

SECTION 1: CHEMICAL PRODUCT and COMPANY IDENTIFICATION

(N/A)

Product Name: **Petroleum Crude Oil (Sweet)**
Synonyms: Various names related to the particular production field may be applied to specific crude oil streams, such as Petroleum Crude Oil, Sweet Crude, Light Crude, etc.
Chemical Family: Petroleum Hydrocarbon
Chemical Formula: Mixture
Manufacturer Name: Terasen Pipelines (USA), Inc.
Address: 800 Werner Court, Suite #352
 Casper, WY 82601

General Use: Refinery feedstock

CHEMTREC Numbers:

For emergencies in the US, call CHEMTREC: 800-424-9300

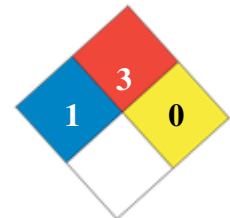
Revision Date: June 5, 2003

Trade Names: Various names related to the particular production field may be applied to specific crude oil streams, such as Petroleum Crude Oil, Sweet Crude, Light Crude, etc.

NFPA Classification: Health (Blue): 1
 Fire (Red): 3
 Reactivity (Yellow): 0
 Special (White): None

HMIS Classification:
 Health (Blue): 1
 Fire (Red): 3
 Reactivity (Yellow): 0

Hazard Rating:
 0 = Minimal
 1 = Slight
 2 = Moderate
 3 = Serious
 4 = Severe

NFPA**HMIS**

HEALTH	1
FIRE	3
REACTIVITY	0
PPE	

Product Codes:

[To Top of page](#)

SECTION 2 : COMPOSITION, INFORMATION ON INGREDIENTS


: (N/A)

Ingredient Name	CAS#	Ingredient Percent
Petroleum Crude Oil EC Index Number: 1	8002-05-9	98.0 - 100.0% by Weight
Sulfur Compounds EC Index Number: 1	Mixture	0.0 - 0.5% by Weight
Benzene OSHA PEL TWA: 1.0 ppm OSHA STEL/Ceiling: 5.0 ppm ACGIH TLV TWA: 0.50 ppm ACGIH STEL/Ceiling: 2.5 ppm EC Index Number: 1	71-43-2	0.1 - 0.8% by Weight
Hydrogen Sulfide OSHA PEL TWA: 10.0 ppm OSHA STEL/Ceiling: 15.0 ppm ACGIH TLV TWA: 10.0 ppm ACGIH STEL/Ceiling: 15.0 ppm EC Index Number: 1	7783-43-2	0.0 - 0.5% by Weight
Total Hydrocarbons OSHA PEL TWA: 100 ppm*		

OSHA STEL/Ceiling:	Not Applicable
ACGIH TLV TWA:	Not Applicable
ACGIH STEL/Ceiling:	Not Applicable
EC Index Number:	1
Comments:	* Recommended Industry Standard

Crude oil is a naturally occurring mixture of paraffins, aromatic hydrocarbons and small amounts of sulphur and nitrogen compounds. The composition and properties will vary significantly according to the source of the crude. This mixture may contain benzene and hydrogen sulfide (H₂S). Crude oil is considered "sweet" if its sulfur content is limited to 0.5% (by weight) or less.

This mixture has been tested as a whole to determine its hazards under the OSHA Hazard Communication Standard in 29 CFR 1910.1200.


[To Top of page](#) 

SECTION 3 : HAZARDS IDENTIFICATION

: (N/A)

Applies to All Ingredients :

Route of Exposure:	Inhalation, Absorption, and Ingestion
Potential Health Effects:	
Eye Contact:	Crude oil vapors are moderately irritating to the eyes. Hot splashes will cause acute effects, such as eye burns and permanent eye damage.
Skin Absorption:	Prolonged skin contact may cause defatting of the skin resulting in dry cracked skin and dermatitis. Benzene may be absorbed through skin.
Inhalation:	Central nervous system depression from crude oil vapor may include symptoms such as headache, drowsiness, dizziness or nausea. If concentrations are very high, edema (fluid in the lungs) may result. Symptoms include shortness of breath and difficulty breathing. Symptoms may be delayed for several hours. Neurobehavioural effects, such as impaired short-term memory and unsteady balance, may also be caused by inhalation of crude oil vapor.
Ingestion:	Crude oil vapor at high concentrations can displace oxygen in enclosed spaces and cause asphyxiation in exposed persons. Oxygen concentrations must not be allowed to fall below 19.5% (at normal pressure). Minimal toxicity may occur from ingestion. Aspiration (inadvertent suction) of liquid into the lung can produce chemical pneumonitis, pulmonary edema/hemorrhage and even death.
Chronic Health Effects:	Delayed Effects: Liver, kidney, blood, visual and auditory effects are possible. Dermatitis may occur. Possible neurological effects: difficulty in sleeping, concentrating, and remembering things. Prolonged exposure to hydrogen sulfide can result in "gas eyes" (sore eyes), with scratchiness, irritation, tearing and burning. Prolonged exposure to benzene can cause damage to the bone marrow and blood cells, which may result in leukemia or anemia.
Aggravation of Pre-Existing Conditions:	Pre-existing skin, eye and respiratory disorders may be aggravated by exposure to components of crude oil.

[To Top of page](#) 

SECTION 4 : FIRST AID MEASURES

: (N/A)

Eye Contact:	Flush contaminated eye with large amounts of lukewarm, gently flowing water. Take care to avoid contamination of unaffected eye. If symptoms persist, or if irritation occurs, contact a physician.
Skin Contact:	Wash affected areas with warm soapy water. Remove contaminated clothing as soon as possible. If irritation is severe or prolonged, seek medical advice.
Inhalation:	Remove victim to fresh air using proper precautions. If breathing has stopped, administer artificial respiration. If the heart has stopped beating, administer cardiopulmonary resuscitation (CPR) immediately. For victims of hydrogen sulfide (H ₂ S) exposure, administration of oxygen may be beneficial. Obtain medical attention promptly.
Ingestion:	DO NOT induce vomiting since it is important that no amount of the material should be aspirated into the lungs. If vomiting occurs, lower victim's head to prevent vomitus from entering the lungs. DO NOT give liquids. Keep victim at rest. Get medical help immediately.

[To Top of page](#) 

SECTION 5 : FIRE FIGHTING MEASURES

: (N/A)

Flash Point:	< 50 deg F
Flash Point Method:	PMCC

Upper Flammable or Explosive Limit:	(%volume): No Data Available
Lower Flammable or Explosive Limit:	(%volume): No Data Available
Auto Ignition Temperature:	No Data Available
Extinguishing Media:	Means of Extinction: Use Class B fire extinguishers, such as foam or dry chemical. Use water spray to cool fire-exposed containers or to disperse vapors from a spill or leak that has not been ignited. Fire fighting should only be attempted by those who are adequately trained and equipped with proper protective equipment.
Unusual Fire Hazards:	This material has been determined to be a flammable liquid. Vapors may travel considerable distances along the ground or be moved by ventilation and ignited by many sources such as pilot lights, sparks, electric motors, static discharge or other ignition sources. Flashback may occur along the vapor trail. All storage containers and other equipment must be grounded.
Hazardous Decomposition Byproducts:	Carbon monoxide, carbon dioxide, sulfur oxides, hydrogen sulfide or other hydrocarbons.

[To Top of page](#) 

SECTION 6 : ACCIDENTAL RELEASE MEASURES : (N/A)

Spill Cleanup Measures:	Isolate the area and restrict access until cleanup is completed. Ensure that cleanup is conducted only by trained personnel using adequate personal protective equipment. Eliminate all sources of ignition. Ventilate area. Stop or reduce flow of product if this can be done without risk. Prevent liquid from entering drains and sewers.
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[To Top of page](#) 


SECTION 7 : HANDLING and STORAGE : (N/A)

Handling:	Comply with all applicable OSHA, NFPA and local requirements. Use appropriate bonding and ground practices. Eliminate all sources of ignition. Use explosion-proof equipment, intrinsically safe electrical systems, and non-sparking tools. Do not pressurize, cut, heat or weld empty containers. Exercise care in tank gauging or similar operations as overheating could cause high concentrations of H ₂ S to accumulate in the headspace of containers.
Storage:	Store in properly closed containers that are appropriately labeled in a cool, well-ventilated area.

[To Top of page](#) 

SECTION 8 : EXPOSURE CONTROLS, PERSONAL PROTECTION : (N/A)


Engineering Controls:	Local or general exhaust ventilation is required in enclosed areas or in areas with inadequate ventilation. Exposure Control: General or local exhaust ventilation will prevent accumulations of vapors. Provide mechanical ventilation of confined spaces. Use explosion proof ventilation and monitoring equipment.
Skin Protection Description:	Use chemical resistant gloves such as Nitrile or Neoprene, if direct contact with liquid is likely to occur.
Eye/Face Protection:	Use safety glasses for all conditions. Where splashing is possible, wear goggles.
Respiratory Protection:	Respiratory protection is not normally required for routine operations. Supplied air respirators are required for atmospheres that contain concentrations exceeding 10 ppm of hydrogen sulfide. Respirators with organic vapor cartridges should be used with benzene concentrations exceed 1 ppm.

[To Top of page](#) 

SECTION 9 : PHYSICAL and CHEMICAL PROPERTIES : (N/A)

Physical State/Appearance:	Liquid
Color:	Amber to black
Odor:	Mild hydrocarbon or rotten eggs
Physical State:	Liquid
Vapor Pressure:	Reid: 4 - 9 psi @ 100 deg F
Vapor Density:	Variable
Boiling Point:	80 - 170 deg F
Specific Gravity:	< 1 (Water = 1)

Density:	API Gravity @ 60 deg F: 30 - 50 @ 15 deg C: 780 - 875
Percent Volatile:	2% - 5% over 24 hours at 70 deg F
Odor Threshold:	0.13 ppm for H2S *Do not rely on odor to detect hydrogen sulfide. It paralyses the sense of smell at about 100 ppm.

[To Top of page](#) 

SECTION 10 : STABILITY and REACTIVITY : (N/A)

Chemical Stability:	This material is stable.
Incompatibilities with Other Materials:	Oxidizing materials.
Reactivity:	Reactivity Conditions: Heat or ignition sources may ignite product.
Hazardous Polymerization:	Hazardous polymerization will not occur.

[To Top of page](#) 

SECTION 11 : TOXICOLOGICAL INFORMATION : (N/A)

Applies to all ingredients:

Carcinogenicity:	Some crude oils have been found to be carcinogenic in animal tests, but the major cancer research assessment agencies - IARC and ACGIH - have not classified crude oil as a carcinogen.
Sensitization:	Components are not known to cause sensitization.
Irritation:	May cause skin, eye, and respiratory tract irritation.
Other Toxicological Information:	Synergistic Materials: The presence of one or more of benzene, toluene, xylene, or alcohol slows the clearance of the others from the body.

Benzene :

Carcinogenicity:	Benzene is listed in the National Toxicology Program (NTP) 10th Report on Carcinogens as "known to be a human carcinogen". The International Agency for Research on Cancer (IARC) Monographs lists benzene under Group 1: the agent is carcinogenic to humans.
Mutagenicity:	Benzene is known to cause genetic damage.
Teratogenicity:	Benzene has been shown to cause fetotoxic effects in animal studies.

[To Top of page](#) 

SECTION 12 : ECOLOGICAL INFORMATION : (N/A)

Ecological Paragraph:	Coating action of oil can destroy birds, plankton, algae and fish. Keep out of all bodies of water and sewage drainage systems.
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[To Top of page](#) 

SECTION 13 : DISPOSAL CONSIDERATIONS : (N/A)

Waste Disposal:	Samples should be taken to ensure appropriate characterization. Dispose according to applicable federal, provincial or state and local regulations. This material may meet the criteria of an "ignitable" hazardous waste or could contain benzene at levels that could exhibit the characteristics of "toxicity" as determined by the toxicity characteristic leaching procedure (TCLP). It is the responsibility of the user to determine if the disposal material is hazardous.
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[To Top of page](#) 

SECTION 14 : TRANSPORT INFORMATION : (N/A)

DOT Shipping Name:	Petroleum Crude Oil
DOT UN Number:	PIN: UN 1267
DOT Hazard Class:	3
DOT Packing Group:	II

[To Top of page](#) 

SECTION 15 : REGULATORY INFORMATION : (N/A)

Applies to all ingredients:

TSCA 8(b): Inventory Status:

SARA:

OSHA 29 CFR 1200:

EPA Toxic Substances Control Act (40 CFR 710)

EPA SARA III (Superfund Amendments and Reauthorization Act)

This mixture has been tested as a whole to determine its hazards under the OSHA Hazard Communication Standard in 29 CFR 1910.1200.

OSHA Hazard Communication Standard (29 CFR 1910.1200)

The above regulations apply to this product

[To Top of page](#) 

SECTION 16 : ADDITIONAL INFORMATION

: (N/A)

HMIS:

Health Hazard: 1 = Slight (Blue)
Fire Hazard: 3 = Serious (Red)
Reactivity: 0 = Minimal (Yellow)

NFPA:

Health: 1 = Slight (Blue)
Fire Hazard: 3 = Serious (Red)
Reactivity: 0 = Minimal (Yellow)
Specific Hazard: None (White)

MSDS Revision Date: June 5, 2003

MSDS Author: Prepared by:
Terasen Pipelines (USA) Inc.
Health, Environment & Safety Department
Phone Number: (307) 233-6160

Disclaimer:

Information given herein is offered in good faith as accurate, but without guarantee. Conditions of use and suitability of the product for particular uses are beyond the control of the supplier. Certain parts of the information have been obtained from sources outside of the supplier and while the supplier believes such information to be correct, it cannot guarantee its accuracy or completeness. The supplier makes no warranties, guarantees or conditions expressed or implied in respect to the information contained herein.

Hazard Rating:

0 = Minimal
1 = Slight
2 = Moderate
3 = Serious
4 = Severe

Acronyms:

ACGIH: American Conference of Governmental Industrial Hygienists
DOT: Department of Transportation
H₂S: Hydrogen Sulfide
IARC: International Agency for Research on Cancer
LEL: Lower Explosive Limit
N/A: Not Applicable
NFPA: National Fire Protection Association
NIOSH: National Institute for Occupational Safety & Health
OSHA: Occupational Safety and Health Administration
PIN: Product Identification Number
PMCC: Pensky-Martin Closed Cup Test
STEL: Short Term Exposure Limit
UEL: Upper Explosive Limit
UN: United Nations

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[To Top of page](#) 