1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME: SOUR CRUDE OIL
SUPPLIER: EXXONMOBIL OIL CORPORATION
3225 GALLOWS RD.
FAIRFAX, VA 22037
24 - Hour Emergency (call collect): 609-737-4411
Product and MSDS Information: 800-662-4525 703-846-6693
CHEMTREC: 800-424-9300 202-483-7616

2. COMPOSITION/INFORMATION ON INGREDIENTS

CHEMICAL NAMES AND SYNONYMS: PETROLEUM CRUDE OIL
INGREDIENTS CONSIDERED HAZARDOUS TO HEALTH:

<table>
<thead>
<tr>
<th>Substance Name</th>
<th>Wt%</th>
</tr>
</thead>
<tbody>
<tr>
<td>PETROLEUM CRUDE OIL (8002-05-9)</td>
<td>100</td>
</tr>
</tbody>
</table>

COMPONENT(S) OF PRODUCT INGREDIENTS INCLUDE:
BENZENE (71-43-2) > 0.1
HYDROGEN SULPHIDE (7783-06-4) > 0.002

NOTE: Crude oils may contain varying concentrations of hydrogen sulfide depending on gas stripping operations. Hydrogen sulfide is highly toxic, keep face clear of tank or tank car openings. Do not enter enclosed or confined spaces without proper respiratory protection, particularly holds of ships and pump rooms. See Section 8 for exposure limits (if applicable).

3. HAZARDS IDENTIFICATION

US OSHA HAZARD COMMUNICATION STANDARD: Product assessed in accordance with OSHA 29 CFR 1910.1200 and determined to be hazardous.

EFFECTS OF OVEREXPOSURE: *** Note: This product contains polycyclic aromatic compounds (PACs). Under conditions of poor personal hygiene and prolonged repeated contact, some PACs have been suspected as a cause of cancer in humans. *** Warning: H2S a highly toxic gas may be present, see MSDS toxicology section. H2S is highly toxic and is absorbed through the mucous membranes of the respiratory tract causing respiratory paralysis and suffocation. Symptoms of overexposure include headache, fatigue, insomnia, irritability and gastrointestinal problems. Loss of sense of smell at 100 ppm drowsiness, loss of consciousness, respiratory failure or death can result from exposure above 100 ppm. Overexposure to benzene can result in blood disorders and damage to the bone marrow. In rare instances leukemia has also been reported. At very high levels of exposure, kidney and liver damage could occur. Skin irritation. Respiratory irritation, dizziness, nausea, loss of consciousness.

EMERGENCY RESPONSE DATA: Black Liquid. Flammable. Vapor accumulation could flash and/or explode if ignited. Exposure to fire can generate highly toxic fumes. Hydrogen sulfide, an extremely flammable, very toxic gas, may be present. DOT ERG No.: 128

4. FIRST AID MEASURES

EYE CONTACT: Flush thoroughly with water. If irritation occurs, call a physician.
SKIN CONTACT: Remove contaminated clothing. Dry wipe exposed skin and cleanse yourself with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing
assistance, avoid further contact to yourself or others. Wear impervious gloves. Launder contaminated clothing separately before reuse. Discard contaminated articles that cannot be laundered.

INHALATION: Immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself and others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a bag-valve-mask device.

INGESTION: Seek immediate medical attention. Do not induce vomiting. NOTE TO PHYSICIANS: Hydrogen sulfide is strongly bound to hemoglobin in a manner similar to cyanide. Administration of sodium nitrite would produce methemoglobinemia which MAY partially inactivate this poison.

5. FIRE-FIGHTING MEASURES

EXTINGUISHING MEDIA: Carbon dioxide, foam, dry chemical and water fog.

SPECIAL FIRE FIGHTING PROCEDURES: Use water to keep fire exposed containers cool. If a leak or spill has not ignited, use water spray to disperse vapors and to protect personnel attempting to stop leak. Water spray may be used to flush spills away from exposures. Prevent runoff from fire control or dilution from entering streams, sewers, or drinking water supply.

SPECIAL PROTECTIVE EQUIPMENT: Fire fighters must use positive pressure breathing apparatus, due to possible release of toxic fumes.

UNUSUAL FIRE AND EXPLOSION HAZARDS: Flammable. Vapor accumulation could flash and/or explode if ignited. Exposure to fire can generate highly toxic fumes. Hydrogen sulfide, an extremely flammable, very toxic gas, may be present. Flash Point C(F): > -18(0) (ASTM D-56). Flammable limits - LEL: 0.6% UEL: 7.0%

NFPA HAZARD ID: Health: 3, Flammability: 3, Reactivity: 0

6. ACCIDENTAL RELEASE MEASURES

NOTIFICATION PROCEDURES: Report spills as required to appropriate authorities. U.S. Coast Guard regulations require immediate reporting of spills that could reach any waterway including intermittent dry creeks. Report spill to Coast Guard toll free number (800) 424-8802. In case of incident or road spill notify CHEMTREC (800) 424-9300.

PROCEDURES IF MATERIAL IS RELEASED OR SPILLED: Adsorb on fire retardant treated sawdust, diatomaceous earth, etc. For large spills: Contain material and pump back to holding tank for later disposal. Eliminate all ignition sources. Remove leaking containers to detached area. For large spills, self-contained breathing apparatus must be worn during cleanup.

ENVIRONMENTAL PRECAUTIONS: Prevent spills from entering storm sewers or drains and contact with soil.

PERSONAL PRECAUTIONS: See Section 8

7. HANDLING AND STORAGE

HANDLING: Significant amounts of Hydrogen Sulfide are present. Keep face clear of tank and/or tank car openings. Avoid contact with skin. Avoid inhalation of vapors or mists. Use in well ventilated area away from all ignition sources. Avoid sparking conditions. Ground and bond all transfer equipment.

STORAGE: Drums must be grounded and bonded and equipped with self-closing valves, pressure vacuum bungs and flame arresters. Store away from all ignition sources in a cool area equipped with an automatic sprinkling system. Outside or detached storage preferred. Storage containers should be grounded and bonded.

8. EXPOSURE CONTROLS/PERSOINAL PROTECTION
VENTILATION: Ventilation required and equipment must be explosion proof. Use away from all ignition sources.

RESPIRATORY PROTECTION: Approved respiratory protective equipment must be used in high vapor or mist concentrations. Use approved respiratory protective equipment in spaces where H2S vapors may accumulate.

EYE PROTECTION: Normal industrial eye protection practices should be employed.

SKIN PROTECTION: Impervious gloves should be worn.

OTHER: Expect H2S to be present. Supplied air respirator required in contaminated areas.

<table>
<thead>
<tr>
<th>Substance Name (CAS-No.)</th>
<th>Source</th>
<th>TWA (ppm mg/m³)</th>
<th>STEL (ppm mg/m³)</th>
<th>NOTE</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE (71-43-2)</td>
<td>OSHA</td>
<td>1</td>
<td>5</td>
<td></td>
</tr>
<tr>
<td></td>
<td>ACGI H</td>
<td>0.5</td>
<td>1.6</td>
<td>2.5</td>
</tr>
<tr>
<td></td>
<td>XOM</td>
<td>1</td>
<td></td>
<td></td>
</tr>
<tr>
<td>HYDROGEN SULPHIDE (7783-06-4)</td>
<td>OSHA</td>
<td>10</td>
<td>14</td>
<td>15</td>
</tr>
<tr>
<td></td>
<td>ACGI H</td>
<td>10</td>
<td>14</td>
<td>15</td>
</tr>
</tbody>
</table>

NOTE: Limits shown for guidance only. Follow applicable regulations.

9. PHYSICAL AND CHEMICAL PROPERTIES

Typical physical properties are given below. Consult Product Data Sheet for specific details.

APPEARANCE: Liquid
COLOR: Black
ODOR: Hydrogen Sulfide
ODOR THRESHOLD ppm NE
pH: NA
BOILING POINT C(F): > -18(0)
MELTING POINT C(F): NA
FLASH POINT C(F): > -18(0) (ASTM D-56)
FLAMMABILITY: NE
AUTO FLAMMABILITY: NE
EXPLOSIVE PROPERTIES: NA
OXIDIZING PROPERTIES: NA
VAPOR PRESSURE mmHg 20 C: < 300.0
VAPOR DENSITY: NE
RELATIVE DENSITY: cSt:
POUR POINT C(F): NA
FREEZING POINT C(F): NA
VOLATILE ORGANIC COMPOUND: NE
NA=NOT APPLICABLE NE=NOT ESTABLISHED D=DECOMPOSES

FOR FURTHER TECHNICAL INFORMATION, CONTACT YOUR MARKETING REPRESENTATIVE

10. STABILITY AND REACTIVITY

STABILITY (THERMAL, LIGHT, ETC.): Stable.
CONDITIONS TO AVOID: Heat, sparks, flame and build up of static electricity.
INCOMPATIBILITY (MATERIALS TO AVOID): Strong oxidizers.
HAZARDOUS POLYMERIZATION: Will not occur.

11. TOXICOLOGICAL DATA

--- ACUTE TOXICOLOGY ---
ORAL TOXICITY (RATS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

DERMAL TOXICITY (RABBITS): Practically non-toxic (LD50: greater than 2000 mg/kg). ---Based on testing of similar products and/or the components.

INHALATION TOXICITY (RATS): Toxic (LC50: 0.5 or greater but 2 mg/l or less). ---Based on testing of similar products and/or the components.

EYE IRRITATION (RABBITS): Practically non-irritating. (Draize score: 0 or greater but 6 or less). ---Based on testing of similar products and/or the components.

SKIN IRRITATION (RABBITS): Irritant. (Primary Irritation Index: 3 or greater but less than 5). ---Based on testing of similar products and/or the components.

OTHER ACUTE TOXICITY DATA: H2S acts as a chemical asphyxiant, preventing the body from utilizing oxygen in the tissue. It can be irritating to the eyes at 10 ppm and to the respiratory tract at 50-100 ppm after 1-hour exposure. Sufficiently high concentrations can result in immediate collapse and death.

---GENETIC TOXICOLOGY (SUMMARY)---

***Positive ames test. Benzene was not mutagenic in most mutagenicity test systems, but has been reported to induce chromosomal changes in bone marrow and blood cells of some exposed workers.

---REPRODUCTIVE TOXICOLOGY (SUMMARY)---

Some animal studies suggest that exposure to high levels of benzene may result in growth retardation to the developing fetus. Some effects on reproductive organs in mice have also been reported. In most inhalation studies with laboratory animals, benzene did not result in any malformations or reproductive effects.

---CHRONIC TOXICOLOGY (SUMMARY)---

*Benzene - May contain benzene at greater than 0.1%. Animal studies with benzene by inhalation or by oral administration have resulted in evidence of carcinogenic effects in a number of tissues and organs, adverse effects on the immune system, chromosomal changes, anemia and possibly leukemia. Both NTP and IARC list benzene as a human carcinogen. Long-term exposure to benzene at <100 ppm has been reported to result in blood abnormalities in humans, including anemia and, in rare cases, leukemia. These effects may develop over months or years without warning symptoms.

***Skin tumorigenicity: Positive in mice.

---OTHER TOXICOLOGY DATA---

**** Keep face clear of tank and/or tank car openings. Hydrogen sulfide (H2S) may collect in the vapor space of tanks or other enclosed vessels. H2S is an extremely flammable, very highly toxic gas. H2S may not be detectable by odor. Do not enter confined spaces particularly ship holds and pump rooms without respiratory protection.

---ECOLOGICAL INFORMATION---

ENVIRONMENTAL FATE AND EFFECTS: Not established.

---DISPOSAL CONSIDERATIONS---

WASTE DISPOSAL: Product is suitable for burning in an enclosed, controlled burner for fuel value or disposal by supervised incineration or by other means. Such burning may be limited pursuant to the Resource Conservation and Recovery Act. In addition, the product is suitable for processing by an approved recycling facility or can be disposed of at an appropriate government waste disposal facility. Use of these methods is subject to user compliance with applicable laws and regulations and consideration of product characteristics at time of disposal.

RCRA INFORMATION: Disposal of unused product may be subject to RCRA regulations (40 CFR 261). Disposal of the used product may also be regulated due to ignitability, corrosivity, reactivity, or toxicity as determined by the Toxicity Characteristic Leaching Procedure (TCLP).

BENZENE: .1001 PCT (TCLP)
FLASH: >-18(0) C(F)
14. TRANSPORT INFORMATION

USA DOT:

SHIPPING NAME: Petroleum Crude Oil
HAZARD CLASS & DIV: 3
ID NUMBER: UN1267
ERG NUMBER: 128
PACKING GROUP: PG I
STCC: 4910165
DANGEROUS WHEN WET: No
POISON: No
LABEL(s): Flammable Liquid
PLACARD(s): Flammable
PRODUCT RQ: NA
MARPOL III STATUS: NA

IMO:

HAZARD CLASS & DIV: 3.2
UN NUMBER: 1267
PACKING GROUP: PG I
SHIPPING NAME: Petroleum Crude Oil
LABEL(s): Flammable Liquid
MARPOL III STATUS: NA

ICAO/IATA:

HAZARD CLASS & DIV: 3
ID/UN Number: 1267
PACKING GROUP: PG I
SHIPPING NAME: Petroleum Crude Oil
LABEL(s): Flammable Liquid
SUBSIDIARY RISK: NA

15. REGULATORY INFORMATION

Governmental Inventory Status: All components comply with TSCA, EINECS/ELINCS, AICS, and DSL.

U.S. Superfund Amendments and Reauthorization Act (SARA) Title III: This product contains no "EXTREMELY HAZARDOUS SUBSTANCES".

SARA (311/312) REPORTABLE HAZARD CATEGORIES: FIRE CHRONIC ACUTE

This product contains the following SARA (313) Toxic Release Chemicals:

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS NUMBER</th>
<th>CONC.</th>
</tr>
</thead>
<tbody>
<tr>
<td>POLYNUCLEAR AROMATIC HYDROCARBONS</td>
<td></td>
<td>0.1%</td>
</tr>
<tr>
<td>BENZENE (COMPONENT ANALYSIS)</td>
<td>71-43-2</td>
<td>0.1%</td>
</tr>
</tbody>
</table>

The following product ingredients are cited on the lists below:

<table>
<thead>
<tr>
<th>CHEMICAL NAME</th>
<th>CAS NUMBER</th>
<th>LIST CITATIONS</th>
</tr>
</thead>
<tbody>
<tr>
<td>BENZENE (COMPONENT ANALYSIS)</td>
<td>71-43-2</td>
<td>1, 2, 4, 6, 9, 16, 17, 22, 24, 25</td>
</tr>
<tr>
<td>HYDROGEN SULFIDE (COMPONENT ANALYSIS)</td>
<td>7783-06-4</td>
<td>1</td>
</tr>
<tr>
<td>PETROLEUM CRUDE OIL</td>
<td>8002-05-9</td>
<td>16, 19, 20, 21, 25, 26</td>
</tr>
</tbody>
</table>

--- REGULATORY LISTS SEARCHED ---

1=ACGIH ALL 2=ACGIH A1 3=ACGIH A2 4=NTP CARC 5=NTP SUS 6=IARC 1 7=IARC 2A 8=IARC 2B 9=OSHA CARC 10=OSHA Z 11=TSCA 4 12=TSCA 5a2 13=TSCA 5e 14=TSCA 6 15=TSCA 12b 16=CA P65 CARC 17=CA RTK 18=CA RTK 19=FL RTK 20=IL RTK 21=LA RTK 22=M 23=MN RTK 24=NJ RTK 25=PA RTK 26=RI RTK

Code key: CARC=Carcinogen; SUS=Suspected Carcinogen; REPRO=Reproductive

16. OTHER INFORMATION

Precautionary Label Text:
CONTAINS PETROLEUM CRUDE OIL, HYDROGEN SULFIDE
DANGER!
FLAMMABLE LIQUID AND VAPOR. HYDROGEN SULFIDE GAS IS TOXIC AND CAN CAUSE DROWSINESS, RESPIRATORY FAILURE AND DEATH AT LOW CONCENTRATIONS. MAY CAUSE SKIN CANCER AND IRRITATION ON PROLONGED, REPEATED CONTACT.

Keep away from heat, sparks, and flame. Avoid breathing mist or vapor. Avoid contact with skin. Hydrogen Sulfide deadens sense of smell.

FIRST AID: In case of contact, immediately flush eyes with plenty of water. Call a physician if irritation persists. In case of contact, remove contaminated clothing. Dry wipe the exposed skin and cleanse with waterless hand cleaner and follow by washing thoroughly with soap and water. For those providing assistance, avoid further skin contact to yourself and others. Wear impervious gloves. Wash or dispose of contaminated clothing. If inhaled, immediately remove from further exposure. Get immediate medical assistance. For those providing assistance, avoid exposure to yourself and others. Use adequate respiratory protection. Give supplemental oxygen, if available. If breathing has stopped, assist ventilation with a bag-valve-mask device. If swallowed, seek immediate medical attention. Do not induce vomiting. Only induce vomiting at the instruction of a physician.

Attention. Empty container may contain product residue, including flammable or explosive vapors. Do not cut, puncture, or weld on or near container. All label warnings and precautions must be observed until container has been thoroughly cleaned or destroyed.

This warning is given to comply with California Health and Safety Code 25249.6 and does not constitute an admission or a waiver of rights. This product contains a chemical known to the State of California to cause cancer, birth defects, or other reproductive harm. Refer to product Material Safety Data Bulletin for further safety and health information.

USE: CRUDE OIL
NOTE: PRODUCTS OF EXXON MOBIL CORPORATION AND ITS AFFILIATED COMPANIES ARE NOT FORMULATED TO CONTAIN PCBS.

<table>
<thead>
<tr>
<th>INGREDIENT DESCRIPTION</th>
<th>PERCENT</th>
<th>CAS NUMBER</th>
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<td>PETROLEUM CRUDE OIL</td>
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</table>

For Internal Use Only: MHC: 1* 1* 3* 0* 2*, MPPEC: DVF, TRN: 940528-00, CMCS97: 978259, REQ: US - MARKETING, SAFE USE: P
EHS Approval Date: 09OCT2001

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