

Safety Data Sheet: Crude Oil

1. Identification

Product Name: Crude Oil, Sweet or Sour

Synonyms: Petroleum Oil, Crude, Sweet Crude Oil, Sour Crude Oil

Product Use: Process stream, intended for fuel and lubricant production

EP Energy

1001 Louisiana Street
Houston, Texas 77002

Information: (713) 997-1000 or 855-269-0826

O'BRIEN'S: (985) 781-0804 24/7

2. Hazard(s) Identification

Note: This product has not been tested by EP Energy to determine its specific health hazards. Therefore, the information provided in this section includes health hazard information on the product components.

GHS Classification

H224: Flammable liquid – Category 1

H304: Aspiration hazard

H316: Skin irritation

H319: Serious eye damage/irritation – Category 2

H335: Specific target organ toxicity – Category 3

H336: Specific target organ toxicity (single exposure) – Category 3

H350: Carcinogenicity – Category 1B

H373: Specific target organ toxicity (repeated exposure) – Category 2 (bone marrow, liver, thymus)

H411: Hazardous to the aquatic environment, long term hazard – Category 2

May contain or release poisonous hydrogen sulfide gas

Hazards Not Otherwise Classified

GHS Label Elements



Signal Words Danger

GHS Hazard Statements

H224: Extremely flammable liquid and vapor

H350: May cause cancer

H304: May be fatal if swallowed and enters airways

H319: Causes serious eye irritation

H336: May cause drowsiness or dizziness

H373: May cause damage to organs through prolonged or repeated exposure

H316: Causes mild skin irritation

H402: Harmful to aquatic life

H411: Toxic to aquatic life with long lasting effects

GHS Precautionary Statements

P201: Obtain special instructions before use

P202: Do not handle until all safety precautions have been read and understood

P210: Keep away from heat/sparks/open flames/hot surfaces – no smoking

P233: Keep container tightly closed

P240: Ground/bond container and receiving equipment

P241: Use explosion-proof electrical/ventilating/lighting equipment

P242: Use only non-sparking tools

P243: Take precautionary measures against static discharge

P261: Avoid breathing dust/fume/gas/mist/vapours/spray

P264: Wash thoroughly after handling

P270: Do not eat, drink or smoke when using this product

P271: Use only outdoors or in a well-ventilated area

P273: Avoid release to the environment

P280: Wear protective gloves/protective clothing/eye protection/face protection

Safety Data Sheet: Crude Oil

Response

P361, P352, P362: IF ON SKIN OR HAIR: Remove/take off immediately all contaminated clothing. Wash with plenty of soap and water. Take off contaminated clothing and wash before reuse.
 P305, P351, P338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing
 P313: If eye irritation persists, get medical advice/attention
 P301, P310: IF SWALLOWED: Immediately call a POISON CENTER or doctor/physician
 P331: Do NOT induce vomiting
 P304, P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing
 P312: Call a POISON CENTER or doctor/physician if you feel unwell
 P370, P378: In case of fire: Use dry chemical, carbon dioxide, or foam for extinction

Storage

P233: Keep container tightly closed
 P405: Store locked up

Disposal

P391: Collect spillage
 P501: Dispose of contents/container in accordance with local/regional/national/international regulations.

3. Composition/Information on Ingredients

Note: Composition will vary with geographic location, geologic formation, temperature and pressure.

Components	CAS No.	Wt% ⁽¹⁾
Crude Oil (Petroleum)	8002-05-9	95-100
Toluene	108-88-3	0-20
Xylenes	1330-20-7	0-20
Ethyl benzene	100-41-4	0-4
Benzene	71-43-2	0-2
n-Hexane	110-54-3	0-5
Hydrogen Sulfide	7783-06-4	Varies

⁽¹⁾Normal composition ranges are shown. Concentrations are percent by weight, unless the constituent is a gas. Gas concentrations are in percent by volume. Crude oil can contain minor amounts of sulfur, nitrogen and oxygen containing organic compounds as well as trace amounts of heavy metals, such as mercury, arsenic, nickel, and vanadium. Naturally occurring radioactive materials (NORM) may also be present. Composition varies depending on the source of the crude oil.

4. First-aid Measures

Inhalation: If respiratory symptoms develop, move victim to fresh air. Seek immediate medical attention if symptoms persist. If breathing has stopped and airway is clear, provide artificial respiration. Do not use mouth-to-mouth method if victim ingested the substance. Provide artificial respiration with the aid of a pocket mask equipped with a one-way valve or other proper respiratory medical device. Administer oxygen if breathing is difficult, if qualified. Seek immediate medical attention.

Skin Contact: Remove and isolate contaminated clothing and shoes. Wash affected areas with soap and water. If irritation persists, seek medical attention. Decontaminate clothing before reuse.

Eye Contact: Flush eyes with large amounts of water for at least 15 minutes, occasionally lifting the eyelids. Seek medical attention.

Ingestion: DO NOT INDUCE VOMITING. If spontaneous vomiting occurs, place on the left side with head down to prevent aspiration of liquid into the lungs. Have exposed individual rinse mouth thoroughly with water. Never give anything by mouth to an unconscious person. Do not leave victim unattended. Monitor for breathing difficulties. Seek immediate medical attention.

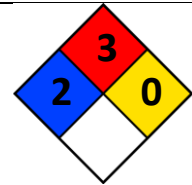
Notes to Physician: This material may contain or liberate hydrogen sulfide. In high doses, hydrogen sulfide may produce pulmonary edema and respiratory depression or paralysis.

5. Fire-Fighting Measures

NFPA Ratings: Health: 3 Flammability: 3 Reactivity: 0

Combustion Products:

Highly dependent on combustion conditions. Fume, smoke, carbon monoxide, carbon dioxide, sulfur and nitrogen oxides, aldehydes and unburned hydrocarbons.

**General Fire Hazards:**

Flammable. Ignited by heat, sparks or flames or other sources of ignition. Flowing oil can be ignited by self-generated static electricity. Containers should be grounded and bonded. Vapors may reach an ignition source and flashback. Runoff to sewer may create fire or explosion hazard downstream from the source. When mixed with air and exposed to an ignition source, vapors can burn in the open or explode in confined spaces. BLEVE'S (Boiling Liquid Expanding Vapor Explosions) can occur when a liquid in a pressurized container is heated to temperatures beyond its boiling point. This can lead to failure of the container and damage to the surrounding area.

Hazardous combustion/decomposition products may include carbon monoxide, carbon dioxide and hydrocarbons. Hydrogen sulfide may be present. Downwind personnel must be evacuated.

Extinguishing Media:

Suitable extinguishing media: dry chemical, foam, carbon dioxide, water spray. Carbon dioxide can displace oxygen. Use caution when applying carbon dioxide in confined spaces. For large fires, use unmanned hoses. Water may be ineffective on large fires, but should be used to cool surrounding areas.

Unsuitable extinguishing media: none.

Fire Fighting Instructions:

Move containers from fire area if you can do it without risk. Use a water spray to cool fire-exposed containers until well after fire is out. Do not direct water at source of leak or safety devices as icing may occur. Dike fire-control water for later disposal; do not scatter the material. Firefighters should wear self-contained breathing apparatus. Refer to Section 8 for proper PPE selection.

Precautions for Fire Involving Tanks or Car/Trailer Loads:

If tank, rail car or tank truck is involved in a fire, ISOLATE for 800 meters (1/2 mile) in all directions. Consider initial evacuation for 800 meters (1/2 mile) in all directions. Always stay away from tanks engulfed in flame. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Cool containers with flooding quantities of water until well after fire is out. Withdraw immediately in case of rising sound from venting safety devices or discoloration of tank. If unmanned hose holders or monitor nozzles cannot be used, withdraw from area and let fire burn.

6. Accidental Release Measures**Personal Precautions:**

Extremely Flammable. Spillage of liquid product will create a fire hazard and may form an explosive atmosphere. Keep all sources of ignition and hot metal surfaces away from spill/release. The use of explosion-proof electrical equipment is recommended. Product may contain or release poisonous hydrogen sulfide gas. Provide sufficient ventilation in the affected area(s) and wear appropriate personal protective equipment as indicated in Section 8 when handling spill material.

Environmental Precautions:

Stop the leak if it can be done without risk. Prevent spilled material from entering waterways, sewers, basements or confined areas. Contain release to prevent further contamination of soils, surface water or groundwater. Clean up spill as soon as possible using appropriate techniques such as applying non-combustible absorbent materials or vacuuming. All equipment used when handling the product must be grounded. A vapor suppressing foam may be used to reduce vapors. Use clean nonsparking tools to collect absorbed material. Where feasible and appropriate, remove contaminated soil.

Methods for Containment and Clean Up:

Immediate cleanup of any spill is recommended. Build dike or use other appropriate spill response methods far ahead of spill for containment and later recovery or disposal of spilled material. Absorb spill with inert material and place in suitable container for disposal. If spilled on water, remove with appropriate equipment such as skimmers, booms or absorbents. In case of soil contamination, remove contaminated soil for remediation or disposal in accordance with applicable regulations.

Reporting:

Report spills/releases as required, to appropriate local, state and federal authorities. US Coast Guard and Environmental Protection Agency regulations require immediate reporting of spills/release that could reach any waterway. Report spill/release to the National Response Center at (800) 424-8802. In case of accident or road spill, notify Chemtrec at (800) 424-9300.

7. Handling and Storage

Handle in accordance with good industrial hygiene and safety practices. These practices include, but are not limited to, avoiding unnecessary exposure and prompt removal of material from eyes, skin, and clothing. If needed, take first aid actions as indicated in Section 4.

Precautions for Safe Handling:

Handle as a flammable liquid. Keep away from heat, sparks and open flame. No smoking. Use only with adequate ventilation. May release or contain dangerous levels of H₂S. Use only with adequate ventilation. Wear appropriate personal protective equipment and use exposure controls as indicated in Section 8. Vent slowly to the atmosphere when opening. Avoid all contact with skin and eyes. Avoid breathing product dust or vapors. Use explosion-proof electrical (ventilating, lighting and material handling) equipment. Non-sparking tools should be used. Ground and bond all transfer and storage equipment to prevent static sparks and equip with self-closing valves, pressure vacuum bungs and flame arrestors. Review all operations which have the potential of generating and accumulating electrostatic charge and/or flammable atmosphere.

Safety Data Sheet: Crude Oil

Use appropriate mitigating procedures. Do not enter confined spaces without following proper entry procedures. Remove contaminated clothing immediately. Wash with soap and water after working with this product.

Scales, deposits and sludge from equipment associated with this product may have accumulation of Naturally Occurring Radioactive Materials (NORM). Equipment should be assessed for external gamma radiation.

Conditions for Safe Storage:

Keep away from flame, sparks, excessive temperatures and open flame. No smoking. Maintain vessels closed and clearly labeled. Empty vessels may contain explosive vapors. Do not pressurize, cut, heat, weld or expose these vessels to sources of ignition. This material may contain or release H₂S. In a tank or other closed container, the vapor space above this material may accumulate hazardous concentrations of H₂S. Do not enter confined spaces without following proper entry procedures. Use appropriate containment to avoid environmental contamination.

Incompatibilities:

Keep away from strong oxidizers, ignition sources and heat.

8. Exposure Controls/Personal Protection

Components	CAS No.	Occupational Exposure Limits			Units
		OSHA ⁽¹⁾	ACGIH ⁽¹⁾	NIOSH ⁽²⁾	
Crude Oil (petroleum, naphtha)	8002-05-9	---	---	---	---
Toluene	108-88-3	200 300 ^{Ceiling} 500 ^{10-min max}	20 ⁽³⁾	100 150 ^{STEL}	ppm
Xylenes	1330-20-7	100	100 ⁽³⁾ 150 ^{STEL}	100 150 ^{STEL}	ppm
Ethyl benzene	100-41-4	100	20 ⁽³⁾	100 125 ^{STEL}	ppm
Benzene	71-43-2	1 5 ^{STEL}	0.5 ⁽³⁾ 2.5 ^{STEL}	0.1 1 ^{STEL}	ppm
n-Hexane	110-54-3	1800 (500)	50	180 (50)	ppm
Hydrogen Sulfide	7783-06-4	20 ^{Ceiling}	15 ^{STEL}	10 ^{Ceiling}	ppm

⁽¹⁾8-hour TWA unless otherwise specified

⁽²⁾10-hour TWA unless otherwise specified.

⁽³⁾ ACGIH has established a Biological Exposure Index (BEI) for this substance.

N/A = Not Applicable.

STEL: 15-minute Short Term Exposure Limit

Ceiling: Concentration not to be exceeded at any time

Engineering Controls:

Provide adequate general and local exhaust ventilation to: (1) Maintain airborne chemical concentrations below applicable exposure limits, (2) Prevent accumulation of flammable vapors and formation of explosive atmospheres, and (3) Prevent formation of oxygen deficient atmospheres, especially in confined spaces.

Eye Protection:

Safety glasses are required standard PPE. Face shields are required when working with pressurized lines. Wear chemical goggles when working with liquid natural gas.

Skin Protection:

Fire Resistant Clothing (FRC) is required standard PPE. Insulated clothing and/or gloves should be worn where liquid or expanding gas may be generated.

Respiratory Protection:

A NIOSH-approved respirator must be worn where controls do not maintain airborne concentrations below occupational exposure limits. Positive-pressure, Full-face, self-contained breathing apparatus (SCBA) should be available for emergency use. H₂S MAY BE PRESENT OR RELEASED. NIOSH-approved respiratory protection should be used when handling crude of high or unknown hydrogen sulfide content and to reduce airborne concentrations to allowable occupational exposure levels.

Work/Hygiene Practices:

Always observe good personal hygiene measures, such as washing after handling the material and before eating, drinking, and/or smoking. Routinely wash work clothing and protective equipment to remove contaminants.

9. Physical and chemical properties

Flammable Classification:

Safety Data Sheet: Crude Oil

NFPA Class-1B Flammable Liquid
 NFPA Ratings: Health: 2 Flammability: 3, Reactivity: 0

Flash Point:
 < 120° F.

Flammable Limits in Air, % by Volume:
 Lower (LFL): 1%
 Upper (UFL): 15%

Auto-ignition Temperature:
 Liquid: 450° F, Vapor: 800-1000° F

Values provided are typical of similar products or representative sampling.

Appearance:	Pale to black liquid	% Volatile by Volume:	20-100
Odor:	Strong hydrocarbon, sulfurous odor possible	Viscosity:	0.8-4500 @ 100° F
Freezing Point:	Not available	Vapor Density (Air = 1):	1.5-3.0
Solubility in H₂O:	0.01-0.05 %	pH:	Not available
Specific Gravity @ 60° F & 1 atm:	0.80-0.98	Evaporation Rate:	0.1-1.0
Melting Point:	Not available	(Ethyl ether = 1)	

	Altamont Black Wax Crude	Altamont Yellow Wax Crude	Other	Testing Method
Flash Point	< 96° F	< 120° F	< 100° F	ASTM D-93A
Initial Boiling Point (simulated distillation)	129° F	156° F	20-400° F	ASTM D-5307
Vapor Pressure	1.65 psi @ 140° F	1.60 psi @ 100° F	0-12 @ 70° F	ASTM D-323
Hydrogen Sulfide	< 1 ppm	< 1 ppm	varies	ASTM D-5705

10. Stability and Reactivity

Chemical Stability:
 Stable under normal anticipated storage and handling temperatures and pressures.

Conditions to Avoid/Incompatibilities:
 Strong oxidizing agents, heat, sparks, flame and build-up of static electricity. Avoid high temperatures and all possible sources of ignition.

Hazardous Decomposition Products:
 Carbon monoxide, carbon dioxide, hydrocarbons and sulfur dioxide.

Hazardous Polymerization:
 Not known to occur.

11. Toxicological Information

Toxicological data does not exist for this mixture. Altered mental state, drowsiness, peripheral motor neuropathy, irreversible brain damage (so-called Petrol Sniffers Encephalopathy), delirium, seizures, and sudden death have been reported from repeated overexposure to some hydrocarbon solvents, naphthas, and gasoline. This substance may have a potential for sensitization.

Acute Toxicity	Hazard	Additional Information	LC50/LD50 Data
Inhalation	Expected to have a low degree of toxicity by inhalation	May contain or release poisonous hydrogen sulfide gas	> 5 mg/L (vapor)
Skin Absorption	Unlikely to be harmful		> 2 g/kg
Ingestion (Swallowing)	Unlikely to be harmful		> 5 g/kg

Aspiration Hazard: May be fatal if swallowed and enters airways.

Skin Corrosion/Irritation: Causes mild skin irritation.

Serious Eye Damage/Irritation: Causes serious eye irritation.

Signs and Symptoms: Effects of overexposure may include irritation of the digestive tract, irritation of the respiratory tract, nausea, vomiting,

Safety Data Sheet: Crude Oil

diarrhea and signs of nervous system depression (e.g., headache, drowsiness, dizziness, loss of coordination, disorientation and fatigue).

Skin Sensitization: Not expected to be a skin sensitizer.

Respiratory Sensitization: No information available.

Specific Target Organ Toxicity (Single Exposure): May cause drowsiness and dizziness.

Specific Target Organ Toxicity (Repeated Exposure): May cause damage to organs through prolonged or repeated exposure.

Laboratory animal studies of crude oil by the dermal and inhalation exposure routes have demonstrated toxicity to the liver, blood, spleen and thymus

BENZENE: This product may contain benzene, which can cause degeneration in blood forming bone marrow leading to anemia which may further degrade to leukemia, a type of cancer. Acute benzene poisoning causes central nervous system depression. Chronic exposure affects the hematopoietic system causing blood disorders including anemia and pancytopenia. 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.

HYDROGEN SULFIDE: This product may contain or release hydrogen sulfide, which may be fatal if inhaled. Greater than 15-20 ppm continuous exposure can cause mucous membrane and respiratory tract irritation. 50-500 ppm can cause headache, nausea, dizziness, loss of reasoning and balance, difficulty breathing, fluid in the lungs and possible loss of consciousness. Greater than 500 ppm can cause rapid or immediate unconsciousness due to respiratory paralysis and death by suffocation unless removed from exposure and successfully resuscitated. Inhalation of a single breath at a concentration of 1000 ppm (0.1%) can cause immediate unconsciousness and death. Hydrogen sulfide is corrosive when moist. Skin contact may cause burns. There is a rapid loss of sense of smell on exposure to gas concentrations above 50 ppm. At high concentrations, individuals may not even recognize the odor before becoming unconscious.

Carcinogenicity: May cause cancer. Chronic application of crude oil to mouse skin resulted in an increased incidence of skin tumors. IARC concluded in its Crude Oil Monograph that there is limited evidence of carcinogenicity in animals, and that crude oil is not classifiable as to its carcinogenicity in humans (Group 3). It has not been listed as a carcinogen by NTP or OSHA.

Germ Cell Mutagenicity: Inadequate information available.

Reproductive Toxicity: Inadequate information available. Dermal exposure to crude oil during pregnancy resulted in limited evidence of developmental toxicity in laboratory animals. Decreased fetal weight and increased resorptions were noted at maternally toxic doses. No significant effects on pup growth or other developmental landmarks were observed postnatally.

Other Comments: This material may contain or liberate hydrogen sulfide, a poisonous gas with the smell of rotten eggs. The smell disappears rapidly because of olfactory fatigue so odor may not be a reliable indicator of exposure. Effects of overexposure include irritation of the eyes, nose, throat and respiratory tract, blurred vision, photophobia (sensitivity to light), and pulmonary edema (fluid accumulation in the lungs). Severe exposures can result in nausea, vomiting, muscle weakness or cramps, headache, disorientation and other signs of nervous system depression, irregular heartbeats, convulsions, respiratory failure, and death.

This material may contain varying concentrations of polycyclic aromatic hydrocarbons (PAHs) which have been known to produce a phototoxic reaction when contaminated skin is exposed to sunlight. The effect is similar in appearance to an exaggerated sunburn, and is temporary in duration if exposure is discontinued. Continued exposure to sunlight can result in more serious skin problems including pigmentation (discoloration), skin eruptions (pimples), and possible skin cancers.

Information on Toxicological Effects of Components

n-Hexane

Target Organs: Excessive exposure to n-hexane can result in peripheral neuropathies. The initial symptoms are symmetrical sensory numbness and paresthesias of distal portions of the extremities. Motor weakness is typically observed in muscles of the toes and fingers but may also involve muscles of the arms, thighs and forearms. The onset of these symptoms may be delayed for several months to a year after the beginning of exposure. The neurotoxic properties of n-hexane are potentiated by exposure to methyl ethyl ketone and methyl isobutyl ketone.

Reproductive Toxicity: Prolonged exposure to high concentrations of n-hexane (>1,000 ppm) resulted in decreased sperm count and degenerative changes in the testes of rats but not those of mice.

Xylenes

Target Organs: Rats exposed to xylenes at 800, 1000 or 1200 ppm 14 hours daily for 6 weeks demonstrated high frequency hearing loss. Another study in rats exposed to 1800 ppm 8 hours daily for 5 days demonstrated middle frequency hearing loss. **Reproductive Toxicity:** Both mixed xylenes and the individual isomers produced limited evidence of developmental toxicity in laboratory animals. Inhalation and oral administration of xylene resulted in decreased fetal weight, increased incidences of delayed ossification, skeletal variations and resorptions, but no evidence of teratogenicity.

Ethyl Benzene

Carcinogenicity: Rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study demonstrated limited

Safety Data Sheet: Crude Oil

evidence of kidney, liver, and lung cancer. Ethyl benzene has been listed as a possible human carcinogen by IARC.

Target Organs: In rats and mice exposed to 0, 75, 250, or 750 ppm ethyl benzene in a two year inhalation study there was mild damage to the kidney (tubular hyperplasia), liver (eosinophilic foci, hypertrophy, necrosis), lung (alveolar epithelium metaplasia), thyroid (hyperplasia), thyroid (hyperplasia) and pituitary (hyperplasia). In animal models (particularly rats), ethyl benzene affects the auditory function mainly in the cochlear mid-frequency range and ototoxicity was observed after combined exposure to noise and ethyl benzene. There is no evidence of either ethyl benzene-induced hearing losses or ototoxicity with combined exposure to ethyl benzene and noise in workers.

Benzene

Carcinogenicity: Benzene is an animal carcinogen and is known to produce acute myelogenous leukemia (a form of cancer) in humans. Benzene has been identified as a human carcinogen by IARC, the US National Toxicology Program and the US Occupational Safety and Health Administration.

Target Organs: Prolonged or repeated exposures to benzene vapors can cause damage to the blood and blood forming organs, including disorders like leukopenia, thrombocytopenia, and aplastic anemia.

Reproductive Toxicity: Some studies in occupationally exposed women have suggested benzene exposure increased risk of miscarriage and stillbirth and decreased birth weight and gestational age. The size of the effects detected in these studies was small, and ascertainment of exposure and outcome in some cases relied on self-reports, which may limit the reliability of these results.

Germ Cell Mutagenicity: Benzene exposure has resulted in chromosomal aberrations in human lymphocytes and animal bone marrow cells. Exposure has also been associated with chromosomal aberrations in sperm cells in human and animal studies

Carcinogenicity:

Component (CAS No.)	ACGIH ⁽¹⁾	IARC Monographs ⁽²⁾	US NTP	OSHA Regulated
Benzene (71-43-2)	A1	1	Yes	Yes
Ethyl benzene (100-41-4)	A3	2B	No	No
Toluene (108-88-3)	A4	3	No	No
Xylene (1330-20-7)	A4	3	No	No
Petroleum Crude Oil (8002-05-9)	Not applicable	3	No	No

⁽¹⁾ACGIH Carcinogens: A1 = Confirmed human carcinogen, A2 = Suspected human carcinogen, A3 = Confirmed animal carcinogen with unknown relevance to humans, A4 = Not classifiable as a human carcinogen, A5 = Not suspected as a human carcinogen

⁽²⁾IARC Monographs: 1 = Carcinogenic to humans, 2A = Probably carcinogenic to humans, 2B = Possibly carcinogenic to humans, 3 = Not classifiable as to carcinogenicity to humans, 4 = Probably not carcinogenic to humans

12. Ecological Information

Contains a substance which is toxic to aquatic organisms and may cause long-term adverse effects in the aquatic environment.

Keep out of sewers, drainage areas, and waterways. Report spills and releases, as applicable, under Federal and State regulations.

13. Disposal Information

Do not dispose of waste into sewer. Do not allow this material to drain into sewers/water supplies. If discarded, this material may meet the criteria of being an "ignitable" waste. If hydrogen sulfide and/or benzene are present in the waste, the waste may be considered a hazardous U-listed waste. Under RCRA, it is the responsibility of the user to determine, at the time of disposal, if the material meets federal, state, or local criteria to be defined as a hazardous waste.

14. Transport Information

UN/Identification Number: UN 1267

Proper Shipping Name: Petroleum crude oil

Hazard Class: 3 (Wax crude requires heating to test flash point. No testing method available to confirm low-end flash point greater than 73° F. Product is delivered to receiver in a heated range of 140° - 180° F.)

Packing Group: III, except for transport by rail. Per DOT Emergency Restriction/Prohibition Order dated 3/6/2014, all transportation by rail shall be classified as Packing Group I or II.

ERG#: 128

Safety Data Sheet: Crude Oil

15. Regulatory Information

EPA SARA TITLE III

Section 302 EPCRA Extremely Hazardous Substances (EHS)

Product Component	CAS No.	Wt%	RQ, lb	TPQ, lb
Hydrogen Sulfide	7783-06-4	0-1	100	500

Section 304 CERCLA Hazardous Substances

Product Component	CAS No	Wt%	RQ, lb
Benzene	71-43-2	0-2	10
Toluene	108-88-3	0-20	1000
Xylene	1330-20-7	0-20	100
Ethylbenzene	100-41-4	0-4	1000
Hydrogen Sulfide	7783-06-4	0-1	100

Section 311/312 Hazard Categorization

Acute:	Chronic:	Fire:	Pressure:	Reactive:
Yes	Yes	Yes	No	No

Section 313 EPCRA Toxic Substances

Product Component	CAS No.	Wt. %
Benzene	71-43-2	0-2
Toluene	108-88-3	0-20
Xylene	1330-20-7	0-20
Ethylbenzene	100-41-4	0-4
Hydrogen Sulfide	7783-06-4	0-1

EPA TSCA

All components are either on the U.S. EPA TSCA Inventory List, or are not regulated under TSCA.

Key: RQ = Reportable Quantity
TPQ = Threshold Planning Quantity

CALIFORNIA PROPOSITION 65 WARNING

Chemicals known to the State of California to cause cancer, birth defects, or other reproductive harm may be found in crude oil and petroleum products. Although it is possible to sufficiently refine a crude oil or its end products to remove the potential for cancer, we are advising that one or more of the listed chemicals may be present in some detectable quantities. Read and follow directions and use care when handling crude oil and petroleum products.

16. Other Information

Date Prepared: 09/02/1997, **Last Revision:** 06/01/2015

THIS INFORMATION RELATES ONLY TO THE SPECIFIC MATERIAL DESIGNATED AND MAY NOT BE VALID FOR SUCH MATERIAL USED IN COMBINATION WITH ANY OTHER MATERIALS OR IN ANY PROCESS. SUCH INFORMATION IS TO THE BEST OF THIS COMPANY'S KNOWLEDGE AND BELIEVED ACCURATE AND RELIABLE AS OF THE DATE INDICATED. HOWEVER, NO REPRESENTATION, WARRANTY OR GUARANTEE IS MADE AS TO THE ACCURACY, RELIABILITY OR COMPLETENESS. IT IS THE USER'S RESPONSIBILITY TO SATISFY THEMSELVES AS TO THE SUITABILITY AND COMPLETENESS OF SUCH INFORMATION FOR THEIR OWN PARTICULAR USE.

Key/Legend:

- ACGIH - American Conference of Governmental Industrial Hygienists
- ADR - Agreement on Dangerous Goods by Road
- CAA - Clean Air Act
- CAS - Chemical Abstracts Service Registry Number
- CDG - Carriage of Dangerous Goods By Road and Rail Manual
- CERCLA - Comprehensive Environmental Response, Compensation, and Liability Act
- CFR - Code of Federal Regulations
- CNS - Central Nervous System
- EINECS - European Inventory of Existing Chemical Substances Registry Number
- ERG - Emergency Response Guidebook
- EPCRA - Emergency Planning and Community Right-to-Know Act
- GHS - Globally Harmonized System of Classification and Labeling of Chemicals
- IARC - International Agency for Research on Cancer
- IATA - International Air Transport Association
- ICAO - International Civil Aviation Organization

Safety Data Sheet: Crude Oil

IMDG - International Maritime Dangerous Goods Code
IMO - International Maritime Organization
MSDS - Material Safety Data Sheet
N/E - Not Established
NTP - National Toxicology Program
OSHA - Occupational Safety and Health Administration
PEL - Permissible Exposure Limit
PPE - Personal Protective Equipment
RCRA - Resource Conservation and Recovery Act
RID - Regulations Concerning the International Transport of Dangerous Goods by Rail
RQ - Reportable Quantities
SARA - Superfund Amendments and Reauthorization Act of 1986
SDS - Safety Data Sheet
TCC - Tag Closed Cup
TDG - Transportation of Dangerous Goods
TLV - Threshold Limit Value
TSCA - Toxic Substance Control Act
UN/NA - United Nations / North American Number
UNECE - United Nations Economic Commission for Europe
US DOT - United States Department of Transportation
US EPA - United States Environmental Protection Agency
Vol. - Volume
WHMIS - Workplace Hazardous Materials Information System

This is the end of MSDS A0017.sds