

Material Safety Data Sheet

Trade Name: CRUDE OIL, SWEET

Manufacturer:

MSDS Code:

Type of Chemical:

Notes:

Revision Date: PETROLEUM CRUDE OIL - SWEET

MSDS No. 03885 US/ENGLISH

SECTION 1 CHEMICAL PRODUCT AND COMPANY IDENTIFICATION

MANUFACTURER/SUPPLIER: EMERGENCY HEALTH INFORMATION:

SUBSTANCE: PETROLEUM CRUDE OIL - SWEET

TRADE NAMES/SYNONYMS:

CRUDE OIL; SWEET CRUDE OIL; ROCK OIL; SENECA OIL; PROCESS STREAM;
CONDENSATE;
S-041; CE2; AA3; 1037

SECTION 2 COMPOSITION, INFORMATION ON INGREDIENTS

COMPONENT: CRUDE OIL

CAS NUMBER: 8002-05-9

EC NUMBER (EINECS): 232-298-5

PERCENTAGE: 100

COMPONENT: BENZENE

CAS NUMBER: 71-43-2

EC NUMBER (EINECS): 200-753-7

PERCENTAGE: 0-2

COMPONENT: HYDROGEN SULFIDE

CAS NUMBER: 7783-06-4

EC NUMBER (EINECS): 231-977-3

PERCENTAGE: <1

(See Section 8, "Exposure Controls, Personal Protection", for exposure guidelines)

SECTION 3 HAZARDS IDENTIFICATION

NFPA RATINGS (SCALE 0-4): HEALTH=1 FIRE=3 REACTIVITY=0

EMERGENCY OVERVIEW:

COLOR: brown to black

PHYSICAL FORM: oil

ODOR: petroleum odor

SIGNAL WORD: DANGER!

MAJOR HEALTH HAZARDS: Extremely flammable. Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness, and nausea, and may lead to unconsciousness or death. Harmful or fatal if liquid is aspirated into the lungs. Prolonged or repeated contact can defat the skin and lead to irritation and/or dermatitis. Contains Benzene.

Cancer hazard. Can cause blood disorders. Harmful when absorbed through the skin. May release hydrogen sulfide which can be harmful or fatal.

PHYSICAL HAZARDS: Extremely flammable liquid and vapor. Vapor may cause flash fire.

POTENTIAL HEALTH EFFECTS:

INHALATION:

Inhalation of vapor/aerosol concentrations above the recommended exposure limits causes headaches, drowsiness, and nausea, and may lead to unconsciousness or death. Can cause respiratory irritation. Cancer hazard. Can cause blood disorders. Vapors containing hydrogen sulfide may accumulate during storage or transport. Harmful or fatal if inhaled.

SKIN CONTACT:

Prolonged or repeated contact can defat the skin and lead to irritation and /or dermatitis. Cancer hazard. Can cause blood disorders. Possible cancer hazard based on skin painting studies in laboratory animals.

EYE CONTACT:

No significant health hazards identified.

INGESTION:

Harmful or fatal if liquid is aspirated into lungs. Ingestion causes gastrointestinal irritation and diarrhea.

SECTION 4 FIRST AID MEASURES

INHALATION: If adverse effects occur, remove to uncontaminated area. Give artificial respiration if not breathing. Get immediate medical attention.

SKIN CONTACT: Wash exposed skin with soap and water. Remove contaminated clothing and thoroughly clean and dry before reuse. Get medical attention if irritation develops.

EYE CONTACT: Flush eyes with plenty of water. Get medical attention if irritation persists.

INGESTION: If swallowed, drink plenty of water, do NOT induce vomiting. Get immediate medical attention.

SECTION 5 FIRE FIGHTING MEASURES

FIRE AND EXPLOSION HAZARDS: Severe fire hazard. Vapor/air mixtures are explosive above flash point. The vapor is heavier than air. Vapors or gases may ignite at distant ignition sources and flash back.

EXTINGUISHING MEDIA: regular dry chemical, carbon dioxide, water, regular foam

Large fires: Use regular foam or flood with fine water spray.

FIRE FIGHTING: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. For fires in cargo or storage area: Cool containers with water from unmanned hose holder or monitor nozzles until well after fire is out. If this is impossible then take the following precautions: Keep unnecessary people away, isolate hazard area and deny entry. Let the fire burn. Withdraw immediately in case of rising sound from venting safety device or any discoloration of tanks due to fire. For tank, rail car or tank truck: Evacuation radius: 800 meters (1/2 mile). Water may be ineffective. Water or foam may cause frothing.

FIRE FIGHTING PROTECTIVE EQUIPMENT: Firefighters should wear full bunker gear, including a positive pressure self contained breathing apparatus.

FLASH POINT: -45.0 to 212 F (-42.8 to 100 C)

HAZARDOUS COMBUSTION PRODUCTS:

Thermal decomposition products or combustion: hydrocarbons, hydrogen sulfide, oxides of carbon, oxides of sulfur

SECTION 6 ACCIDENTAL RELEASE MEASURES

Avoid heat, flames, sparks and other sources of ignition. Stop leak if possible without personal risk. Reduce vapors with water spray. Small spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal. Large spills: Dike for later disposal. Remove sources of ignition. Keep unnecessary people away, isolate hazard area and deny entry. Notify Local Emergency Planning Committee and State Emergency Response Commission for release greater than or equal to RQ (U.S. SARA Section 304). If release occurs in the U.S. and is reportable under CERCLA Section 103, notify the National Response Center at (800)424-8802 (USA) or (202)426-2675 (USA).

SECTION 7 HANDLING AND STORAGE

STORAGE: Avoid heat, flames, sparks and other sources of ignition. Grounding and bonding required. Keep container tightly closed. Store in a well-ventilated area.

HANDLING: Keep away from all ignition sources. Keep container tightly closed. Use only with adequate ventilation. Ground and bond containers when transferring materials. After this container has been emptied, it may contain product residue; observe all warnings and precautions listed for this product. **SPECIAL PRECAUTIONS:** Empty containers may contain toxic, flammable/combustible or explosive residue or vapors. Do not cut, grind, drill, weld, reuse or dispose of containers unless adequate precautions are taken against these hazards. Do not eat, drink or smoke in areas of use or storage. Use good personal hygiene practices. Wash hands before eating, drinking, smoking or using toilet facilities. Remove contaminated clothing and thoroughly clean and dry before reuse. Wash thoroughly after work using soap and water.

SECTION 8 EXPOSURE CONTROLS, PERSONAL PROTECTION

EXPOSURE LIMITS:

PETROLEUM CRUDE OIL - SWEET:

MINERAL OIL MIST:

5 mg/m³ OSHA TWA

5 mg/m³ ACGIH TWA

10 mg/m³ ACGIH STEL

5 mg/m³ MEXICO TWA

10 mg/m³ MEXICO STEL

BENZENE:

1 ppm OSHA TWA

5 ppm OSHA STEL 15 minute(s)

0.5 ppm OSHA action level

0.5 ppm ACGIH TWA (skin)

2.5 ppm ACGIH STEL (skin)

10 ppm (30 mg/m³) MEXICO TWA

25 ppm (75 mg/m³) MEXICO STEL

HYDROGEN SULFIDE:

20 ppm OSHA ceiling

50 ppm OSHA peak 10 minute(s) (once if no other measurable exposure occurs)

10 ppm (14 mg/m³) OSHA TWA (vacated by 58 FR 35338, June 30, 1993)

15 ppm (21 mg/m³) OSHA STEL (vacated by 58 FR 35338, June 30, 1993)

10 ppm ACGIH TWA

15 ppm ACGIH STEL

10 ppm (14 mg/m³) MEXICO TWA

15 ppm (21 mg/m³) MEXICO STEL

VENTILATION: Control airborne concentrations below the exposure guidelines.

EYE PROTECTION: None required; however, use of eye protection is good industrial practice.

CLOTHING: Do not get on skin or clothing. Wear protective clothing, including shoes that cannot be penetrated by chemicals or oil, if prolonged or repeated contact is likely. Wash thoroughly after handling.

GLOVES: Wear gloves that cannot be penetrated by chemicals or oil.

RESPIRATOR: Use with adequate ventilation. Avoid breathing vapor and/or mist. If ventilation is inadequate, use a NIOSH certified respirator with an organic vapor cartridge and P95 particulate filter.

SECTION 9 PHYSICAL AND CHEMICAL PROPERTIES

PHYSICAL STATE: liquid

COLOR: brown to black

TEXTURE: viscous

PHYSICAL FORM: oil

ODOR: petroleum odor

BOILING POINT: 0.0-1000.0 F (-17.8 to 537.8 C)

FREEZING POINT: -76 to -4 F (-60 to -20 C)

VAPOR PRESSURE: >0.36 kPa @ 20 C

VAPOR DENSITY (air=1): >1.0

SPECIFIC GRAVITY (water=1): 0.74-1.03

WATER SOLUBILITY: <0.1%

PH: Not available

VOLATILITY: variable

ODOR THRESHOLD: Not available
EVAPORATION RATE: Not available
VISCOSITY: 31-9000 SUS @ 20 C (varies)
COEFFICIENT OF WATER/OIL DISTRIBUTION: Not available
SOLVENT SOLUBILITY:
Soluble: benzene, chloroform, ether, organic solvents
Slightly Soluble: alcohol

SECTION 10 STABILITY AND REACTIVITY

REACTIVITY: Stable at normal temperatures and pressure.

CONDITIONS TO AVOID: Avoid heat, flames, sparks and other sources of ignition. Containers may rupture or explode if exposed to heat. Keep out of water supplies and sewers. Dangerous gases may accumulate in confined spaces.

INCOMPATIBILITIES: halogens, oxidizing materials

HAZARDOUS DECOMPOSITION:

Thermal decomposition products or combustion: hydrocarbons, hydrogen sulfide, oxides of carbon, oxides of sulfur

POLYMERIZATION: Will not polymerize.

SECTION 11 TOXICOLOGICAL INFORMATION

EYE IRRITATION: Testing not conducted. See Other Toxicity Data.

SKIN IRRITATION: Testing not conducted. See Other Toxicity Data.

DERMAL LD50: Testing not conducted. See Other Toxicity Data.

ORAL LD50: Testing not conducted. See Other Toxicity Data.

INHALATION LC50: Testing not conducted. See Other Toxicity Data.

OTHER TOXICITY DATA:

Specific toxicity tests have not been conducted on this product. Our hazard evaluation is based on information from similar products, the ingredients, technical literature, and/or professional experience.

Crude oil is a naturally occurring complex mixture of hydrocarbons whose exact composition and physical properties can vary widely depending upon its source.

SKIN: Repeated or prolonged contact may result in defatting, oil acne, redness, itching, inflammation, cracking and possible secondary infections.

From skin-painting studies in laboratory animals, it has been concluded that most, if not all, petroleum crudes, regardless of source, possess carcinogenic activity to some degree. This means that workers who practice poor personal hygiene and who are repeatedly exposed by direct skin contact to crude oil over many years may potentially be at risk of developing skin cancer. However, intermittent or occasional skin contact with petroleum crude oils is not expected to have serious health effects as long as good personal hygiene measures such as those outlined in this material safety data sheet are followed. Crude oil has not been identified as a carcinogen by NTP, IARC or OSHA.

Hydrogen sulfide (H₂S) gas may accumulate in storage tanks of bulk transport compartments containing this material. Contact with eyes causes painful conjunctivitis, sensitivity to light, tearing and clouding of vision. Inhalation of low concentrations causes a runny nose with a loss of sense of smell, labored breathing and shortness of breath. Direct contact with skin causes pain and redness. Other symptoms of exposure include profuse salivation, nausea, vomiting, diarrhea, giddiness, headache, dizziness, confusion, rapid breathing, rapid heart rate, sweating, weakness, sudden collapse, unconsciousness and death due to respiratory paralysis. Cardiac neurological effects have also been reported. Prolonged breathing (greater than one hour) of concentrations of H₂S around 50 ppm can produce eye and respiratory tract irritation. Levels of 250 to 600 ppm will result in fluid in the lungs, and concentrations around 1,000 ppm will cause unconsciousness and death in a short period of time. Since the sense of smell rapidly becomes insensitive to this toxic, colorless gas, odor cannot be relied upon as an indicator of concentrations of the gas. Always exercise caution when working around closed containers.

Aspiration of this product into the lungs can cause chemical pneumonia and can be fatal. Aspiration into the lungs can occur while vomiting after ingestion of this product.

Crude oils contain small, variable amounts of Benzene. Acute toxicity of benzene results primarily from depression of the central nervous system (CNS). Inhalation of concentrations over 50 ppm can produce headache, lassitude, weariness, dizziness, drowsiness, or excitation. Exposure to very high levels can result in unconsciousness and death. Long-term overexposure to benzene has been associated with certain types of leukemia in humans. In addition, the International Agency for Research on Cancer (IARC), the National Toxicology Program, and OSHA consider benzene to be a human carcinogen. Chronic exposures to benzene at levels of 100 ppm and below have been reported to cause adverse blood effects including anemia. Benzene exposure can occur by inhalation and absorption through the skin. Inhalation and forced feeding studies of benzene in laboratory animals have produced a carcinogenic response in a variety of organs, including possibly leukemia, other adverse effects on the blood, chromosomal changes and some effects on the immune system. Exposure to benzene at levels up to 300 ppm did not produce birth defects in animal studies; however, exposure to the higher dosage levels (greater than 100 ppm) resulted in a reduction of body weight of the rat pups (fetotoxicity). Changes in the testes have been observed in mice exposed to benzene at 300 ppm, but reproductive performance was not altered in rats exposed to benzene at the same level.

SECTION 12 ECOLOGICAL INFORMATION

None

SECTION 13 DISPOSAL CONSIDERATIONS

Dispose in accordance with all applicable regulations. Subject to disposal regulations: U.S. EPA 40 CFR 262. Hazardous Waste Number(s): D001.

SECTION 14 TRANSPORT INFORMATION

U.S. DOT 49 CFR 172.101 SHIPPING NAME-ID NUMBER:

Petroleum crude oil-UN1267

U.S. DOT 49 CFR 172.101 HAZARD CLASS OR DIVISION:
3

U.S. DOT 49 CFR 172.101 PACKING GROUP:
II

U.S. DOT 49 CFR 172.101 AND SUBPART E LABELING REQUIREMENTS:
Flammable liquid

U.S. DOT 49 CFR 172.101 PACKAGING AUTHORIZATIONS:
EXCEPTIONS: 49 CFR 173.150
NON-BULK PACKAGING: 49 CFR 173.202
BULK PACKAGING: 49 CFR 173.242

U.S. DOT 49 CFR 172.101 QUANTITY LIMITATIONS:
PASSENGER AIRCRAFT OR RAILCAR: 5 L
CARGO AIRCRAFT ONLY: 60 L

CANADIAN TDG SHIPPING NAME-ID NUMBER:
Petroleum crude oil-UN1267

CANADIAN TDG HAZARD CLASS OR DIVISION:
3

CANADIAN TDG PACKING GROUP:
II

LAND TRANSPORT ADR/RID:
SUBSTANCE NAME: Petroleum crude oil
ID NUMBER: UN1267
ADR/RID CLASS: 3
ITEM NUMBER: 2(b)
WARNING SIGN/LABEL: 3
HAZARD ID NUMBER: 33

AIR TRANSPORT IATA/ICAO:
SHIPPING NAME: Petroleum crude oil
ID NUMBER: UN1267
IATA/ICAO CLASS: 3
PACKAGING GROUP: II
LABEL: Flammable liquid

MARITIME TRANSPORT IMDG:
CORRECT TECHNICAL NAME: Petroleum crude oil
ID NUMBER: UN1267
IMDG CLASS: 3.1
PACKAGING GROUP: II
EmS No.: 3-07
MFAG Table No.: 311
IMDG CODE PAGE: 3141

SECTION 15 REGULATORY INFORMATION

CERCLA SECTIONS 102a/103 HAZARDOUS SUBSTANCES (40 CFR Part 302.4): This product is reportable under 40 CFR Part 302.4 because it contains the following substance(s):

HYDROGEN SULFIDE: 100 LBS RQ
Benzene: 10 LBS RQ

SARA TITLE III SECTION 302 EXTREMELY HAZARDOUS SUBSTANCES (40 CFR Part 355):
HYDROGEN SULFIDE: 500 LBS TPQ

SARA SECTION 304 (40CFR355.40):
HYDROGEN SULFIDE: 100 LBS RQ

SARA TITLE III SECTION 311/312 HAZARDOUS CATEGORIZATION (40 CFR Part 370):
ACUTE: Y
CHRONIC: Y
FIRE: Y
REACTIVE: N
SUDDEN RELEASE: N

SARA TITLE III SECTION 313 (40 CFR Part 372): This product contains the following substance(s), which is on the Toxic Chemicals List in 40 CFR Part 372:
HYDROGEN SULFIDE
Benzene

STATE REGULATIONS:
California Proposition 65: Y
Known to the state of California to cause the following:
Benzene
Cancer (Feb 27, 1987)
Developmental toxicity (Dec 26, 1997)
Male reproductive toxicity (Dec 26, 1997)

U.S. INVENTORY (TSCA): Listed on inventory.

EC INVENTORY (EINECS/ELINCS): In compliance.

JAPAN INVENTORY (MITI): Listed on inventory.

AUSTRALIA INVENTORY (AICS): Listed on inventory.

KOREA INVENTORY (ECL): Not determined.

CANADA INVENTORY (DSL): Listed on inventory.

PHILIPPINE INVENTORY (PICCS): Not determined.

CHINA INVENTORY (IECS): Not determined.

SECTION 16 OTHER INFORMATION

Prepared by: Product Stewardship and Toxicology

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This Material Safety Data Sheet conforms to the requirements of ANSI Z400.1.
NOTICE: The information presented herein is based on data considered to be accurate as of the date of preparation of this Material Safety Data Sheet. However, no warranty or representation, express or implied, is made as to the accuracy or completeness of the foregoing data and safety information, nor is any authorization given or implied to practice any patented invention without a license. In addition, no responsibility can be assumed by vendor for any damage or injury resulting from abnormal use, from any failure to adhere to recommended

practices, or from any hazards inherent in the nature of the product.