



# Material Safety Data Sheet

## Section 1: Identification

<b>Manufacturer:</b> Devon Gas Services, L.P. 20 North Broadway Oklahoma City, OK 73126		<b>Emergency Phone Number:</b> 1.800.424-9300 CHEMTREC	
		Telephone Number for Information 405.235.3611	
<b>Product Identification:</b> Crude Oil	<b>Trade Name or Synonyms:</b>	<b>Date of Issue:</b> 9/25/01	<b>Rev. Date</b> 7/07/04

## Section 2: Hazardous Ingredients

Name	Exposure Limit	
	TLV	PEL
Crude Oil	5mg/m <sup>3</sup>	5mg/m <sup>3</sup>

Petroleum crude oil is a complex combination of hydrocarbons and may contain the following ingredients:

Hazardous Components	Percent	OSHA PEL	ACGIH TLV
Ethyl Benzene (CAS No. 100-41-4)	ND	100 ppm	100 ppm
Butane (CAS No. 106-97-8)	ND	800ppm	800 ppm
Heptane (CAS No. 142-82-5)	ND	400 ppm	400 ppm
Hexane (CAS No. 110-54-3)	ND	50 ppm	50 ppm
Nonane (CAS No. 111-84-2)	ND	200 ppm	
Octane (CAS No. 111-65-9)	ND	300 ppm	
Pentane (CAS No. 109-66-0)	ND	600 ppm	600 ppm
Propane (CAS No. 74-98-6)	ND	1000 ppm	1000 ppm
Toluene (CAS No. 108-88-3)	ND	100 ppm	100 ppm
Xylenes (CAS No. 1330-20-7 & 1477-55-0)	ND	100 ppm	100 ppm
Iso-hexanes	ND	500 ppm	
NDA – No Data Available		NE – None Established	

## Section 3: Physical Data

<b>Boiling Point (F°)</b>	0 – 100 ° F	<b>Specific Gravity (water =1)</b>	0.74 – 1.03
<b>Vapor Pressure (mm Hg.)</b>	0.60 – 10 lbs REID	<b>Melting Point</b>	NDA
<b>Vapor Density (air=1)</b>	Greater than 1	<b>Evaporation Rate</b>	NDA
<b>Solubility in Water</b>	Insoluble	<b>Odor</b>	Strong hydrocarbon & Sulfur
<b>Appearance</b>	Dark brown		

## Section 4: Fire and Explosion Data

<b>Flash Point</b>	0 – 200 ° F	<b>Flammable Limits</b>	NDA
<b>Extinguishing Media:</b> Use water fog, foam, dry chemical, or carbon dioxide. DO NOT use direct stream of water.			
<b>Special Fire Fighting Procedures:</b> Do not enter any enclosed or confined space without proper protective equipment including breathing apparatus. Work upwind to the fire or wear proper breathing equipment. Water can be used to cool tanks and containers exposed to fire. If leak or spill has not ignited, ventilate area and use water spray to disperse gas or vapor and to protect personnel attempting to stop a leak. Use water to flush spills away from sources of ignition.			



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### Unusual Fire and Explosion Hazards:

Material is flammable. This material releases vapors. When mixed with air in certain proportions and exposed to an ignition source, these vapors can burn or explode in confined spaces. Being heavier than air, flammable vapors may travel long distances along the ground before reaching a point of ignition and flashing back.

Material will float and can be ignited on surface of water.

### Section 5: Health Hazard Data

#### Effects of Overexposure:

**Acute:** Inhalation of vapors may be narcotic or anesthetic. Ingestion of liquid will cause gastrointestinal distress, irritation, and possibly nausea. Liquid vapors may be irritating to skin and eyes.

**Chronic:** May cause allergic skin reactions. Kidney and liver damage possible. Contains carcinogens (See Section 2) which may cause cancer resulting from prolonged exposure. Crude oil contains some polynuclear aromatic hydrocarbons which have been shown to be carcinogenic after prolonged or repeated skin contact in laboratory animals. Some crude oils have been shown to cause skin cancer in laboratory animals and crude oil fractions have been positive in mutagenic test systems. In addition, the presence of various heavy metals in crude oils may pose a bioaccumulation potential which could lead to systemic toxicity by repeated or prolonged inhalation, ingestion or skin absorption. The International Agency for Research on Cancer has determined that there is limited evidence for the carcinogenicity of crude oil in experimental animals and inadequate evidence for the carcinogenicity of crude oil in humans.

<b>Skin Contact</b>	Moderately irritating to the skin. Prolonged and repeated contact may cause various skin disorders such as dermatitis, oil acne, itching, inflammation, or skin tumors. Absorption from prolonged or massive skin contact may cause poisoning.
<b>Eyes</b>	Moderately irritating to the eyes. Direct contact may cause irritation. Exposure to vapors, fumes or mists may cause irritation.
<b>Inhalation</b>	Vapors can be harmful and irritating to the respiratory tract. Material contains carcinogens (See Section 2) which may cause cancer resulting from repeated and prolonged exposure. Exposure to high concentrations of dense oil mists may lead to oil pneumonia. Effects may include headaches, dizziness, drowsiness, blurred vision, fatigue, tremors, convulsions, loss of consciousness, coma, respiratory arrest, and death.
<b>Ingestion</b>	Harmful or fatal if swallowed. Ingestion of crude oil may result in vomiting; breathing of vomitus must be avoided since aspiration pneumonitis may result. May also cause irritation, nausea, and diarrhea.

#### Emergency and First Aid Procedures:

**Eye contact:** Flush immediately with plenty of water for at least 15 minutes and get medical attention. Eyelids should be held away from the eyeball to ensure thorough rinsing.

**Skin contact:** Wash thoroughly with soap and water. Remove contaminated clothing immediately. Do not use petroleum based solvents to remove oil from skin. Get medical attention if irritation persists.

**Inhalation:** Move to area of fresh air and if necessary begin artificial respiration. Get immediate medical attention.

**Ingestion:** Drink water or milk, do not induce vomiting. Get immediate medical attention. Do not induce vomiting because of danger of breathing liquid into the lungs. If spontaneous vomiting occurs, monitor for breathing difficulty.

<b>Carcinogenicity:</b>	<b>NTP?</b>	<b>IARC Monographs?</b>	<b>OSHA Regulated?</b>
Ethyl Benzene	Yes	Yes	Yes
Butane	No	No	Yes
Heptane	No	No	Yes
Hexane	No	No	Yes
Nonane	No	No	Yes
Octane	No	No	Yes
Pentane	No	No	Yes
Propane	No	No	Yes
Toluene	No	No	Yes
Xylenes	No	No	Yes
Iso-hexanes	No	No	Yes



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### Section 6: Reactivity Data

<b>Stability</b>	Stable
<b>Incompatibility</b>	Avoid contact with strong oxidizing agents such as liquid chlorine, sodium hypochlorite, calcium hypochlorite, and concentrated oxygen
<b>Conditions to Avoid</b>	Heat, sparks, and flames
<b>Hazardous Decomposition Products</b>	Irritating and toxic fumes may be emitted upon decomposition. Combustion byproducts include carbon monoxide, carbon dioxide, oxides of sulfur, and oxides of nitrogen.
<b>Hazardous Polymerization</b>	Does not occur

### Section 7: Spill or Leak Procedures

**Steps to be taken in case material is released or spilled:**  
Eliminate all flames and ignition sources. Absorb with inert material.

**Waste Disposal Method (Insure conformity with local disposal regulation):**  
Dispose at EPA approved disposal facility. Regulations govern the disposal of this material.

### Section 8: Personal Protection Information

<b>Respiratory Protection</b>	Ventilation may be used to reduce airborne concentrations. If ventilation cannot reduce airborne concentrations below acceptable limits, appropriate respiratory protection should be used.
<b>Ventilation</b>	Normally not needed.
<b>Protective Gloves</b>	Wear impervious gloves and protective clothing to prevent skin contact. Use good personal hygiene.
<b>Eye Protection</b>	Wear safety glasses or chemical goggles to prevent eye contact with dust. Do not wear contact lenses when working.
<b>Other Protective Clothing or Equipment</b>	Normally not needed.
<b>Work/Hygienic Practices</b>	Wear sufficient protective clothing to minimize skin exposure. Launder all contaminated clothing before reuse.

### Section 9: Special Precautions

**Precautions to be taken in handling and storing:**

Store in a cool place away from ignition sources. Use with adequate ventilation. Avoid contact with skin, eyes, and clothing. After handling product, wash hands. Do not store in unlabeled containers

Do not cut, weld, drill, or grind on vessels that contain or once contained material without first preparing the vessel for such work.