

SAFETY DATA SHEET

Halcón Resources



Date Issued : 8/20/2014
SDS No : HA201-002a

Sour Crude

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: Sour Crude
GENERAL USE: Refinery feedstock.

DISTRIBUTOR

Halcón Resources
 1000 Louisiana St. Suite 6700
 Houston, TX 77002

24 HR. EMERGENCY TELEPHONE NUMBERS

(713) 345-1060

Emergency Telephone Number(s) may be used for any type of emergency response, hazmat, regulatory responding, or DOT information regarding this product.

2. HAZARDS IDENTIFICATION

GHS CLASSIFICATIONS**Health:**

Aspiration Hazard, Category 1
 Carcinogenicity, Category 1
 Mutagenicity, Category 1
 Reproductive Toxicity, Category 2
 Skin Irritant, Category 2

Environmental:

Chronic Hazards to the Aquatic Environment, Category 2

Physical:

Flammable Liquids, Category 2

GHS LABEL

Flame



Health hazard



Exclamation mark

SIGNAL WORD: DANGER**HAZARD STATEMENTS**

H225: Highly flammable liquid and vapor.
 H350: May cause cancer.
 H304: May be fatal if swallowed and enters airways.
 H340: May cause genetic defects.
 H315: Causes skin irritation.
 H411: Toxic to aquatic life with long lasting effects.
 H361: Suspected of damaging fertility or the unborn child.

Sour Crude**PRECAUTIONARY STATEMENT(S)****Prevention:**

- 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.
- P264:: Wash exposed skin and outer wear thoroughly after handling.
- P273: Avoid release to the environment.
- P280: Wear protective gloves/protective clothing/eye protection/face protection.
- P281: Use personal protective equipment as required.

Response:

- P303+P361+P353: IF ON SKIN (or hair): Remove/take off immediately all contaminated clothing. Rinse skin with water/shower.
- P304+P340: IF INHALED: Remove 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.
- P314: Get medical advice/attention if you feel unwell.
- P332+P313: If skin irritation occurs: Get medical advice/attention.
- P370+P378:: In case of fire: Use a Class B, multipurpose dry chemical, or carbon dioxide fire extinguisher for extinction.
- P391: Collect spillage.

Storage:

- P235: Keep cool.
- P403+P233: Store in a well-ventilated place. Keep container tightly closed.
- P405: Store locked up.

Disposal:

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

EMERGENCY OVERVIEW

PHYSICAL APPEARANCE: Amber to black viscous liquid.

IMMEDIATE CONCERNS: This product is a flammable liquid which may be harmful if ingested, inhaled, comes in contact with skin or eyes or is released into the environment. Please read the entire contents of Section 2 of this Safety Data Sheet (SDS) for details.

POTENTIAL HEALTH EFFECTS

EYES: Eye contact may cause slight eye irritation. Inflammation of the eye is characterized by redness, watering and itching.

SKIN: Contact may cause skin irritation, dryness, itching, redness, and cracked skin. Repeated or prolonged skin contact may cause dermatitis. Crude oil is a defatting agent.

INGESTION: Ingestion of crude oil may cause a burning sensation in the mouth and stomach, nausea, vomiting, excess salivation and vomiting of blood. Ingestion of crude oil may cause tachycardia, staggering gait, dizziness, loss of consciousness and delirium, followed by chemical pneumonitis and collapse. May also cause abrupt CNS depression. Crude oil may present a potential aspiration hazard if ingested. Aspiration of even small amounts of crude oil into the lungs can result in immediate pulmonary edema (a potentially fatal accumulation of fluid in the lungs), chemical pneumonitis and hemorrhage of pulmonary tissue.

INHALATION: Exposure to low levels (700 to 3,000 ppm) may cause drowsiness, dizziness, tachycardia, headaches, tremors, confusion and unconsciousness. Exposure to high concentrations (3,000 ppm or higher) may cause acute poisoning, characterized by the narcotic action of benzene on the CNS. Inhalation of crude oil may present an anesthetic action similar to that of other anesthetic gases, consisting of a preliminary stage of excitation followed by depression and, if exposure is continued, seizures, paralysis, ventricular arrhythmias and death due to respiratory failure.

REPRODUCTIVE TOXICITY

Sour Crude

REPRODUCTIVE EFFECTS: Components of this product, such as toluene, may cause reproductive and developmental defects. See Section 11 of this SDS for additional information.

TERATOGENIC EFFECTS: Not Established.

CARCINOGENICITY: Several components of this product are considered carcinogens. Please refer to Section 11 of this SDS for more details.

MUTAGENICITY: May cause genetic defects. Some crude oils and crude oil fractions have been positive in mutagenicity studies.

MEDICAL CONDITIONS AGGRAVATED:

Benzene - Pre-existing blood system disorders, skin disorders, respiratory conditions, central nervous, liver, kidney, and cardio-vascular conditions may be aggravated by severe or chronic overexposure to benzene.

Ethylbenzene - Pre-existing respiratory conditions, skin disorders, central nervous system, liver, kidney, and cardio-vascular conditions may be aggravated by severe or chronic overexposure to this product.

ROUTES OF ENTRY: Ingestion, inhalation, skin absorption, skin contact.

TARGET ORGAN STATEMENT: May cause damage to blood forming organs, eyes, skin, lungs, central nervous system, and respiratory system.

SENSITIZATION: Not Established.

3. COMPOSITION / INFORMATION ON INGREDIENTS

Chemical Name	Vol. %	CAS
Crude Oil	100	8002-05-9
Gasoline	~ 30	8006-61-9
Xylenes (o-, m-, p- Isomers)	~ 10	1330-20-7
Hexane	~ 10	110-54-3
Pentane	~ 5	109-66-0
Toluene	~ 5	108-88-3
Ethyl Benzene	~ 4	100-41-4
Benzene	0 - 3	71-43-2
Trimethyl Benzene	0 - 2	25551-13-7
Naphthalene	~ 0 - 1	91-20-3
Hydrogen Sulfide	> 0.5	7783-06-4

COMMENTS: Crude oil is a mixture of hundreds of hydrocarbon compounds and may also include components not listed. Compositions given are typical values, not specifications. This product is a complex combination of hydrocarbons predominantly greater than C7.

4. FIRST AID MEASURES

EYES: Immediately flush with large amounts of water, holding eyelids open, for at least 20 minutes. Repeat if necessary. Remove contact lenses, if present and easy to do. Seek medical assistance if irritation persists.

SKIN: Immediately remove contaminated clothing or shoes, wipe excess from skin and flush with plenty of water for at least 15 minutes. Do not reuse clothing until thoroughly cleaned. Get medical attention.

INGESTION: Do not induce vomiting. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs. Slowly give 1-2 glasses of water or milk and seek medical attention. Never give anything by mouth to an unconscious person.

INHALATION: Move victim to fresh air. Give artificial respiration if victim is not breathing. Do not use mouth-to-mouth method if victim ingested or inhaled the substance; give 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. Get medical attention.

Sour Crude**SIGNS AND SYMPTOMS OF OVEREXPOSURE**

ACUTE TOXICITY: May cause adverse health effects if ingested. May cause irritation if inhaled or absorbed through skin. Prolonged or repeated contact may defat the skin and/or cause irritation to skin and eyes. Fire will produce irritating, toxic gases. Vapors may cause dizziness or suffocation.

CHRONIC EFFECTS: Chronic exposure to benzene (a component of crude oil) may cause serious damage to health by all routes of exposure. Chronic oral and inhalation exposure may cause severe effects on the blood system, including damage to the bone marrow, leading to a decrease in production or changes to the cells of hemoglobin, hematocrit, red and white blood cells. Effects may occur with an exposure level as low as 10 ppm for 24 weeks. Benzene may also cause harmful changes to the immune system. Benzene is a confirmed human carcinogen. See Section 11 of this SDS for further information.

NOTES TO PHYSICIAN: The following guidelines are derived from "Clinical Toxicology of Commercial Chemical Products" (5th edition, 1984) for benzene:

- Check for signs of impending pulmonary edema.
- Because of the aspiration hazard, avoid emetic drugs, whenever practical.
- For overexposures in which emesis is advisable: If the patient is not drowsy, comatose, or in respiratory difficulty, induce vomiting. If necessary, as an alternative treatment, remove benzene from the stomach via gastric lavage.
- One or two ounces of mineral oil may be instilled and left in the stomach at the completion of lavage.
- Avoid epinephrine because of its possible adverse effect on the sensitized myocardium. Avoid all digestible fats, oils and alcohol which may promote the absorption of benzene in the intestinal system.
- If eyes or skin are affected, wash thoroughly and apply a bland analgetic ointment.
- Because of the possibility of ventricular fibrillation, monitor the ECG continuously and be prepared to administer external cardiac massage.

Refer to the OSHA Benzene Standard [29 CFR 1910.1028; paragraph(i) and Appendix C] for specific information on Medical Surveillance requirements (i.e. for the general physical exam, medical history, specific tests, and re-examination protocol).

ADDITIONAL INFORMATION: Ensure that medical personnel are aware of the material(s) involved and take precautions to protect themselves. First Aid Responders are advised to wear personal protective equipment as found in Section 8 of this SDS.

5. FIRE FIGHTING MEASURES

FLAMMABLE CLASS: Class IB.

EXTINGUISHING MEDIA:

SMALL FIRE - Dry chemical, carbon dioxide, water spray or alcohol-resistant foam.

LARGE FIRE - Water spray, fog or alcohol-resistant foam.

HAZARDOUS COMBUSTION PRODUCTS: Any combustion, including incomplete combustion, may form carbon monoxide and carbon dioxide. Burning produces noxious and toxic fumes. Downwind personnel must be evacuated.

OTHER CONSIDERATIONS: INAPPROPRIATE EXTINGUISHING MEDIA - Do not use water jet.

FIRE FIGHTING PROCEDURES: PROTECTIVE ACTIONS TO TAKE DURING FIRE FIGHTING - Move containers from fire area if you can do it without risk. Dike fire-control water for later disposal; do not scatter the material. Evacuate 800 meters (1/2 mile) in all directions. Persons involved in fire fighting response involving this product and its containers/packaging should refer to Section 8 of this SDS for the proper selection of exposure controls and personal protective equipment.

FIRE FIGHTING EQUIPMENT: PRECAUTIONS FOR FIRE INVOLVING TANKS OR CAR/TRAILER LOADS -

Isolate and evacuate area for 800 meters (1/2 mile) in all directions. Fight fire from maximum distance or use unmanned hose holders or monitor nozzles. Do not get water inside containers. 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. ALWAYS stay away from tanks engulfed in fire.

COMMENTS: SPECIFIC HAZARDS THAT MAY ARISE FROM THE PRODUCT - Vapors are flammable and heavier than air. Vapors may travel across the ground and reach remote ignition sources causing a flashback fire danger. Sudden reaction and fire may result if product is mixed with an oxidizing agent.

Sour Crude**6. ACCIDENTAL RELEASE MEASURES**

SMALL SPILL: For emergency information and procedures to follow in the case of an accidental release, call the Emergency Telephone Number(s) listed in Section 1 of this SDS. In case of spillage, absorb with inert material and dispose of in accordance with applicable regulations. Dike far ahead of liquid spill for later disposal. Never discharge releases directly into sewers or surface waters. Remove any ignition sources and protect from ignition. Water spray may reduce vapor, but may not prevent ignition in closed spaces. A vapor suppressing foam may be used to reduce vapors. Provide sufficient ventilation in the affected area(s) and wear appropriate personal protective equipment as indicated in Section 8 of this SDS when handling spill material.

LARGE SPILL: Use similar response procedures as indicated under Small Spill.

GENERAL PROCEDURES: MATERIALS & METHODS (EQUIPMENT & TECHNIQUES) FOR CONTAINMENT & CLEANUP - Call Emergency Telephone Number(s) provided in Section 1 of this SDS. As an immediate precautionary measure, isolate spill or leak area for at least 50 meters (150 feet) in all directions. Keep unauthorized personnel away. Stay upwind. Keep out of low areas. Ventilate closed spaces before entering.

RELEASE NOTES: ENVIRONMENTAL PRECAUTIONS - Avoid contact of spilled material with soil and prevent runoff entering surface waterways. Inform the relevant authorities if the product has caused environmental pollution (sewers, waterways, soil or air). Toxic to aquatic organisms, may cause long-term adverse effects in the aquatic environment.

SPECIAL PROTECTIVE EQUIPMENT: EMERGENCY & NON-EMERGENCY RESPONDERS - Refer to Section 8 of this SDS for appropriate exposure controls and personal protective equipment (PPE).

7. HANDLING AND STORAGE

GENERAL PROCEDURES: 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 of this SDS.

HANDLING: Use only with adequate ventilation. Wear appropriate personal protective equipment and use exposure controls as indicated in Section 8 of this SDS. 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. Do not reuse container. Remove contaminated clothing immediately. Wash with soap and water after working with this product.

STORAGE: Keep in airtight container away from all heat sources. Store in a segregated and approved area. Store in a cool, dry location, away from direct sunlight, sources of intense heat, or where freezing is possible. Keep container in a well-ventilated area. Store away from incompatible materials. Store in the original container or an approved alternative made from compatible material. Do not store in unlabeled containers. Treat empty containers in a similar fashion as residual product may exist. Use appropriate containment to avoid environmental contamination.

STORAGE TEMPERATURE: Store containers in a room with ambient temperature.

STORAGE PRESSURE: Containers should be stored in a room at ambient pressure.

8. EXPOSURE CONTROLS / PERSONAL PROTECTION

Sour Crude**EXPOSURE GUIDELINES**

OSHA HAZARDOUS COMPONENTS (29 CFR1910.1200)					
		EXPOSURE LIMITS			
		OSHA PEL		ACGIH TLV	
Chemical Name		ppm	mg/m³	ppm	mg/m³
Crude Oil	TWA	500	2000	N/E	N/E
	STEL	N/E	N/E	N/E	N/E
Gasoline	TWA	300 ppm ^[1]	890 mg/m ³ ^[1]	N/E	N/E
	STEL	500 ppm ^[1]	1480 mg/m ³ ^[1]	N/E	N/E
Xylenes (o-, m-, p- Isomers)	TWA	100	435	100	434
	STEL	N/E	N/E	150	651
Hexane	TWA	500	1800	50	180
	STEL	N/E	N/E	N/E	N/E
Pentane	TWA	1000	2950	600	N/E
	STEL	N/E	N/E	N/E	N/E
Toluene	TWA	200	N/E	50	188
	STEL	300	N/E	N/E	N/E
Ethyl Benzene	TWA	100	435	100	434
	STEL	N/E	N/E	125	543
Benzene	TWA	1	N/E	0.5	N/E
	STEL	5	N/E	2.5	N/E
Trimethyl Benzene	TWA	N/E	N/E	25	123
	STEL	N/E	N/E	N/E	N/E
Naphthalene	TWA	10	50	10	52
	STEL	N/E	N/E	15	79
Hydrogen Sulfide	TWA	N/E	N/E	1	1.4
	STEL	C20 ^[2]	N/E ^[2]	5	7

Footnotes:

1. Bulk handling.

2. OSHA has also assigned H₂S a STEL value of 50 ppm for a 10-minute peak that may be reached only once per 8-hour shift.

C = Ceiling

ENGINEERING CONTROLS: Provide sufficient ventilation to control exposure levels below airborne exposure limits. Use local mechanical exhaust ventilation at sources of air contamination such as open process equipment. Consult current NFPA Standard 91 and ACGIH manual on industrial ventilation for design of exhaust system. Have eye baths available at locations where there is potential for eye contact. Provide a safety shower at locations where skin contact can occur.

PERSONAL PROTECTIVE EQUIPMENT

EYES AND FACE: Employees should be provided with and required to use splash-proof safety goggles and face shields where there is any possibility of product coming in contact with eyes. Ensure that an eye wash station

Sour Crude

is operable and nearby.

SKIN: GLOVES - Chemically impervious gloves (PVC, nitrile, neoprene).

RESPIRATORY: Depending on airborne concentration, use a NIOSH approved respirator with organic vapor cartridges. Use a positive pressure, supplied-air respirator if there is potential for uncontrolled release, exposure levels are not known, or other circumstances where air-purifying respirators may not provide adequate protection.

WORK HYGIENIC PRACTICES: Use good personal hygiene practices. Avoid repeated and/or prolonged skin exposure. Wash hands before eating, drinking, smoking, or using toilet facilities. Promptly remove contaminated clothing and laundry before reuse. Discard contaminated leather articles.

OTHER USE PRECAUTIONS: FIREFIGHTING AND OTHER IMMEDIATELY DANGEROUS TO LIFE OR HEALTH CONDITIONS - A self-contained breathing apparatus (SCBA) with full face piece operated in a pressure-demand or other positive pressure mode is recommended for firefighting or other immediately dangerous to life and health conditions. A supplied-air respirator with full face piece and operated in pressure-demand or other positive pressure mode in combination with an auxiliary SCBA operated in pressure-demand or other positive pressure mode may also be used.

9. PHYSICAL AND CHEMICAL PROPERTIES

ODOR: Hydrocarbon odor. If present H₂S has a rotten egg odor, but should not be used as an indicator of a hazardous condition because it can overwhelm and deaden the sense of smell.

ODOR THRESHOLD: Not Established.

APPEARANCE: Amber to black viscous liquid.

pH: Not Established.

PERCENT VOLATILE: 40-100 at 537°C (1000°F)

FLASH POINT: 15°C (59°F) to 93°C (199°F)

FLAMMABLE LIMITS: 1 to 15

Notes: Flammable limits given as percentage volume in air at normal atmospheric temperature and pressure.

AUTOIGNITION TEMPERATURE: 232°C (450°F)

VAPOR PRESSURE: 5.14 to 8.5 PSIA at 38°C (100°F).

VAPOR DENSITY: Not Established.

BOILING POINT: 146°C (295°F) to 194°C (382°F)

FREEZING POINT: Not Established.

MELTING POINT: Not Established.

SOLUBILITY IN WATER: Soluble in hydrocarbon solvents; insoluble in water.

EVAPORATION RATE: 0.1 to 1.0

SPECIFIC GRAVITY: 0.79 to 0.83 at 16°C (60°F)

COEFF. OIL/WATER: Not Established.

COMMENTS: FLAMMABILITY - Refer to Section 2 and Section 5 of this SDS for classification and flammability characteristics.

10. STABILITY AND REACTIVITY

STABLE: Yes

HAZARDOUS POLYMERIZATION: No

STABILITY: This product is anticipated to be stable under normal ambient storage and handling conditions of temperature and pressure.

POLYMERIZATION: This product is not anticipated to cause hazardous reactions or polymerizations under normal ambient storage and handling conditions of temperature and pressure.

CONDITIONS TO AVOID: Avoid contact with high temperatures, open flames, sparks, welding, smoking and other ignition sources.

HAZARDOUS DECOMPOSITION PRODUCTS: This product may produce carbon monoxide and carbon dioxide

Sour Crude

during decomposition. If hydrogen sulfide is present, pyrophoric iron sulfide may form.

INCOMPATIBLE MATERIALS: Strong oxidizing agents.

11. TOXICOLOGICAL INFORMATION**ACUTE**

Chemical Name	ORAL LD ₅₀ (rat)	DERMAL LD ₅₀ (rabbit)	INHALATION LC ₅₀ (rat)
Crude Oil	> 5000 mg/kg	> 2000 mg/kg	N/E
Gasoline	N/E	N/E	300 g/m ³
Xylenes (o-, m-, p- Isomers)	4300 mg/kg	> 4350 mg/kg	5000 ppm (4 hours)
Hexane	5000 mg/kg	3000 mg/kg	48000 ppm (4 hours)
Pentane	N/E	> 2000 mg/kg	364 g/m ³
Toluene	636 mg/kg	8390 to 18090 mg/kg	12.5 to 28.8 mg/L (4 hours)
Ethyl Benzene	3500 mg/kg	15415 to 17800 mg/kg	17.2 mg/L (4 hours)
Benzene	1758 to 6856 mg/kg	> 9400 mg/kg	44.5 mg/L (4 hours)
Trimethyl Benzene	8970 mg/kg	N/E	N/E
Naphthalene	> 2000 mg/kg	> 2500 mg/kg	100 ppm (8 hours)
Hydrogen Sulfide	Not Established.	Not Established.	444 ppm

EYE EFFECTS: May cause mild eye irritation. Contact may result in irritation, lacrimation, pain and redness.

SKIN EFFECTS: May be irritating to the skin. Repeated or prolonged contact may cause removal of natural fat from the skin resulting in desiccation of the skin. The product may be absorbed through the skin.

CARCINOGENICITY

Chemical Name	NTP Status	IARC Status	OSHA Status
Crude Oil		3	
Xylenes (o-, m-, p- Isomers)		3	
Toluene		3	
Ethyl Benzene		2B	
Benzene	1	1	Carcinogen
Naphthalene	2	2B	

Notes:

Benzene - Caused cancer (leukemia), damage to the blood-producing system and serious blood disorders from prolonged, high exposure based on human epidemiology studies. Caused genetic effects and effects on the immune system in laboratory animal and some human studies. Caused toxicity to the fetus in laboratory animal studies.

Ethylbenzene - Caused cancer in laboratory animal studies. The relevance of these findings to humans is uncertain.

Naphthalene - Exposure to high concentrations of naphthalene may cause destruction of red blood cells,

Sour Crude

anemia and cataracts. Naphthalene caused cancer in laboratory animal studies, but the relevance of these findings in humans is uncertain.

n-Hexane - Prolonged and/or repeated exposures to n-Hexane can cause progressive and potentially irreversible damage to the peripheral nervous system. Simultaneous exposure to methyl ethyl ketone (MEK) or methyl isobutyl ketone (MIBK) and n-Hexane can potentiate the risk of adverse effects from n-Hexane on the peripheral nervous system. n-Hexane has been shown to cause testicular damage at high doses in male rats. The relevance of this effect for humans is unknown.

Toluene - Concentrated, prolonged or deliberate inhalation may cause brain and nervous system damage. Prolonged and repeated exposure of pregnant animals (>1500 ppm) have been reported to cause adverse fetal developmental effects.

SENSITIZATION: Not Established.

NEUROTOXICITY: Not Established.

GENETIC EFFECTS: This product may cause genetic effects.

REPRODUCTIVE EFFECTS: High exposures to xylene in some animal studies have been reported to cause health effects on the developing embryo and fetus. These effects were often at levels toxic to the mother. The significance of these findings to humans has not been determined. n-Hexane has been shown to cause reproductive/fetal effects in laboratory tests.

TERATOGENIC EFFECTS: Not Established.

MUTAGENICITY: May cause genetic defects. Some crude oils and crude oil fractions have been positive in mutagenicity studies.

12. ECOLOGICAL INFORMATION

ENVIRONMENTAL DATA: MOBILITY IN SOIL POTENTIAL - Not established for this mixture, however this mixture contains volatile constituents. Partly evaporates from water or soil surfaces, but significant proportion will remain after one day. If the product enters the soil, one or more constituents will or may be mobile and may contaminate groundwater.

ECOTOXICOLOGICAL INFORMATION: This product has no known ecotoxicological effects.

TERRESTRIAL/MICROORGANISM TOXICITY -

ACUTE: Ecological data does not exist for this mixture.

CHRONIC: Ecological data does not exist for this mixture.

BIOACCUMULATION/ACCUMULATION: Has the potential to bioaccumulate.

AQUATIC TOXICITY (ACUTE): This product is expected to be harmful to aquatic life.

Notes: (CHRONIC) - May cause long lasting harmful effects to aquatic life.

CHEMICAL FATE INFORMATION: PERSISTENCE & DEGRADABILITY - Major constituents are inherently biodegradable, but contains components that may persist in the environment. The volatile constituents will oxidize rapidly by photochemical reactions in air.

GENERAL COMMENTS: Any other adverse environmental effects, such as environmental fate (exposure), ozone depletion potential, photochemical ozone creation potential, endocrine disrupting potential, and global warming potential are indicated in this section if data exists. Otherwise, this data has not been established.

13. DISPOSAL CONSIDERATIONS

DISPOSAL METHOD: It is recommended that this product, in any form, be incinerated in a suitable combustion chamber for disposal. Empty containers should be disposed of in a similar fashion due to presence of product residue. Follow applicable Federal, state, and local regulations.

PRODUCT DISPOSAL: Persons conducting disposal of this product and its containers/packaging should refer to Section 8 of this SDS for the proper selection of exposure controls and personal protective equipment.

EMPTY CONTAINER: Do not pressurize, cut, weld, braze, solder, drill, grind, or expose such containers to heat, flame, sparks, static electricity, or other sources of ignition. They may explode and cause injury or death.

COMMENTS: Dispose of material in accordance with national, state, regional, and local regulations. Never discharge directly into sewers or surface water. Consult with environmental regulatory agencies for guidance on acceptable disposal practices for the product, in any form, and its containers/packaging.

Sour Crude**14. TRANSPORT INFORMATION****DOT (DEPARTMENT OF TRANSPORTATION)****PROPER SHIPPING NAME:** Petroleum crude oil.**PRIMARY HAZARD CLASS/DIVISION:** 3**UN/NA NUMBER:** 1267**PACKING GROUP:** III**NAERG:** 128**MARINE POLLUTANT #1:** Not Listed.**VESSEL (IMO/IMDG)****SHIPPING NAME:** Petroleum crude oil.**UN/NA NUMBER:** 1267**PRIMARY HAZARD CLASS/DIVISION:** 3**PACKING GROUP:** III**15. REGULATORY INFORMATION****UNITED STATES****DOT LABEL SYMBOL AND HAZARD CLASSIFICATION**Flammable
Liquid**SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)****311/312 HAZARD CATEGORIES:** Fire hazard. Immediate (acute) health hazard. Delayed (chronic) health hazard.**FIRE:** Yes **PRESSURE GENERATING:** No **REACTIVITY:** No **ACUTE:** Yes **CHRONIC:** Yes**EPCRA SECTION 313 SUPPLIER NOTIFICATION**

Chemical Name	Vol. %	CAS
Xylenes (o-, m-, p- Isomers)	~ 10	1330-20-7
Hexane	~ 10	110-54-3
Toluene	~ 5	108-88-3
Ethyl Benzene	~ 4	100-41-4
Benzene	0 - 3	71-43-2

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

Sour Crude

Chemical Name	Vol. %	CERCLA RQ
Xylenes (o-, m-, p- Isomers)	~ 10	100
Hexane	~ 10	5,000
Toluene	~ 5	1,000
Ethyl Benzene	~ 4	1,000
Benzene	0 - 3	10
Naphthalene	~ 0 - 1	100
Hydrogen Sulfide	> 0.5	100

TSCA (TOXIC SUBSTANCE CONTROL ACT)

Chemical Name	CAS
Crude Oil	8002-05-9
Gasoline	8006-61-9
Xylenes (o-, m-, p- Isomers)	1330-20-7
Hexane	110-54-3
Pentane	109-66-0
Toluene	108-88-3
Ethyl Benzene	100-41-4
Benzene	71-43-2
Trimethyl Benzene	25551-13-7
Naphthalene	91-20-3
Hydrogen Sulfide	7783-06-4

TSCA STATUS: Crude oil is listed on the TSCA Inventory.

CLEAN AIR ACT

Chemical Name	Vol. %	CAS
Pentane	~ 5	109-66-0
Hydrogen Sulfide	> 0.5	7783-06-4

OCCUPATIONAL SAFETY AND HEALTH ADMINISTRATION (OSHA)

29 CFR 1910.119---PROCESS SAFETY MANAGEMENT OF HIGHLY HAZARDOUS CHEMICALS: Benzene is subject to the requirements of CFR 29 1910.1028, the OSHA Benzene Standard. The Action Level for Benzene is 0.5 ppm as an 8-hour, time-weighted average under this regulation. Benzene is not listed in Appendix A as a highly hazardous chemical, per 29 CFR 1910.119: Process Safety Management of Highly Hazardous Chemicals. Under this regulation, however, any process that involves a flammable liquid on-site, in one location, in quantities of 10,000 lbs (4,553 kg) or greater is covered under this regulation unless it is used as a fuel.

STATES WITH SPECIAL REQUIREMENTS

Chemical Name	Requirements
Crude Oil	Massachusetts Hazardous Substance Minnesota Hazardous Substance Pennsylvania Hazardous Substance

Sour Crude

Gasoline	<p>California Hazardous Substance Massachusetts Hazardous Substance Minnesota Hazardous Substance</p>
Xylenes (o-, m-, p- Isomers)	<p>Wisconsin Hazardous Air Containment California Hazardous Substance Delaware Air Quality Management Idaho Air Pollutant Illinois Toxic Air Contaminant Maine Hazardous Air Pollutant Massachusetts Hazardous Substance Michigan Critical Material Minnesota Hazardous Substance New Jersey RTK Hazardous Substance North Carolina Toxic Air Contaminant Pennsylvania Hazardous Substance Washington PELs for Air Contaminants New York Hazardous Substance</p>
Hexane	<p>Massachusetts Hazardous Substance Delaware Air Quality Management Idaho Air Pollutant Illinois Toxic Air Contaminant Maine Hazardous Air Pollutant Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New Jersey RTK Hazardous Substance New York Hazardous Substance North Carolina Toxic Air Contaminant Pennsylvania Hazardous Substance Washington PELs for Air Contaminants Wisconsin Hazardous Air Containment</p>
Pentane	<p>California Hazardous Substance Delaware Air Quality Management Idaho Air Pollutant Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey TCPA EHS New Jersey RTK Hazardous Substance Pennsylvania Hazardous Substance Washington PELs for Air Contaminants</p>
Toluene	<p>California Hazardous Substance California Proposition 65 Substance Delaware Air Quality Management Idaho Air Pollutant Illinois Toxic Air Contaminant Maine Hazardous Air Pollutant Massachusetts Hazardous Substance Michigan Critical Material Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New Jersey RTK Hazardous Substance New York Hazardous Substance North Carolina Toxic Air Contaminant North Carolina Toxic Air Contaminant Pennsylvania Hazardous Substance Washington PELs for Air Contaminants</p>

Sour Crude

	Wisconsin Hazardous Air Containment
Ethyl Benzene	California Hazardous Substance California Proposition 65 Substance Delaware Air Quality Management Idaho Air Pollutant Illinois Toxic Air Contaminant Maine Hazardous Air Pollutant Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New York Hazardous Substance Pennsylvania Hazardous Substance Washington PELs for Air Contaminants Wisconsin Hazardous Air Containment
Benzene	California Hazardous Substance Delaware Air Quality Management Illinois Toxic Air Contaminant Maine Hazardous Air Pollutant Massachusetts Hazardous Substance Michigan Critical Material Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New York Hazardous Substance North Carolina Toxic Air Contaminant Pennsylvania Hazardous Substance Washington PELs for Air Contaminants West Virginia Toxic Air Pollutant Wisconsin Hazardous Air Containment
Trimethyl Benzene	Idaho Air Pollutant Illinois Toxic Air Contaminant Massachusetts Hazardous Substance Minnesota Hazardous Substance Pennsylvania Hazardous Substance Washington PELs for Air Contaminants Wisconsin Hazardous Air Containment
Naphthalene	California Hazardous Substance California Proposition 65 Substance Delaware Air Quality Management Idaho Air Pollutant Illinois Toxic Air Contaminant Maine Hazardous Air Pollutant Massachusetts Hazardous Substance Minnesota Hazardous Substance New Jersey RTK Hazardous Substance New York Hazardous Substance Pennsylvania Hazardous Substance Washington PELs for Air Contaminants Wisconsin Hazardous Air Containment
Hydrogen Sulfide	California Hazardous Substance Delaware Air Quality Management Idaho Air Pollutant Massachusetts Hazardous Substance Maine Hazardous Air Pollutant Minnesota Hazardous Substance New Jersey RTK Hazardous Substance

Sour Crude

New Jersey TCPA EHS New York Hazardous Substance North Carolina Toxic Air Contaminant Pennsylvania Hazardous Substance Washington PELs for Air Contaminants Wisconsin Hazardous Air Containment
--

CALIFORNIA PROPOSITION 65: Benzene is known to the State of California to cause cancer and is listed on the California Proposition 65 Lists.

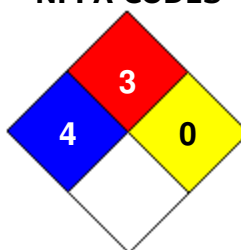
Chemical Name	Vol. %	Listed
Toluene	~ 5	● Female Reproductive
Benzene	0 - 3	● Developmental Toxicity ● Male Reproductive

16. OTHER INFORMATION

PREPARED BY: Total Safety d/b/a EHS Services

HMIS RATING

HEALTH	*	4
FLAMMABILITY		3
PHYSICAL HAZARD		1
PERSONAL PROTECTION		

NFPA CODES

HMIS RATINGS NOTES: Please refer to Section 8 of this SDS for recommended personal protective equipment.

DATA SOURCES:**REFERENCES**

ACGIH. 2014 Guide to Occupational Exposure Values. Cincinnati, OH. Signature Publications, 2014.
 Forsberg, K. et al. Quick Selection Guide to Chemical Protective Clothing. Sixth Edition. Hoboken, NJ. John Wiley & Sons, 2014.
 Lide, D.R. CRC Handbook of Chemistry and Physics. 88th Edition. Boca Raton, FL. CRC Press, 2008.
 UNECE. Globally Harmonized System of Classification and Labeling of Chemicals (GHS). Third Revised Edition. New York and Geneva. United Nations, 2009.
 US DOT; Pipeline and Hazardous Materials Safety Administration. 2008 Emergency Response Guidebook. Neenah, WI. J.J. Keller & Associates, Inc. 2008.
 US EPA. Consolidated List of Chemicals Subject to the Emergency Planning and Community Right-To-Know Act (EPCRA) and Section 112(r) of the Clean Air Act. [Available] Online: <http://www.epa.gov/ceppo/pubs/title3.pdf>. Retrieved 02/02/2011.

ADDITIONAL MSDS INFORMATION:**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
 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

Sour Crude

ICAO - International Civil Aviation Organization
IMDG - International Maritime Dangerous Goods Code
IMO - International Maritime Organization
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

GENERAL STATEMENTS: Other information not included anywhere else in this SDS is included in this section if, in fact, such data exists.

MANUFACTURER DISCLAIMER: This information relates 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 our knowledge and belief, accurate and reliable as of the date compiled. However, no representation, warranty or guarantee is made as to its accuracy, reliability or completeness. NO WARRANTY OF MERCHANTABILITY, FITNESS FOR ANY PARTICULAR PURPOSE, OR ANY OTHER WARRANTY, EXPRESSED OR IMPLIED, IS MADE CONCERNING THE INFORMATION HEREIN PROVIDED. It is the user's responsibility to satisfy himself as to the suitability and completeness of such information for his own particular use. We do not accept liability for any loss or damage that may occur from the use of this information nor do we offer warranty against patent infringement.