORTIVELY

SECTION 5 ⌘ FIRE FIGHTING MEASURES

Releases flammable vapors below normal ambient temperatures. When mixed with air and exposed to ignition source, vapors can burn in open or explode if confined. Flammable vapors may be heavier than air. May travel long distances along ground before igniting/flashing back to vapor source.

FLASH POINT:(Method Used) -30°F

FLAMMABLE LIMITS:
LEL: 1.0%
UEL: 8.0%

AUTOIGNITION TEMPERATURE: 797°F

EXTINGUISHING MEDIA: Dry Chemical, CO₂, Foam for Alcohols, Water spray, and fog to cool exposures

HAZARDOUS REACTIONS/DECOMPOSITION: Combustion may produce carbon monoxide, carbon dioxide, and acrid fumes. 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 fires from safe distance/protected location. Heat may build pressure/rupture closed containers, spreading fire, increasing risk of burns/injuries. Water may be ineffective due to low flash point. Even if material is water soluble, may not be practicable to extinguish fire by water dilution. Apply water spray/fog for cooling. Notify authorities if liquid enters sewer/public waters.

SECTION 6 ❖ ACCIDENTAL RELEASE MEASURES

- Flammable liquid. Release can cause fire/explosion. Liquids/vapors may ignite. Evacuate/limit access. Equip responders with proper protection. Kill all ignition sources. Stop release. Prevent flow to sewers/public waters. Notify fire/environmental authorities. Blanket with firefighting foam. Restrict water use for cleanup. Impound/recover large land spill. Soak up small spill with inert solids. Use suitable disposal containers. On water material partially soluble/may float or sink. Contain/minimize dispersion/collect. Disperse residue to reduce aquatic harm.

SECTION 7 ✂ HANDLING AND STORAGE

Prior to working with this product workers should be trained on its proper handling and storage

- Store in tightly closed/properly vented containers away from heat/sparks/open flame/strong oxidizers. Use only non-sparking tools. Store drums with bung in up position. Carefully vent internal pressure before removing closure. Containers must be grounded before transfer. Electrical equipment should conform to National Electric Code. Handle used containers with care; residue may be flammable/explosive, unless blanketed with inert gas.
- Isolate, vent, drain, wash, and purge equipment before maintenance. Remove all ignition sources, check atmosphere for explosiveness and oxygen deficiencies. Use adequate personal protective equipment. Observe precautions pertaining to confined space entry.

SECTION 8 # EXPOSURE CONTROLS / PERSONAL PROTECTION

ENGINEERING CONTROLS: No special ventilation is usually required beyond that needed for normal comfort control.

OTHER HYGIENIC AND WORK PRACTICES: Emergency eye wash fountains and safety showers should be available in the immediate vicinity of any potential 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)

METHYL TERT BUTYL ETHER

TWA	STEL	TWA	STEL
Not Applicable (N.A.)	N.A.	50 ppm	N.A.

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:** Depending on the conditions of use, protective gloves, apron, boots, head and face protection should be worn. This equipment should be cleaned thoroughly after each use.
- **RESPIRATORY PROTECTION:** No occupational exposure standards have been developed for this material. Where exposure through inhalation may occur from use, NIOSH/MSHA approved respiratory protection is recommended.

SECTION 9 ⚡ PHYSICAL AND CHEMICAL PROPERTIES

BOILING POINT (760 MM HG): 131°F	PERCENT VOLATILE BY VOLUME: 100%
SPECIFIC GRAVITY (H₂O = 1): 0.74 @ 68°F	VISCOSITY UNITS, TEMP: No Data
FREEZING POINT: -164°F	VAPOR DENSITY (AIR =1): 3.1
VAPOR PRESSURE AT 68°F: 75 mm Hg	SOLUBILITY IN WATER: Approximately 4% to 5%

APPEARANCE AND ODOR: Clear, colorless liquid with ether-like odor.

SECTION 10 ✖ STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

CONDITIONS TO AVOID: High temperature, open flame or spark.

OTHER PHYSICAL AND CHEMICAL PROPERTIES: No Data

MATERIALS TO AVOID: Strong oxidizing agents, ungrounded electrical equipment, open flames and spark.

HAZARDOUS POLYMERIZATION: Not Expected to Occur

SECTION 11 ☼ TOXICOLOGICAL INFORMATION

METHYL TERT BUTYL ETHER (MTBE)

Acute symptoms associated with human exposure to MTBE appear to be mild and transient. Breathing small amounts of MTBE for short periods may cause nose and throat irritation. In laboratory studies, rodents exposed to high doses of MTBE exhibited blood chemistry changes and liver and kidney abnormalities.

TOXICITY

Type Of Dose	Specie	Result	Type Of Dose	Specie	Result	Type Of Dose	Specie	Result
LD ₅₀ (oral)	Mouse	3,500 mg/kg	LC ₅₀ (inh)	Mouse	35,000 ppm	LD _{LO} (oral)	Human	No Data Available

CARCINOGENICITY

IARC	Sufficient evidence in animals	Inadequate evidence in humans	Group 3: Possible human carcinogen
NTP	Not identified as a Know Carcinogen or Anticipated Human Carcinogen		

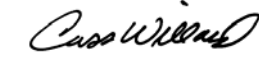
MATERIAL NAME: MTBE				MSDS # EPL-9	
California (Prop 65): Listed as carcinogen		NIOSH: Not Listed		ACGIH: A3 – Confirmed Animal	
OSHA: not classifiable as a human carcinogen					
MUTAGENICITY, TERATOGENICITY AND REPRODUCTIVE EFFECTS					
In laboratory studies, MTBE vapor exposure at the high dose concentration was associated with an increased incidence of liver tumors in female mice. Also, at high dose concentration exposures, MTBE was associated with an increased incidence of kidney and testicular (Leydig cell) tumors in male rats. There is no evidence that MTBE causes cancer in humans.					
SECTION 12 * ECOLOGICAL INFORMATION					
ACUTE EFFECTS: MTBE 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: MTBE 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: MTBE evaporates when exposed to air. It dissolves when mixed with water. Most direct releases of MTBE to the environment are to air. MTBE also evaporates from water and soil exposed to air. Once in air, it is expected to break down to other chemicals. Because it is a liquid that does not bind well to soil, MTBE that makes its way into the ground can move through the ground and enter groundwater. Plants and animals are not likely to store methyl tertiary-butyl ether..					
SECTION 13 † DISPOSAL CONSIDERATIONS					
Contaminated product/soil/water may be RCRA/OSHA hazardous waste due to low flash point. Use registered transporters. Dilute aqueous waste may biodegrade.					
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	Methyl tert-butyl ether	II	Flammable Liquid	UN 2398	
SECTION 15 ∩ REGULATORY INFORMATION					
CERCLA RQ's (40 CFR Part 302)		MTBE - 1,000 pounds			
RCRA		Not Listed			
SARA (40 CFR Part 355) TPQ's		None of the ingredients are listed			
SARA Title III Section 313		All ingredients listed			
California's Prop 65		All ingredients listed			
OSHA		All ingredients are listed as hazardous under 29 CFR 1910.1200			
SECTION 16 ⚙ OTHER INFORMATION					
NFPA 704 LABEL:			HMIS LABEL		
			1-4-0		
MSDS REVISIONS: Change in Format and update of Information					
MSDS CREATION DATE: July 1997			REVISION #1: 01/03/06		

DISCLAIMER

The information in this MSDS was obtained from sources which we believe are reliable. **HOWEVER, THE INFORMATION IS PROVIDED WITHOUT ANY WARRANTY, EXPRESS OR IMPLIED, REGARDING ITS ACCURACY.** Some conditions or methods of handling, storage, use and disposal of the product are beyond our control and may be beyond our knowledge. **FOR THIS AND OTHER REASONS, WE DO NOT ASSUME RESPONSIBILITY AND EXPRESSLY DISCLAIM LIABILITY FOR LOSS, DAMAGE OR EXPENSE ARISING OUT OR IN ANY WAY CONNECTED WITH THE HANDLING, STORAGE, USE OR DISPOSAL OF THE PRODUCT.** All product measurements such as flash point, *etc.* are considered approximate values. All data provided by Explorer Pipeline Company.

This MSDS was prepared and is to be used only for this product. If the product is used as a component in another product, such as refined petroleum hydrocarbon mixtures, this MSDS information may not be applicable.

MSDS DEVELOPER:

A handwritten signature in black ink that reads "Cass Willard".

Cass Willard, CIH

DATE: 01/03/06