



FRANCIS DRILLING FLUIDS, LTD.

MATERIAL SAFETY DATA SHEET

I. PRODUCT IDENTIFICATION

Trade Name(s): Gasoline, Unleaded

Generic Name(s):

Chemical Name(s):

Francis Drilling Fluids, LTD.
P.O. Box 1694
Crowley, LA 70527-1694

Emergency/Telephone No.: 800-960-6610
337-783-8685
Hazardous Materials No.: 800-255-3924
Poison Control Center No.: 800-256-9822

II. HAZARDOUS INGREDIENTS

Ingredient	CAS No.	%	Hazard
Gasoline including:		100	
Benzene	71-43-2	0.1 - 4.9	OSHA Pel - 1ppm, 8hr. TWA 5ppm, STEL, ACGIH TLV - 10ppm, A@, 32 mg/m3, A2, 8hr TWA, 0.3ppm, 0.96 mg/mg, 8hr. TWA, Skin A1, AEL (Dupont) - 1ppm, 8&12hr. TWA, 5ppm, 15 minute TWA
Ethyl benzene	100-41-4	2	OSHA Pel-100ppm, 435 mg/m3, 8hr. TWA ACGIH TLV - 100ppm, 434 mg/m3, 8 hr. TWA, STEL 125 ppm, 543 mg/m3 AEL (Dupont) None established
Cumene	98-82-8	1	OSHA Pel - 50ppm, 245 mg/m3, 8hr. TWA, skin ACGIH TLV - 50ppm 246 mg/mg, 8hr. TWA, skin AEL (Dupont) None established
Pseudocumene	95-63-6	2	OSHA Pel- 25ppm, 125 mg/m3, 8 hr. TWA ACGIH TLV - 25 ppm, 123 mg/m3, 8 hr. TWA AEL (Dupont) None established
Xylenes	1330-20-7	~ 12	OSHA Pel- 100ppm, 435 mg/m3, 8 hr. TWA ACGIH TLV- 100ppm, 434 mg/m3, 8 hr. TWA, STEL 150ppm, 651 mg/m3 AEL (Dupont) 100ppm, 8hr. TWA 150ppm, 15 minute TWA
Toluene	108-88-3	~15	OSHA Pel-200ppm, 8 hr. TWA 300ppm, Ceiling, 500ppm-10 min. MAX. ACGIH TLV- 50ppm, 188 mg/m3, 8 hr. TWA, Skin AEL (Dupont) 50ppm, 8 & 12 hr. TWA
MTBE(Methyl Tertiary Butyl Ether)	1634-04-4	0 - 17.5	OSHA Pel- None established ACGIH TLV- 40ppm, 144 mg/m3, 8 hr. TWA AEL (Dupont) None Established WEEL (AIHA) - 100 ppm, 8 hr. TWA

III. NFPA/HMIS HAZARD IDENTIFICATION SYSTEM

0=LEAST 1=SLIGHT 2=MODERATE 3=HIGH 4 =EXTREME

Health: 1

Fire: 4

Reactivity: 0

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IV. PHYSICAL DATA

Boiling Point (°F): 85-437 F (29-225 C)	Specific Gravity (H ₂ O=1): 0.7 - 0.77
Vapor Pressure (mm. Hg): 200-475 mm hg @ 68 F (20C)	Melting Point: ND
Vapor Density (Air = 1): > 1 (Air = 1)	Evaporation Rate: ND
Solubility in Water: May be slightly soluble	pH: ND
Density (at 20° C): ND	Odor: Gasoline
Appearance: Water white to straw yellow liquid	

V. FIRE AND EXPLOSION DATA

Flash Point: As low as -50 F	Flammable Limits: LEL: <1 UEL: 8
Special Fire Fighting Procedures: Water may be ineffective to extinguish but water should be used to keep fire-exposed containers cool. If a leak or spill has not ignited, use water to disperse the vapors and to protect personnel attempting to stop a leak. Water spray may be used to flush spills away from sources of potential ignition. Highly flammable. Products of combustion may contain carbon monoxide, carbon dioxide, and other toxic materials. Do not enter enclosed or confined space without proper protective equipment including respiratory protection.	
Unusual Fire and Explosion Hazards: Vapor forms explosive mixture with air. Vapors or gases may travel considerable distances to ignition source and flash back.	
Extinguishing Media: Foam, Dry Chemical, CO ₂ .	

VI. REACTIVITY

Stability: Stable
Hazardous Polymerization: Will not occur.
Incompatibility: Strong oxidizers.
Hazardous Decomposition: Carbon monoxide may be formed from incomplete combustion.

VII. HEALTH HAZARD INFORMATION

Routes of Exposure and Effects:		
Skin: Irritant * See additional health hazards information		
Eyes: Irritant * See additional health hazards information		
Inhalation: Irritant *See additional health hazards information		
Ingestion: Irritant *See additional health hazards information		
Permissible Exposure Limits: (for air contaminants)		
OSHA PEL (8hr. TWA): * See Hazardous ingredients		
ACGIH TLV: * See Hazardous ingredients		
Carcinogenicity: Benzene		
Listed By NTP: Listed	Listed By: IARC: Listed	Listed By OSHA: Listed
Acute Oral LD50:	Acute Dermal LD50:	Aquatic Toxicology LC50:
Emergency and First Aid Procedures:		
Skin: Wash skin thoroughly with soap and water. If irritation develops and persists, consult a physician.		
Eyes: In case of contact, immediately flush eyes with plenty of water for at least 15 minutes. Consult a physician.		
Ingestion: If swallowed, do not induce vomiting. Immediately give 2 glasses of water. Never give anything by mouth to an unconscious person. Call a		

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physician.

Inhalation: If inhaled, remove to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. Call a physician.

Additional Health Hazard Information::

Notes to Physicians:

Activated charcoal mixture may be beneficial. Suspend 50 g activated charcoal in 400 mL water and mix well. Administer 5 mL/kg, or 350 mL for an average adult.

This material may make the heart more susceptible to arrhythmias. Catecholamines such as adrenaline, and other compounds having similar effects, should be reserved for emergencies and then used only with special caution.

Substance Information:

A few studies have indicated that workers exposed many years to high concentrations of benzene have a slightly higher incidence of leukemia. Benzene can also be toxic to the blood and blood-forming tissues.

The product may cause irritation to the eyes, nose, throat, lungs and skin after prolonged or repeated exposure. Extreme overexposure or aspiration into the lungs may cause lung damage or death. Overexposure may cause weakness, headache, nausea, confusion, blurred vision, drowsiness, and other nervous system effects; greater overexposure may cause dizziness, slurred speech, flushed face, unconsciousness, and convulsions.

Inhalation of xylene can cause nausea, headache, weakness, dizziness, confusion, incoordination, and loss of consciousness. Ingestion can cause gastrointestinal irritation and symptoms of central nervous system depression; aspiration into the lungs may be lethal. High exposures can cause skin, eye, nose, and throat irritation; heart stress; anemia; respiratory difficulties; bleeding from mucosal surfaces; liver and kidney effects; and death.

Methyl tertiary butyl ether (MTBE) may cause irritation to the eyes, skin and lungs after prolonged or repeated exposure. The odor of MTBE may be offensive and possibly cause headaches, difficult breathing, skin and eye irritation, dizziness, and indigestion.

Combustion Product:

Carbon monoxide is a gas that can result from incomplete combustion of hydrocarbons, from detoxification of some chemicals like methylene chloride, tobacco smoke, and even from natural body processes. Carbon monoxide binds tightly to hemoglobin and interferes with oxygen transport to body tissues. Overexposure can cause headache, nausea, nervous system depression, coma, and death.

VIII. HANDLING AND USE PRECAUTIONS

Steps to be Taken if Material is Released or Spilled: Safeguards (Personnel) Note: Review **Fire Fighting Measures and Handling (Personnel)** before proceeding with clean-up. Use appropriate **Personal Protective Equipment** during clean-up. Remove source of heat, sparks, flame, impact, friction and electricity including internal combustion engines and power tools. If equipment is used for spill cleanup, it must be explosion proof and suitable for flammable liquid and vapor. **Note:** Vapors released from the spill may create an explosive atmosphere. Initial containment: Dike spill. Prevent material from entering sewers, waterways, or low areas. Spill clean up: Soak up with sawdust, sand, oil dry or other absorbent material.

Waste Disposal Methods: Treatment, storage, transportation, and disposal must be in accordance with applicable Federal, State/Provincial, and Local regulations. Do not flush to surface water or sanitary sewer system. By itself, the liquid is expected to be a RCRA ignitable hazardous waste.

Handling and Storage Precautions: Handling (Personnel) Avoid breathing mist or vapors. Avoid contact with eyes, skin or clothing. Wash thoroughly after handling. Wash clothing after use. Handling (Physical Aspects) Use of non-sparking and explosion proof equipment may be necessary depending on type of operation. Keep away from heat, sparks and flames. Close container after each use. Store in accordance with National Fire Protection Association recommendations. Keep containers tightly closed.

IX. INDUSTRIAL HYGIENE CONTROL MEASURES

Ventilation Requirements: Storage and use areas should be well ventilated. Explosion proof mechanical ventilation should be used in enclosed areas.

Respirator: NIOSH/MSHA approved air purifying respirator with an organic vapor cartridge or canister may be permissible under certain circumstances where airborne concentrations are expected to exceed exposure limits. Protection provided by air purifying respirators is limited. Use a positive pressure, air supplied respirator if there is a potential for an uncontrolled release, exposure levels are not known, or any other circumstances where air purifying respirators may not provide adequate protection. Proper respirator selection should be determined by adequately trained personnel and based on the contaminant(s), the degree of potential exposure, and published respirator protection factors.

Eye Protection: Chemical splash goggles or face shield for spray/mists or if splashing can occur.

Gloves: Should be worn when the potential exists for prolonged or repeated exposure. NBR recommended.

Other Protective Clothing or Equipment: Sufficient protective clothing to minimize skin exposure.

X. SPECIAL PRECAUTIONS

Toxicological Information:

Animal Data:

Animal studies have shown that prolonged or repeated inhalation exposures to high concentrations of some petroleum distillates have caused liver tumors in mice and kidney damage and tumors in male rats. However, kidney effects were not seen in similar studies involving female rats, guinea pigs, dogs, or monkeys. Present studies indicate the kidney effects will only occur in male rats. Also, human studies do not indicate this peculiar sensitivity for kidney damage and studies reported in 1992 showed that this particular type of rat kidney damage is not useful in predicting a human health hazard. The significance of liver tumors in mice exposed to high doses of chemicals is highly speculative and probably not a good indicator for predicating a potential human carcinogenic hazard.

One published study reports limited data suggesting long-term ingestion of 500 mg/kg of toluene caused increased malignant tumors in rats. Other more extensive inhalation studies demonstrated no carcinogenic effects in animals. Animal studies with toluene have failed to demonstrate birth defects in rats and mice. However, toluene has been shown to cause delayed growth and extra ribs in the offspring of rats and mice at inhaled doses (266-399ppm) that were non-toxic to the mother. Toluene has not been conclusively shown to cause adverse reproductive effects in humans. Toluene overexposure may also cause cardiac irregularities and hearing loss (animal data).

Mice and rats were exposed 6 hours daily to MTBE (400, 3000, or 8000ppm) for 82-105 weeks, no toxicity occurred at 400ppm (except some kidney damage in male rats) but the two higher concentrations caused a toxic response that included decreased body weight, ataxia, reduced startle response, kidney damage and tumors (only male rats), and liver tumors (female mice in only the 8000ppm exposed group). High exposure hydrocarbon-induced male rat kidney tumors and mouse liver tumors are probably not useful in predicting a significant human health hazard; future animal studies will further evaluate this tumorigenic response to MTBE. Animal studies involving daily exposure (3000ppm) showed no significant reproductive toxicity or nerve damage. In mice daily exposure above 1000ppm caused material toxicity, cleft palate, and increased skeletal variations in newborn mice but the presence of maternal toxicity limits the significance of these findings.

Xylene:

Eye: Animal testing indicates this material is an eye irritant.

Skin: ALD, rabbit: 4320 mg/kg (moderately toxic) Animal testing indicates this material is a moderate to severe skin irritant. This material has not been tested for skin sensitization. Single exposure to high doses caused: Narcosis.

Ingestion: LD50, rat: 4500 mg/kg (slightly toxic) Single exposure caused: Prostration and incoordination. Repeated exposure caused: Shallow respiration, prostration, liver and kidney effects, reduced weight gain, and altered hematology and clinical chemistry. Long-term exposure caused: Decreased body weight, and histopathological changes of the liver.

Inhalation: 4 hours, LC50, rat: 6700ppm (very low toxicity). Single exposure caused: Upper respiratory tract irritation, behavioral effects, incoordination, prostration, altered respiratory rate, low blood pressure, and altered hematology. Repeated exposure caused: Incoordination, decreased response to sound, histopathological changes of liver, kidneys, adrenal, heart, spleen, lungs, and bone marrow; altered hematology; and reduced weight gain. Long-term exposure caused: Liver effects.

One published study reports limited data suggesting high oral doses caused an increase in malignant tumors in rats. However, other more extensive animal studies have demonstrated no evidence of carcinogenicity.

Animal data show developmental effects only at or near levels producing other toxic effects in the adult animal. Reproductive data on adult animals show: No change in reproductive performance. Tests have shown that this material does not cause genetic damage in bacterial or mammalian cell cultures, or in animals. In animal testing, this material has not caused permanent genetic damage in reproductive cells of mammals (has not produced heritable genetic damage).

Ecological Information:

Ecotoxicological Information:

Aquatic Toxicity:

Toluene - Moderately toxic - 96 hour LC50 - Fathead minnows: 31.7 mg/L

Xylenes - Moderately toxic - 96 hour LC50 - Fathead minnows: 24-42 mg/L

MTBE(Methyl Tertiary Butyl Ether) - Low toxicity- 96 hour LC50 - Fathead minnows: 706 mg/L

XI. ENVIRONMENTAL/SAFETY REGULATION

U.S. Federal Regulations:

OSHA HAZARD DETERMINATION:

This material is hazardous as defined by OSHA's Hazard Communication Standard, 29 CFR 1910.1200.

CERCLA/SUPERFUND:

Not applicable; this material is covered by the CERCLA petroleum exclusion: Releases are not reportable.

SARA, TITLE III, 302/304:

This material is not known to contain extremely hazardous substances.

TITLE III HAZARD CLASSIFICATIONS SECTIONS 311, 312

Acute : Yes
Chronic : Yes
Fire : Yes
Reactivity : No
Pressure : No

SARA, TITLE III, 313

This material contains the following chemical(s) at a level of 1.0% or greater (0.1% for carcinogens) on the list of Toxic Chemicals and is subject to toxic chemical release reporting requirements:

Toxic Chemicals: See Composition Section

TSCA: Material and/or components are listed in the TSCA Inventory of Chemical Substances (40 CFR 710).

RCRA: This material when discarded or disposed of, is not specifically listed as a hazardous waste in Federal regulations; however, it meets criteria for being ignitable according to U.S. EPA definitions (40 CFR 261). This material could also become a hazardous waste if it is mixed or comes in contact with a listed hazardous waste. If it is a hazardous waste, regulations at 40 CFR 262-266 and 268 may apply.

Clean Water Act: The material contains the following ingredient(s) which is considered hazardous if spilled into navigable waters and therefore reportable to the National Response Center (1-800-424-8802).

Ingredients: Petroleum Hydrocarbons

Reportable Quantity: Film or sheen upon, or discoloration of, any water surface.

DEPARTMENT OF TRANSPORTATION

Shipping Name: Gasoline, 3, UN1203 PG II	Hazard Class: 3
Hazardous Substance: None	
Cautionary Labeling: Flammable	Placard: UN1203
NA=Not Applicable; ND=Not Determined or No Data	Date Prepared: August 3, 1995

File Name: Gasoline

The data presented is true and correct to the best of our knowledge and belief; however, neither seller nor preparer make any warranties, express or implied, concerning the information presented. The user is cautioned to perform his own hazard evaluation and to rely upon his own determinations.

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