US EPA RECORDS CENTER REGION 5
530237

CRUDE OIL AND SPCC INSPECTION SAFETY PLAN

ECOLOGY AND ENVIRONMENT, INC.
SAFETY PLAN

Office: Chicago **E & E Job #** ZT2051
TDD T05-9304-018A **PAN #** E05Z077CAA
DATE: / /

Incident Location:
Commonwealth Edison, Patterson Rd., Joliet, IL 60436
(815) 722-8900

Team Leader: _____ Date: / /
Site Safety Officer: _____ Date: / /
Approved by: _____ Date: / /

Incident Type: _ Spill _ Fire _ Hazardous Waste Site ✓ SPCC Insp.
If a hazardous waste site, give name: _____
Status:
Incident Response Objective:
✓ To perform a spill investigation and/or a SPCC Inspection
_ Other, Explain: _____
Background Review: _ Complete ✓ Partial
Documentation/Summary:
Overall Hazard: _ high _ moderate ✓ low _ unknown
Site sketch attached: _ yes ✓ no
Material Type (spill/waste/product) ✓ liquid _ sludge _ solid
_ gas/vapor
Potential Characteristics:
_ corrosive ✓ ignitable _ radioactive ✓ volatile
✓ toxic _ reactive _ biological agent
Dermal Toxicity: low Other: _____
ChemicalName(s): oil

Quantity Involved: unknown Source: N/A
Cause: N/A

INCIDENT/SITE DESCRIPTION: Size of property unknown
Number of Storage tanks unknown Buildings unknown
Tank size _____ gallons, How many _____
Tank size _____ gallons, How many _____
Tank size _____ gallons, How many _____
Tank size _____ gallons, How many _____
Receiving Waters/Tributaries: Des Plaines River

Unusual Features (e.g., Sensitive areas, Endangered Species): _____
unknown

History: no background information

Personnel Protection:
Level of protection: ___ A ___ B ___ C ✓ D
If downgraded, explain: _____

List specific protective clothing required:

1. steel toe boots 3. safety glasses 5. _____ 7. _____
2. hard hat 4. TLD Badges 6. _____ 8. _____

Field monitoring equipment and material required:
1. Camera 3. measuring wheel 5. _____ 7. _____
2. tape measure 4. _____ 6. _____ 8. _____

Decontamination Procedures:
Hotline Location: N/A

List of Equipment: (Material and level of protection required)
1. N/A 3. 5. 7.
2. 4. 6. 8.

Site Entry Procedure:

Team Members	Responsibilities
Karen Rydzewski	Team Leader/SSO

Special Instructions:
Avoid contact with oil. Observe safety protocol of facility and company. Monitor for H2S associated with crude oil when necessary.
Others: _____

Emergency Precautions:
Health Hazards: Low direct threat, but avoid contact with oil.

Acute Exposure Symptoms (if known): NONE KNOWN

First Aide Instructions: Wash with soap and water if exposed.
Others: _____

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Emergency Information Sources:

Fire Department: 911

Police: 911

Ambulance: 911

Hospital:

EPA Contact: Maureen O'Mara (312) 886-1960

Others: Mike Mangini, U.S. EPA
(312) 353-7625

Route to the hospital: _____

Emergency Telephone No.:

E & E Office: Chicago
EPA Region V Hotline: (312) 353-2318
Chicago: (312) 663-9415
Buffalo: (716) 632-4491
E & E Emergency Response Center: (716) 684-8940
ATATL: Pat Zwilling (Home) _____
(Office) (312) 663-9415
TATL: Tom Kouris (Home) (219) 924-1341
(Office) (312) 663-9415

Communications:

Nearest Telephone: TBD
Communication Used On-site: _____

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OCF	OILS: CLARIFIED

Common Synonyms --	Oily liquid -- Colorless -- Floats on water.

Stop discharge if possible.
Call fire department.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water.
Exposure	Not harmful.
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** No common synonyms

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** Not listed

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Data not available

4 3 **Odor:** Data not available

5 HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Goggles or face shield

5 2 **Symptoms Following Exposure:** If liquid is ingested an increased frequency of bowel movements will occur

5 3 **Treatment for Exposure:** INGESTION Do not induce vomiting SKIN Wipe off wash with soap and water EYES Wash with water for at least 15 min

5 4 **Toxicity by Inhalation (Threshold Limit Value):** No single TLV applicable

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Data not available

5 9 **Liquid or Solid Irritant Characteristics:** Data not available

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** Data not available

6.2 **Flammable Limits in Air:** Data not available

6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6.5 **Special Hazards of Combustion Products:** Not pertinent

6 6 **Behavior in Fire:** Not pertinent

6 7 **Ignition Temperature:** Data not available

6 8 **Electrical Hazard:** Not pertinent

6.9 **Burning Rate:** 4 mm/min

7. CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8 1 **Aquatic Toxicity:** Data not available

8 2 **Waterfowl Toxicity:** Data not available

8.3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

2 Exxon Co
Houston, Tex 77001

3 Sun Oil Co
St Davids Pa 19087

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Data not available

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12 HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:** Not listed

13 PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** Data not available

13 4 **Freezing Point:** Not pertinent

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** Data not available

13 8 **Liquid Surface Tension:** (est) 28 dynes/cm = 0.028 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** (est) 50 dynes/cm = 0.05 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** (est) −18,000 Btu/lb = −10,000 cal/g = −420 × 10³ J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

Continued on pages 3 and 4

NOTES

OIL	OILS: CRUDE

Common Synonyms: Petroleum	Oily liquid — Dark — Acrid odor Floats on water. Flammable vapor may be produced.

Stop discharge if possible. Keep people away.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam, or carbon dioxide Water may be ineffective on fire Cool exposed containers with water
Exposure	CALL FOR MEDICAL AID **VAPOR** Not irritating to eyes, nose, or throat. **LIQUID** Irritating to skin and eyes. Remove contaminated clothing and shoes Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS Fouling to shorelines. May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 448-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by
Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Petroleum

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 1/1267

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Dark

4 3 **Odor:** Offensive tarry

5 HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Goggles or face shield rubber gloves and boots

5 2 **Symptoms Following Exposure:** May irritate eyes and skin

5 3 **Treatment for Exposure:** EYES flush with water for at least 15 min SKIN wipe off and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** Data not available

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Data not available

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Vapors are nonirritating to the eyes and throat

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of the skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** Data not available

6.2 **Flammable Limits in Air:** Data not available

6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fire:** Not pertinent

6.7 **Ignition Temperature:** Data not available

6.8 **Electrical Hazard:** Not pertinent

6.9 **Burning Rate:** 4 mm/min

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** 3 ppm/*/fresh water fish/toxic/fresh water 200 ppm/24 hr/corals, porites/20-90% normal response/salt water
*Time period not specified.

8 2 **Waterfowl Toxicity:** Data not available

8 3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Exxon Co
Houston, Tex 77001

2 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

3 Sun Oil Co
St Davids, Pa 19087

10. SHIPPING INFORMATION

10 1 **Grades or Purity:** Wide variety depending on oil field where produced

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 448-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Combustible liquid

12 2 **NAS Hazard Rating for Bulk Water Transportation:**

Category	Rating
Fire	1-3
Health	
Vapor Irritant	0
Liquid or Solid Irritant	1
Poisons	1
Water Pollution	
Human Toxicity	1
Aquatic Toxicity	2
Aesthetic Effect	4
Reactivity	
Other Chemicals	0
Water	0
Self-Reaction	0

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	1
Flammability (Red)	3
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 90 – >750°F = 32 – >400°C = 305 – >673°K

13 4 **Freezing Point:** Not pertinent

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0.70 – 0.98 at 15°C (liquid)

13 8 **Liquid Surface Tension:** 24 – 38 dynes/cm = 0.024 – 0.038 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** test 150 dynes/cm = 0.05 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** 140 – 150 Btu/lb = 76 – 86 cal/g = 3.2 – 3.6 × 10³ J/kg

13 13 **Heat of Combustion:** −18,252 Btu/lb = −10,140 cal/g = −424.54 × 10³ J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

ODS

OILS: DIESEL

Common Synonyms -
Fuel oil 1-D
Fuel oil 2-D

Oily liquid - Yellow-brown - Lube or fuel oil odor -

Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Combustible.
Extinguish with dry chemical, foam, or carbon dioxide
Water may be ineffective on fire
Cool exposed containers with water

Exposure

CALL FOR MEDICAL AID

LIQUID
Irritating to skin and eyes.
Harmful if swallowed.
Remove contaminated clothing and shoes
Flush affected areas with plenty of water
IF IN EYES hold eyelids open and flush with plenty of water
IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk
DO NOT INDUCE VOMITING

Water Pollution

Dangerous to aquatic life in high concentrations.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials
Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Fuel Oil 1-D
Fuel Oil 2-D

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 1/1270

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Light brown

4 3 **Odor:** Like fuel oil

5. HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Goggles or face shield

5 2 **Symptoms Following Exposure:** If liquid is ingested an increased frequency of bowel movements will occur

5 3 **Treatment for Exposure:** INGESTION do NOT induce vomiting SKIN wipe off wash with soap and water EYES wash with copious amounts of water for at least 15 min

5 4 **Toxicity by Inhalation (Threshold Limit Value):** No single TLV applicable

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations The effect is temporary

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of the skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6 1 **Flash Point:** (1-D) 100°F C C, (2-D) 125°F C C

6 2 **Flammable Limits in Air:** 1.3—6 0 vol %

6 3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6.5 **Special Hazards of Combustion Products:** Not pertinent

6 6 **Behavior in Fire:** Not pertinent

6 7 **Ignition Temperature:** (1-D) 350-625°F (2-D) 490-545°F

6 8 **Electrical Hazard:** Not pertinent

6 9 **Burning Rate:** 4 mm/min

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8 1 **Aquatic Toxicity:** 204 mg/l /24 hr/juvenile American shad/ TL_m/salt water

8 2 **Waterfowl Toxicity:** Data not available

8 3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9 SELECTED MANUFACTURERS

1 Exxon Co
Houston, Tex 77001

2 Shell Oil Co
1 Shell Plaza
Houston Tex 77001

3 Sun Oil Co
St Davids Pa 19087

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Diesel Fuel 1-D (ASTM) Diesel Fuel 2-D (ASTM)

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

V-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Combustible liquid

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 550 - 640°F = 288 - 338°C = 561 - 612°K

13 4 **Freezing Point:** 0 to -30°F = -18 to -34°C = 255 to 239°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0 876 at 20°C (liquid)

13 8 **Liquid Surface Tension:** (est) 28 dynes/cm = 0 028 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** (est) 50 dynes/cm = 0 05 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** (est) -18 000 Btu/lb = -10 000 cal/g = -42 9 × 10 J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on page 5 and 6)

NOTES

OSB	OILS, EDIBLE: SOYA BEAN

Common Synonyms –	Oily liquid · Pale yellow – Weak odor Floats on water.
Stop discharge if possible. Call fire department. Isolate and remove discharged material. Notify local health and pollution control agencies.	
Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water
Exposure	Not harmful.
Water Pollution	Effect of low concentrations on aquatic life is unknown Fouling to shoreline May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook, CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by
Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Soybean oil
3 2 **Coast Guard Compatibility Classification:** Ester
3 3 **Chemical Formula:** Not applicable
3 4 **IMCO/United Nations Numerical Designation:** Not listed

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped).** Liquid
4 2 **Color:** Pale yellow
4 3 **Odor:** Weak

5. HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Goggles or face shield
5 2 **Symptoms Following Exposure:** None – is a food
5 3 **Treatment for Exposure:** EYES flush with water for at least 15 min
5 4 **Toxicity by Inhalation (Threshold Limit Value):** Not pertinent
5 5 **Short-Term Inhalation Limits:** Not pertinent
5 6 **Toxicity by Ingestion:** None
5 7 **Late Toxicity:** None
5 8 **Vapor (Gas) Irritant Characteristics:** None
5 9 **Liquid or Solid Irritant Characteristics:** None
5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** 540°F C C
6.2 **Flammable Limits in Air:** Data not available
6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide
6.4 **Fire Extinguishing Agents Not to be Used:** Water or foam may cause frothing
6.5 **Special Hazards of Combustion Products:** Not pertinent
6 6 **Behavior in Fire:** Not pertinent
6 7 **Ignition Temperature:** 833°F
6.8 **Electrical Hazard:** Not pertinent
6.9 **Burning Rate:** Data not available

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction
7 2 **Reactivity with Common Materials:** No reaction
7 3 **Stability During Transport:** Stable
7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
7 5 **Polymerization:** Not pertinent
7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8 1 **Aquatic Toxicity:** Data not available
8 2 **Waterfowl Toxicity:** Data not available
8 3 **Biological Oxygen Demand (BOD):** 39%, 5 days
8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Ashland Oil Co
Chemical Products Division
Peoria, Ill 61601

2 A E Staley Manufacturing Co
Decatur Ill 62525

3 Arthur C Trask Corp
7666 W 63rd St
Argo Ill 60501

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Data not available
10 2 **Storage Temperature:** Ambient
10 3 **Inert Atmosphere:** No requirement
10 4 **Venting:** Open (flame arrester)

11 HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

V T U

12 HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed
12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed
12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	1
Reactivity (Yellow)	0

13 PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid
13 2 **Molecular Weight:** Not pertinent
13 3 **Boiling Point at 1 atm:** Very high
13 4 **Freezing Point:** −4°F = −20°C = 253 K
13 5 **Critical Temperature:** Not pertinent
13 6 **Critical Pressure:** Not pertinent
13 7 **Specific Gravity:** 0.92 – 0.93 at 15°C (liquid)
13 8 **Liquid Surface Tension:** (est) 25 dynes/cm = 0.025 N/m at 20°C
13 9 **Liquid-Water Interfacial Tension** (est) 50 dynes/cm = 0.05 N/m at 20°C
13 10 **Vapor (Gas) Specific Gravity:** Not pertinent
13 11 **Ratio of Specific Heats of Vapor (Gas).** Not pertinent
13 12 **Latent Heat of Vaporization.** Not pertinent
13 13 **Heat of Combustion:** (est) −16,000 Btu/lb = −8,870 cal/g = −37.1 × 10³ J/kg
13 14 **Heat of Decomposition:** Not pertinent
13 15 **Heat of Solution:** Not pertinent
13 16 **Heat of Polymerization.** Not pertinent

Continued on pages 5 and 6

NOTES

OVG — OILS, EDIBLE: VEGETABLE

Common Synonyms

Oily liquid — Pale yellow — Weak, fatty odor

Floats on water.

Stop discharge if possible.
Call fire department.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Combustible.
Extinguish with dry chemical, foam or carbon dioxide.
Water may be ineffective on fire
Cool exposed containers with water.

Exposure

Not harmful.

Water Pollution

Effect of low concentrations on aquatic life is unknown.
Fouling to shoreline.
May be dangerous if it enters water intakes.
Notify local health and wildlife officials
Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook, CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by
Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** No common synonyms
3 2 **Coast Guard Compatibility Classification:** Ester
3 3 **Chemical Formula:** Not applicable
3 4 **IMCO/United Nations Numerical Designation:** Not listed

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid
4 2 **Color:** Colorless to pale yellow
4 3 **Odor:** Weak fatty

5 HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Goggles or face shield
5 2 **Symptoms Following Exposure:** None—is a food
5 3 **Treatment for Exposure:** EYES flush with water for at least 15 min
5 4 **Toxicity by Inhalation (Threshold Limit Value):** Not pertinent
5 5 **Short-Term Inhalation Limits:** Not pertinent
5 6 **Toxicity by Ingestion:** None
5 7 **Late Toxicity:** None
5 8 **Vapor (Gas) Irritant Characteristics:** None
5 9 **Liquid or Solid Irritant Characteristics:** None
5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** 610°F O C
6.2 **Flammable Limits in Air:** Data not available
6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide
6 4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective.
6.5 **Special Hazards of Combustion Products:** Not pertinent
6 6 **Behavior in Fire:** Not pertinent
6.7 **Ignition Temperature:** Data not available
6 8 **Electrical Hazard:** Not pertinent
6.9 **Burning Rate:** Data not available

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction
7 2 **Reactivity with Common Materials:** No reaction
7 3 **Stability During Transport:** Stable
7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
7 5 **Polymerization:** Not pertinent
7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** Data not available
8.2 **Waterfowl Toxicity:** Data not available
8.3 **Biological Oxygen Demand (BOD):** Data not available
8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Ashland Oil Co
Chemical Products Division
Peoria, Ill 61601

2. Sherwin-Williams Co
101 Prospect Ave
Cleveland, Ohio 44101

3 A E Staley Manufacturing Co
Decatur, Ill 62525

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Data not available
10 2 **Storage Temperature:** Ambient
10 3 **Inert Atmosphere:** No requirement
10 4 **Venting:** Open (flame arrester)

11 HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed
12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed
12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	1
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid
13 2 **Molecular Weight:** Not pertinent
13 3 **Boiling Point at 1 atm:** Very high
13 4 **Freezing Point:** Not pertinent
13 5 **Critical Temperature:** Not pertinent
13 6 **Critical Pressure:** Not pertinent
13 7 **Specific Gravity:** 0 92 at 20°C (liquid)
13 8 **Liquid Surface Tension:** (est) 25 dynes/cm = 0 025 N/m at 20°C
13 9 **Liquid-Water Interfacial Tension:** (est) 50 dynes/cm = 0 05 N/m at 20°C
13 10 **Vapor (Gas) Specific Gravity:** Not pertinent
13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
13 12 **Latent Heat of Vaporization:** Not pertinent
13 13 **Heat of Combustion:** (est) −16 000 Btu/lb = −8 870 cal/g = −371 × 10³ J/kg
13 14 **Heat of Decomposition:** Not pertinent
13 15 **Heat of Solution:** Not pertinent
13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

OON	OILS, FUEL: NO. 1

Common Synonyms: Kerosene, Kerosine, Range oil, JP-1	Watery liquid. Colorless. Kerosene odor. Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water
Exposure	*CALL FOR MEDICAL AID* LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk DO NOT INDUCE VOMITING
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook, CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by
Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** JP-1
Kerosene
Kerosine
Range oil

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 3/1223

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Colorless to light brown

4 3 **Odor:** Characteristic

5. HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves goggles or face shield

5 2 **Symptoms Following Exposure:** INGESTION causes irritation of gastrointestinal tract pulmonary tract irritation secondary to exhalation of vapors ASPIRATION causes severe lung irritation with coughing gagging dyspnea substernal distress and rapidly developing pulmonary edema signs of bronchopneumonia and pneumonitis appear later minimal central nervous system depression

5 3 **Treatment for Exposure:** INGESTION do NOT lavage or induce vomiting call physician ASPIRATION enforce bed rest administer oxygen call physician EYES wash with plenty of water SKIN wipe off and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** 200 ppm (suggested)

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5-15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations The effect is temporary

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin

5 10 **Odor Threshold:** 1 ppm

6. FIRE HAZARDS

6.1 **Flash Point:** 100°F C C.

6 2 **Flammable Limits in Air:** 0 7%—5%

6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6 4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fires:** Not pertinent

6.7 **Ignition Temperature:** 444°F

6.8 **Electrical Hazard:** Not pertinent

6 9 **Burning Rate:** 4 mm/min

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** —
2990 ppm/24 hr/bluegill/TL_m/fresh water

8 2 **Waterfowl Toxicity:** Data not available

8 3 **Biological Oxygen Demand (BOD):** 53% 5 days

8 4 **Food Chain Concentration Potential:** None

9 SELECTED MANUFACTURERS

1 Atlantic Richfield
717 Fifth Ave
New York, N Y 10022

2 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

3 Sun Oil Co
St Davids Pa 19087

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Light hydrocarbon distillate 100%

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12.2 **NAS Hazard Rating for Bulk Water Transportation:**

Category	Rating
Fire	2
Health	
Vapor Irritant	1
Liquid or Solid Irritant	1
Poisons	1
Water Pollution	
Human Toxicity	1
Aquatic Toxicity	1
Aesthetic Effect	3
Reactivity	
Other Chemicals	0
Water	0
Self-Reaction	0

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 380 560°F = 193 293°C = 466 566°K

13 4 **Freezing Point:** −45 to −55°F = −43 to −48°C = 230 to 225°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0.81 0.85 at 15°C (liquid)

13 8 **Liquid Surface Tension:** 23 32 dynes/cm = 0.023 0.032 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** 47 49 dynes/cm = 0.047 0.049 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization** 110 Btu/lb = 60 cal/g = 2.5 × 10⁵ J/kg

13 13 **Heat of Combustion:** −18 500 Btu/lb = −10 300 cal/g = −43.1 24 × 10⁵ J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

OOD	OILS, FUEL: 1-D

Common Synonyms –			
Diesel oil (light) -	Oily liquid	Yellow-brown	Lube or fuel oil odor
	Floats on water.		

Stop discharge if possible.
Call fire department
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID LIQUID Irritating to skin and eyes. Harmful if swallowed Remove contaminated clothing and shoes Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk DO NOT INDUCE VOMITING
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Diesel oil light

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 1 1270

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Light brown

4 3 **Odor:** Characteristic

5. HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves goggles or face shield

5 2 **Symptoms Following Exposure:** INHALATION causes headache and slight giddiness INGESTION causes nausea vomiting and cramping depression of central nervous system ranging from mild headache to anesthesia coma and death pulmonary irritation secondary to exhalation of solvent signs of kidney and liver damage may be delayed ASPIRATION causes severe lung irritation with coughing gagging dyspnea substernal distress and rapidly developing pulmonary edema later signs of bronchopneumonia and pneumonitis acute onset of central nervous system excitement followed by depression

5 3 **Treatment for Exposure:** INGESTION do NOT induce vomiting seek medical attention ASPIRATION enforce bed rest administer oxygen EYES wash with copious quantity of water SKIN remove solvent by wiping and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** No single value applicable

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5-15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Slight smarting of eyes or respiratory system if present in high concentrations The effect is temporary

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6 1 **Flash Point:** 100°F C C

6 2 **Flammable Limits in Air:** 1 3%—6%

6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6 5 **Special Hazards of Combustion Products:** Not pertinent

6 6 **Behavior in Fire:** Not pertinent

6.7 **Ignition Temperature:** 350-625°F

6.8 **Electrical Hazard:** Not pertinent

6 9 **Burning Rate:** 4 mm/min

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** 204 mg/1/24 hr/juvenile American shad/ TL_m/salt water

8 2 **Waterfowl Toxicity:** 20 mg/kg LD_{50} (mallard)

8 3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Atlantic Richfield Co.
717 Fifth Ave
New York, N Y 10022

2 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

3 Sun Oil Co
St Davids, Pa 19087

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Diesel fuel 1-D (ASTM)

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13 PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 380-560°F = 193-293°C = 466-566°K

13 4 **Freezing Point:** −30°F = −34°C = 240°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0 81-0 85 at 15°C (liquid)

13 8 **Liquid Surface Tension:** 23-32 dynes/cm = 0 023-0 032 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** 47-49 dynes/cm = 0 047-0 049 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** 110 Btu/lb = 60 cal/g = 2 5 × 10^5 J/kg

13 13 **Heat of Combustion:** −18 540 Btu/lb = −10 300 cal/g = −431 24 × 10^5 J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

OTW	OILS, FUEL: 2

Common Synonyms: Home-heating oil	Oily liquid — Yellow-brown — Lube or fuel oil odor Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water.
Exposure	CALL FOR MEDICAL AID **LIQUID** Irritating to skin and eyes. If swallowed, will cause nausea, vomiting. Remove contaminated clothing and shoes Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk DO NOT INDUCE VOMITING
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes.

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook, CG 448-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Home heating oil

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 3/1223

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Light brown

4 3 **Odor:** Like kerosine characteristic

5. HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves goggles or face shield

5 2 **Symptoms Following Exposure:** INHALATION causes headache and slight giddiness. INGESTION causes nausea vomiting and cramping, depression of central nervous system ranging from mild headache to anesthesia coma and death pulmonary irritation secondary to exhalation of solvent signs of kidney and liver damage may be delayed ASPIRATION causes severe lung irritation with coughing, gagging dyspnea, substernal distress and rapidly developing pulmonary edema later signs of bronchopneumonia and pneumonitis acute onset of central nervous system excitement followed by depression

5 3 **Treatment for Exposure:** INGESTION do NOT induce vomiting ASPIRATION enforce bed rest administer oxygen seek medical attention EYES wash with copious quantity of water SKIN remove solvent by wiping and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** No single value applicable

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5-15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Slight smarting of eyes or respiratory system if present in high concentrations The effect is temporary

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** 136°F C C.

6.2 **Flammable Limits in Air:** Data not available

6 3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6 4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6 5 **Special Hazards of Combustion Products:** Not pertinent

6 6 **Behavior in Fire:** Not pertinent

6 7 **Ignition Temperature:** 494°F

6.8 **Electrical Hazards:** Not pertinent

6.9 **Burning Rate:** 4 mm/min

7. CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:**
200 ppm/24 hr/juvenile American shad/TL_m/fresh water
20 ppm/96 hr/rainbow trout eggs/TL_m/salt water

8 2 **Waterfowl Toxicity:** Data not available

8 3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Atlantic Richfield Co.
717 Fifth Ave
New York, N Y 10022

2 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

3 Sun Oil Co
St Davids, Pa 19087

10. SHIPPING INFORMATION

10 1 **Grades or Purity:** Commercial

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 448-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 540-640°F = 282-338°C = 555-611°K

13 4 **Freezing Point:** −20°F = −29°C = 244°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0 87-0 90 at 20°C (liquid)

13 8 **Liquid Surface Tension:** (est) 25 dynes/cm = 0 025 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** (est) 50 dynes/cm = 0 05 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** −19 440 Btu/lb = −10 800 cal/g = −452 17 × 10^3 J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

OTD	OILS, FUEL: 2-D

Common Synonyms: Diesel oil, medium.	Oily liquid. Yellow-brown. Lube or fuel oil odor. Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam, carbon dioxide Water may be ineffective on fire Cool exposed containers with water
Exposure	CALL FOR MEDICAL AID. **LIQUID** Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk DO NOT INDUCE VOMITING
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook, CG 448-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Diesel oil medium

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 1/1270

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Light brown

4 3 **Odor:** Characteristic like kerosene

5 HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves goggles or face shield

5 2 **Symptoms Following Exposure:** INGESTION causes nausea vomiting and cramping depression of central nervous system ranging from mild headache to anesthesia coma and death pulmonary irritation secondary to exhalation of solvent signs of kidney and liver damage may be delayed ASPIRATION causes severe lung irritation with coughing gagging dyspnea substernal distress and rapidly developing pulmonary edema later signs of bronchopneumonia and pneumonitis acute onset of central nervous system excitement followed by depression

5 3 **Treatment for Exposure:** INGESTION do NOT induce vomiting ASPIRATION enforce bed rest administer oxygen seek medical attention EYES wash with copious quantity of water SKIN remove solvent by wiping and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** No single TLV applicable

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5-15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Slight smarting of eyes or respiratory system if present in high concentrations The effect is temporary

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** 125°F C C.

6.2 **Flammable Limits in Air:** 1.3%—6 0%

6 3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fire:** Not pertinent

6.7 **Ignition Temperature:** 490-545°F

6.8 **Electrical Hazard:** Not pertinent

6.9 **Burning Rate:** 4 mm/min

7. CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** 204 mg/l/24 hr/juvenile American shad/ TL_m/salt water

8.2 **Waterfowl Toxicity:** Data not available

8 3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Atlantic Richfield Co
717 Fifth Ave
New York, N. Y 10022

2 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

3 Sun Oil Co
St Davids Pa 19087

10. SHIPPING INFORMATION

10 1 **Grades or Purity:** Diesel fuel 2-D (ASTM)

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 540-640°F = 282 338°C = 555-611°K

13 4 **Freezing Point:** 0°F = −18°C = 255°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0 87-0 90 at 20°C (liquid)

13 8 **Liquid Surface Tension:** (est) 25 dynes/cm = 0 025 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** (est) 50 dynes/cm = 0 05 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** −19 440 Btu/lb = −10 800 cal/g = −452 17 × 10^3 J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

OILS, FUEL: 4

Common Synonyms – Residual fuel oil No. 4 –	Oily liquid – Dark – Lube or fuel oil odor – Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water
Exposure	CALL FOR MEDICAL AID LIQUID Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk DO NOT INDUCE VOMITING
Water Pollution	Effect of low concentrations on aquatic life is unknown. Fouling to shoreline May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1. RESPONSE TO DISCHARGE

(See Response Methods Handbook, CG 448-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Residual fuel oil, No 4

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 3/1223

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Brown

4 3 **Odor:** Characteristic like kerosene

5 HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves goggles or face shield

5 2 **Symptoms Following Exposure:** INGESTION gastrointestinal irritation ASPIRATION pulmonary irritation is normally minimal but may become more severe several hours after exposure

5 3 **Treatment for Exposure:** INGESTION do NOT lavage or induce vomiting ASPIRATION treatment probably not required delayed development of pulmonary irritation can be detected by serial chest x-rays consider prophylactic antibiotic regime if condition warrants EYES wash with copious quantity of water SKIN wipe off and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** Not pertinent

5 5 **Short-Term Inhalation Limits:** Not pertinent

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** None

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of the skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** >130°F C.C.

6.2 **Flammable Limits in Air:** 1 0%—5%

6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective.

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fire:** Not pertinent

6.7 **Ignition Temperature:** 505°F

6.8 **Electrical Hazard:** Not pertinent

6.9 **Burning Rate:** 4 mm/min.

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7.2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8 1 **Aquatic Toxicity:** Data not available

8.2 **Waterfowl Toxicity:** Data not available

8 3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Atlantic Richfield Co
717 Fifth Ave
New York, N Y 10022

2 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

3 Sun Oil Co
St Davids, Pa 19087

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Commercial

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook, CG 448-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 214 to >1092°F = 101 to >588° C = 374 to 861° K

13 4 **Freezing Point:** −20 to +15°F = −29 to −9°C = 244 to 264° K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0 90 (approx) at 20°C (liquid)

13 8 **Liquid Surface Tension:** (est) 25 dynes/cm = 0 025 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** (est) 50 dynes/cm = 0 05 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** −17 460 Btu/lb = −9 700 cal/g = $-406\ 1 \times 10^3$ J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

OFV	OILS, FUEL: 5

Common Synonyms: Residual fuel oil No. 5	Oily liquid. Dark. Strong lube oil odor. Usually floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water
Exposure	CALL FOR MEDICAL AID LIQUID Irritating to skin and eyes. Harmful if swallowed Remove contaminated clothing and shoes Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk DO NOT INDUCE VOMITING
Water Pollution	Effect of low concentrations on aquatic life is unknown Fouling to shoreline May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Residual fuel oil No 5

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 3/1223

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Brown

4 3 **Odor:** Characteristic like kerosene

5 HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves goggles or face shield

5 2 **Symptoms Following Exposure:** INGESTION gastrointestinal irritation ASPIRATION pulmonary irritation is normally minimal but may become more severe several hours after exposure

5 3 **Treatment for Exposure:** INGESTION do NOT lavage or induce vomiting ASPIRATION treatment probably not required delayed development of pulmonary irritation can be detected by serial chest x-rays consider prophylactic antibiotic regime if condition warrants EYES wash with copious quantity of water SKIN wipe off and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** Not pertinent

5 5 **Short-Term Inhalation Limits:** Not pertinent

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** None

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of the skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** > 130°F C.C.

6.2 **Flammable Limits in Air:** 1%—5%

6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective.

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fire:** Not pertinent

6 7 **Ignition Temperature:** Data not available

6 8 **Electrical Hazard:** Not pertinent

6 9 **Burning Rate:** 4 mm/min.

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8 1 **Aquatic Toxicity:** Data not available

8.2 **Waterfowl Toxicity:** Data not available

8.3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Atlantic Richfield Co
717 Fifth Ave
New York, N Y 10022

2 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

3 Sun Oil Co
St Davids Pa 19087

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Fuel oil No 5 (heavy). Fuel oil No 5 (light)

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11 HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12 HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 426—> 1062°F = 218—>570°C = 491—>843°K

13 4 **Freezing Point:** 0°F = −18°C = 255°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0 90 (approx) at 20°C (liquid)

13 8 **Liquid Surface Tension:** (est) 25 dynes/cm = 0 025 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** (est) 50 dynes/cm = 0 05 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** −18 000 Btu/lb = −10 000 cal/g = −418 68 × 10³ J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

OSX	OILS, FUEL: 6

Common Synonyms— Bunker C oil Residual fuel oil No. 6	Thick liquid - Black - Tar odor - Usually floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water
Exposure	CALL FOR MEDICAL AID LIQUID Irritating to skin and eyes. Harmful if swallowed Remove contaminated clothing and shoes. Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk DO NOT INDUCE VOMITING
Water Pollution	Dangerous to aquatic life in high concentrations. Fouling to shoreline May be dangerous if it enters water intakes. Notify local health and wildlife officials. Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 448-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Bunker C oil
Residual fuel oil No 6

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 3/1223

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Dark

4 3 **Odor:** Tarry like kerosene

5 HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves goggles or face shield

5 2 **Symptoms Following Exposure:** INGESTION gastrointestinal irritation ASPIRATION pulmonary irritation is normally minimal but may become more severe several hours after exposure

5 3 **Treatment for Exposure:** INGESTION do NOT lavage or induce vomiting ASPIRATION treatment probably not required delayed development of pulmonary irritation can be detected by serial chest x-rays consider prophylactic antibiotic regime if condition warrants EYES wash with copious quantity of water SKIN wipe off and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** Not pertinent

5 5 **Short-Term Inhalation Limits:** Not pertinent

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** None

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of the skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** > 150°F C.C.

6.2 **Flammable Limits in Air:** 1%—5%

6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6 4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fire:** Not pertinent

6 7 **Ignition Temperature:** 765°F

6 8 **Electrical Hazard:** Not pertinent

6.9 **Burning Rate:** 4 mm/min.

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8 1 **Aquatic Toxicity:**
2400 ppm/48 hr/juvenile American shad/ TL_m/fresh water
2417 mg/l /48 hr/juvenile American shad/ TL_m/salt water

8 2 **Waterfowl Toxicity:** Data not available

8 3 **Biological Oxygen Demand (BOD):** Data not available

8.4 **Food Chain Concentration Potential:** Data not available

9. SELECTED MANUFACTURERS

1 Atlantic Richfield Co
717 Fifth Ave
New York N Y 10022

2 Shell Oil Co
1 Shell Plaza
Houston Tex 77001

3 Sun Oil Co
St Davids Pa 19087

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Commercial

10 2 **Storage Temperature:** Elevated

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11 HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 448-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13 PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** 415–>> 1093°F = 212–>> 588°C = 485–>> 861°K

13 4 **Freezing Point:** 25 to 55°F = –4 to +13°C = 269 to 286°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0 95 (approx) at 20°C (liquid)

13 8 **Liquid Surface Tension:** (est 1 25 dynes/cm = 0 025 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** (est 1 50 dynes/cm = 0 05 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** –18 000 Btu/lb = –10 000 cal/g = –418 68 × 10^3 J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

OLB — OILS, MISCELLANEOUS: LUBRICATING

Common Synonyms: Crankcase oil; Transmission oil; Motor oil

Oily liquid — **Yellow-brown** — **Lube oil odor**

Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material
Notify local health and pollution control agencies.

Fire

Combustible.
Extinguish with dry chemical, foam or carbon dioxide
Water may be ineffective on fire
Cool exposed containers with water.

Exposure

CALL FOR MEDICAL AID

LIQUID
Irritating to skin and eyes.
Harmful if swallowed
Remove contaminated clothing and shoes
Flush affected areas with plenty of water
IF IN EYES hold eyelids open and flush with plenty of water
IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk
DO NOT INDUCE VOMITING

Water Pollution

Effect of low concentrations on aquatic life is unknown
Fouling to shoreline
May be dangerous if it enters water intakes.
Notify local health and wildlife officials
Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2 LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3.1 **Synonyms:** Crankcase oil; Motor oil; Transmission oil
3.2 **Coast Guard Compatibility Classification:** Petroleum oil
3.3 **Chemical Formula:** Not applicable
3.4 **IMCO/United Nations Numerical Designation:** 3.3/1270

4 OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Liquid
4.2 **Color:** Yellow fluorescent
4.3 **Odor:** Characteristic

5 HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Protective gloves, goggles or face shield
5.2 **Symptoms Following Exposure:** INGESTION minimal gastrointestinal tract irritation, increased frequency of bowel passage may occur. ASPIRATION pulmonary irritation is normally minimal but may become more severe several hours after exposure
5.3 **Treatment for Exposure:** INGESTION do NOT lavage or induce vomiting. ASPIRATION treatment probably not required, delayed development of pulmonary irritation can be detected by serial chest x-rays. EYES wash with copious quantity of water. SKIN wipe off and wash with soap and water
5.4 **Toxicity by Inhalation (Threshold Limit Value):** Data not available
5.5 **Short-Term Inhalation Limits:** Data not available
5.6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15 g/kg
5.7 **Late Toxicity:** Data not available
5.8 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations. The effect is temporary
5.9 **Liquid or Solid Irritant Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin
5.10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Points:** 300°F-450°F C.C.
6.2 **Flammable Limits in Air:** Data not available
6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide
6.4 **Fire Extinguishing Agents Not to be Used:** Water of foam may cause frothing
6.5 **Special Hazards of Combustion Products:** Not pertinent
6.6 **Behavior in Fire:** Not pertinent
6.7 **Ignition Temperatures:** 500°F – 700°F
6.8 **Electrical Hazard:** Not pertinent
6.9 **Burning Rate:** 4 mm/min

7 CHEMICAL REACTIVITY

7.1 **Reactivity with Water:** No reaction
7.2 **Reactivity with Common Materials:** No reaction
7.3 **Stability During Transport:** Stable
7.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
7.5 **Polymerization:** Not pertinent
7.6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** Data not available
8.2 **Waterfowl Toxicity:** Data not available
8.3 **Biological Oxygen Demand (BOD):** Data not available
8.4 **Food Chain Concentration Potential:** None

9 SELECTED MANUFACTURERS

1. Shell Oil Co
   1 Shell Plaza
   Houston, Tex. 77001
2. Standard Oil Co. (Indiana)
   910 S. Michigan Ave.
   Chicago, Ill. 60605
3. Sun Oil Co.
   St. Davids, Pa. 19087

10 SHIPPING INFORMATION

10.1 **Grades or Purity:** Various viscosities
10.2 **Storage Temperature:** Ambient
10.3 **Inert Atmosphere:** No requirement
10.4 **Venting:** Open (flame arrester)

11 HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12 HAZARD CLASSIFICATIONS

12.1 **Code of Federal Regulations:** Not listed
12.2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed
12.3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	1
Reactivity (Yellow)	0

13 PHYSICAL AND CHEMICAL PROPERTIES

13.1 **Physical State at 15°C and 1 atm:** Liquid
13.2 **Molecular Weight:** Not pertinent
13.3 **Boiling Point at 1 atm:** Very high
13.4 **Freezing Point:** Not pertinent
13.5 **Critical Temperature:** Not pertinent
13.6 **Critical Pressure:** Not pertinent
13.7 **Specific Gravity:** 0.84-0.96 at 15°C (liquid)
13.8 **Liquid Surface Tension:** 6.47 dynes/cm = 0.0364-0.0375 N/m at 20°C
13.9 **Liquid-Water Interfacial Tension:** 33-34 dynes/cm = 0.033-0.034 N/m at 20°C
13.10 **Vapor (Gas) Specific Gravity:** Not pertinent
13.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
13.12 **Latent Heat of Vaporization:** Not pertinent
13.13 **Heat of Combustion:** −18,450 Btu/lb = −10,270 cal/g = −429.98 × 10³ J/kg
13.14 **Heat of Decomposition:** Not pertinent
13.15 **Heat of Solution:** Not pertinent
13.16 **Heat of Polymerization:** Not pertinent

Continued on pages 5 and 6

NOTES

OMT	OILS, MISCELLANEOUS: MOTOR

Common Synonyms: Crankcase oil Lubricating oil	Oily liquid — Yellow-brown — Lube oil odor Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire Cool exposed containers with water
Exposure	CALL FOR MEDICAL AID **LIQUID** Irritating to skin and eyes. Harmful if swallowed. Remove contaminated clothing and shoes Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk DO NOT INDUCE VOMITING
Water Pollution	Effect of low concentrations on aquatic life is unknown Fouling to shoreline. May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Crankcase oil, Lubricating oil, Transmission oil

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 3/1270

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Yellow fluorescent

4 3 **Odor:** Characteristic

5. HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves, goggles or face shield

5 2 **Symptoms Following Exposure:** INGESTION minimal gastrointestinal irritation increased frequency of bowel passage may occur ASPIRATION pulmonary irritation is normally minimal but may become more severe several hours after exposure

5 3 **Treatment for Exposure:** INGESTION do NOT lavage or induce vomiting ASPIRATION treatment probably not required, delayed development of pulmonary irritation can be detected by serial chest x-rays EYES wash with copious amounts of water SKIN wipe off oil and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** Data not available

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations The effect is temporary

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of the skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6.1 **Flash Point:** 275-600°F C.C.

6.2 **Flammable Limits in Air:** Data not available

6.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide

6 4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fire:** Not pertinent

6 7 **Ignition Temperature:** 325-625°F

6 8 **Electrical Hazard:** Not pertinent

6.9 **Burning Rate:** 4 mm/min.

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8 1 **Aquatic Toxicity:** Data not available

8 2 **Waterfowl Toxicity:** Data not available

8.3 **Biological Oxygen Demand (BOD):** Data not available.

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Shell Oil Co.
1 Shell Plaza
Houston, Tex. 77001

2 Standard Oil Co (Indiana)
910 S Michigan Ave
Chicago, Ill 60605

3 Sun Oil Co
St Davids, Pa 19087

10. SHIPPING INFORMATION

10 1 **Grades or Purity:** Various viscosities

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:** Not listed

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** Very high

13 4 **Freezing Point:** −29.9°F = −34.4°C = 238.8°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0.84-0.96 at 15°C (liquid)

13 8 **Liquid Surface Tension:** 36-37.5 dynes/cm = 0.036-0.0375 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** 33-54 dynes/cm = 0.033-0.054 N/m at 20°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** −18 486 Btu/lb = −10 270 cal/g = −429.98 × 10^3 J/kg

13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

(Continued on pages 5 and 6)

NOTES

ORG	OILS, MISCELLANEOUS: RANGE

Common Synonyms:
Kerosene
Kerosene
Fuel oil No. 1
JP-1

Watery liquid — Colorless — Kerosene odor

Floats on water.

Stop discharge if possible.
Call fire departments
Avoid contact with liquid.
Isolate and remove discharged material.
Notify local health and pollution control agencies.

Fire

Combustible.

Extinguish with foam, dry chemical, or carbon dioxide.
Water may be ineffective on fire
Cool exposed containers with water

Exposure

CALL FOR MEDICAL AID

LIQUID
Irritating to skin and eyes.
Harmful if swallowed

Remove contaminated clothing and shoes
Flush affected areas with plenty of water
IF IN EYES hold eyelids open and flush with plenty of water
IF SWALLOWED and victim is CONSCIOUS have victim drink water or milk
DO NOT INDUCE VOMITING

Water Pollution

Dangerous to aquatic life in high concentrations.
Fouling to shoreline
May be dangerous if it enters water intakes.

Notify local health and wildlife officials
Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2 LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3.1 **Synonyms:** No. 1 Fuel Oil
JP-1
Kerosene
Kerosine

3.2 **Coast Guard Compatibility Classification:** Petroleum oil

3.3 **Chemical Formula:** Not applicable

3.4 **IMCO/United Nations Numerical Designation:** 3.3/1223

4 OBSERVABLE CHARACTERISTICS

4.1 **Physical State (as shipped):** Liquid

4.2 **Color:** Colorless

4.3 **Odor:** Like kerosene

5 HEALTH HAZARDS

5.1 **Personal Protective Equipment:** Protective gloves, goggles or face shield

5.2 **Symptoms Following Exposure:** Vapor causes slight irritation of eyes and nose. Liquid irritates stomach if taken into lungs, causes coughing, distress, and rapidly developing pulmonary edema

5.3 **Treatment for Exposure:** ASPIRATION: enforce bed rest, administer oxygen, call a doctor. INGESTION: do NOT induce vomiting, call a doctor. EYES: wash with copious amounts of water. SKIN: wipe off and wash with soap and water

5.4 **Toxicity by Inhalation (Threshold Limit Value):** 200 ppm

5.5 **Short-Term Inhalation Limits:** Data not available

5.6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15 g/kg

5.7 **Late Toxicity:** Data not available

5.8 **Vapor (Gas) Irritant Characteristics:** Vapors cause slight smarting of eyes and respiratory system if present in high concentrations. The effect is temporary

5.9 **Liquid or Solid Irritant Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin

5.10 **Odor Threshold:** 1 ppm

6. FIRE HAZARDS

6.1 **Flash Point:** −100°F C.C.

6.2 **Flammable Limits in Air:** 0.7%—5%

6.3 **Fire Extinguishing Agents:** Foam, dry chemical, or carbon dioxide

6.4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective

6.5 **Special Hazards of Combustion Products:** Not pertinent

6.6 **Behavior in Fire:** Not pertinent

6.7 **Ignition Temperature:** 444°F

6.8 **Electrical Hazard:** Not pertinent

6.9 **Burning Rate:** 4 mm/min

7. CHEMICAL REACTIVITY

7.1 **Reactivity with Water:** No reaction

7.2 **Reactivity with Common Materials:** No reaction

7.3 **Stability During Transport:** Stable

7.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7.5 **Polymerization:** Not pertinent

7.6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8.1 **Aquatic Toxicity:** 2990 ppm/24 hr/bluegill/TL_m/fresh water

8.2 **Waterfowl Toxicity:** Data not available

8.3 **Biological Oxygen Demand (BOD):** 53% 5 days

8.4 **Food Chain Concentration Potential:** None

9 SELECTED MANUFACTURERS

1. Shell Oil Co
   1 Shell Plaza
   Houston, Tex. 77001
2. Standard Oil Co. (Indiana)
   910 S. Michigan Ave.
   Chicago, Ill. 60605
3. Sun Oil Co.
   St. Davids, Pa. 19087

10 SHIPPING INFORMATION

10.1 **Grades or Purity:** Light hydrocarbon distillate 100°F

10.2 **Storage Temperature:** Ambient

10.3 **Inert Atmosphere:** No requirement

10.4 **Venting:** Open (flame arrester)

11 HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

X T-U

12 HAZARD CLASSIFICATIONS

12.1 **Code of Federal Regulations:** Not listed

12.2 **NAS Hazard Rating for Bulk Water Transportation:**

Category	Rating
Fire	2
Health	
Vapor Irritant	1
Liquid or Solid Irritant	1
Poisons	1
Water Pollution	
Human Toxicity	1
Aquatic Toxicity	1
Aesthetic Effect	3
Reactivity	
Other Chemicals	0
Water	0
Self-Reaction	0

12.3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	2
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13.1 **Physical State at 15°C and 1 atm:** Liquid

13.2 **Molecular Weight:** Not pertinent

13.3 **Boiling Point at 1 atm:** 392-500°F = 200-260°C = 473-533°K

13.4 **Freezing Point:** −45 to −55°F = −43 to −48°C = 230 to 225°K

13.5 **Critical Temperature:** Not pertinent

13.6 **Critical Pressure:** Not pertinent

13.7 **Specific Gravity:** 0.80-0.85 at 20°C (liquid)

13.8 **Liquid Surface Tension:** 23-32 dynes/cm = 0.023-0.032 N/m at 20°C

13.9 **Liquid-Water Interfacial Tension:** 47-49 dynes/cm = 0.047-0.049 N/m at 20°C

13.10 **Vapor (Gas) Specific Gravity:** Not pertinent

13.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13.12 **Latent Heat of Vaporization:** 108 Btu/lb = 60 cal/g = 2.51×10^5 J/kg

13.13 **Heat of Combustion:** −18 540 Btu/lb = −10 300 cal/g = -43.124×10^5 J/kg

13.14 **Heat of Decomposition:** Not pertinent

13.15 **Heat of Solution:** Not pertinent

13.16 **Heat of Polymerization:** Not pertinent

(Continued on Pages 5 and 6)

NOTES

OTF	OILS, MISCELLANEOUS: TRANSFORMER

Common Synonyms	
Insulating oil Electrical insulating oil Petroleum insulating oil	Oily liquid — Colorless to light brown Motor oil-like odor Floats on water.

Stop discharge if possible.
Call fire department.
Avoid contact with liquid
Isolate and remove discharged material
Notify local health and pollution control agencies.

Fire	Combustible. Extinguish with foam, dry chemical, carbon dioxide Water may be ineffective on fire
Exposure	CALL FOR MEDICAL AID LIQUID Irritating to skin and eyes. Harmful if swallowed Remove contaminated clothing Flush affected areas with plenty of water IF IN EYES hold eyelids open and flush with plenty of water IF SWALLOWED and victim is CONSCIOUS have victim drink water (milk) DO NOT INDUCE VOMITING
Water Pollution	Effect of low concentrations on aquatic life is unknown Fouling to shoreline May be dangerous if it enters water intakes. Notify local health and wildlife officials Notify operators of nearby water intakes

1 RESPONSE TO DISCHARGE

(See Response Methods Handbook, CG 446-4)

Mechanical containment
Should be removed
Chemical and physical treatment

2. LABELS

No hazard label required by Code of Federal Regulations

3 CHEMICAL DESIGNATIONS

3 1 **Synonyms:** Electrical insulating oil
Insulating oil
Petroleum insulating oil

3 2 **Coast Guard Compatibility Classification:** Petroleum oil

3 3 **Chemical Formula:** Not applicable

3 4 **IMCO/United Nations Numerical Designation:** 3 3/1270

4 OBSERVABLE CHARACTERISTICS

4 1 **Physical State (as shipped):** Liquid

4 2 **Color:** Colorless to light brown

4 3 **Odor:** Like motor oil

5 HEALTH HAZARDS

5 1 **Personal Protective Equipment:** Protective gloves goggles or face shield

5 2 **Symptoms Following Exposure:** Ingestion of liquid may irritate stomach and cause increased frequency of bowel movements If taken into lungs delayed pulmonary irritation may occur

5 3 **Treatment for Exposure:** INGESTION do NOT induce vomiting ASPIRATION check for delayed irritation by serial X-rays EYES wash with copious amounts of water SKIN wipe off and wash with soap and water

5 4 **Toxicity by Inhalation (Threshold Limit Value):** Data not available

5 5 **Short-Term Inhalation Limits:** Data not available

5 6 **Toxicity by Ingestion:** Grade 1 LD_{50} 5 to 15 g/kg

5 7 **Late Toxicity:** Data not available

5 8 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in high concentrations The effect is temporary

5 9 **Liquid or Solid Irritant Characteristics:** Minimum hazard If spilled on clothing and allowed to remain may cause smarting and reddening of the skin

5 10 **Odor Threshold:** Data not available

6. FIRE HAZARDS

6 1 **Flash Point:** 295°F O C.

6.2 **Flammable Limits in Air:** Data not available

6 3 **Fire Extinguishing Agents:** Foam, dry chemical, or carbon dioxide

6 4 **Fire Extinguishing Agents Not to be Used:** Water may be ineffective.

6.5 **Special Hazards of Combustion Products:** Not pertinent

6 6 **Behavior in Fire:** Not pertinent

6 7 **Ignition Temperature:** Data not available

6.8 **Electrical Hazard:** Not pertinent

6 9 **Burning Rate:** Data not available

7 CHEMICAL REACTIVITY

7 1 **Reactivity with Water:** No reaction

7 2 **Reactivity with Common Materials:** No reaction

7 3 **Stability During Transport:** Stable

7 4 **Neutralizing Agents for Acids and Caustics:** Not pertinent

7 5 **Polymerization:** Not pertinent

7 6 **Inhibitor of Polymerization:** Not pertinent

8. WATER POLLUTION

8 1 **Aquatic Toxicity:** Data not available

8 2 **Waterfowl Toxicity:** Data not available

8.3 **Biological Oxygen Demand (BOD):** Data not available

8 4 **Food Chain Concentration Potential:** None

9. SELECTED MANUFACTURERS

1 Shell Oil Co
1 Shell Plaza
Houston, Tex 77001

2 Standard Oil Co (Indiana)
910 S Michigan Ave
Chicago, Ill 60605

3 Sun Oil Co
St Davids Pa 19087

10 SHIPPING INFORMATION

10 1 **Grades or Purity:** Data not available

10 2 **Storage Temperature:** Ambient

10 3 **Inert Atmosphere:** No requirement

10 4 **Venting:** Open (flame arrester)

11. HAZARD ASSESSMENT CODE

(See Hazard Assessment Handbook CG 446-3)

A-T-U

12. HAZARD CLASSIFICATIONS

12 1 **Code of Federal Regulations:** Not listed

12 2 **NAS Hazard Rating for Bulk Water Transportation:** Not listed

12 3 **NFPA Hazard Classifications:**

Category	Classification
Health Hazard (Blue)	0
Flammability (Red)	1
Reactivity (Yellow)	0

13. PHYSICAL AND CHEMICAL PROPERTIES

13 1 **Physical State at 15°C and 1 atm:** Liquid

13 2 **Molecular Weight:** Not pertinent

13 3 **Boiling Point at 1 atm:** Very high

13 4 **Freezing Point:** −75°F = −59°C = 214°K

13 5 **Critical Temperature:** Not pertinent

13 6 **Critical Pressure:** Not pertinent

13 7 **Specific Gravity:** 0 88 at 15°C (liquid)

13 8 **Liquid Surface Tension:** (est) 25 dynes/cm = 0 025 N/m at 20°C

13 9 **Liquid-Water Interfacial Tension:** 49 dynes/cm = 0 049 N/m at 25°C

13 10 **Vapor (Gas) Specific Gravity:** Not pertinent

13 11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent

13 12 **Latent Heat of Vaporization:** Not pertinent

13 13 **Heat of Combustion:** (est) −18 000 Btu/lb = −10 000 cal/g = −420 × 10³ J/kg

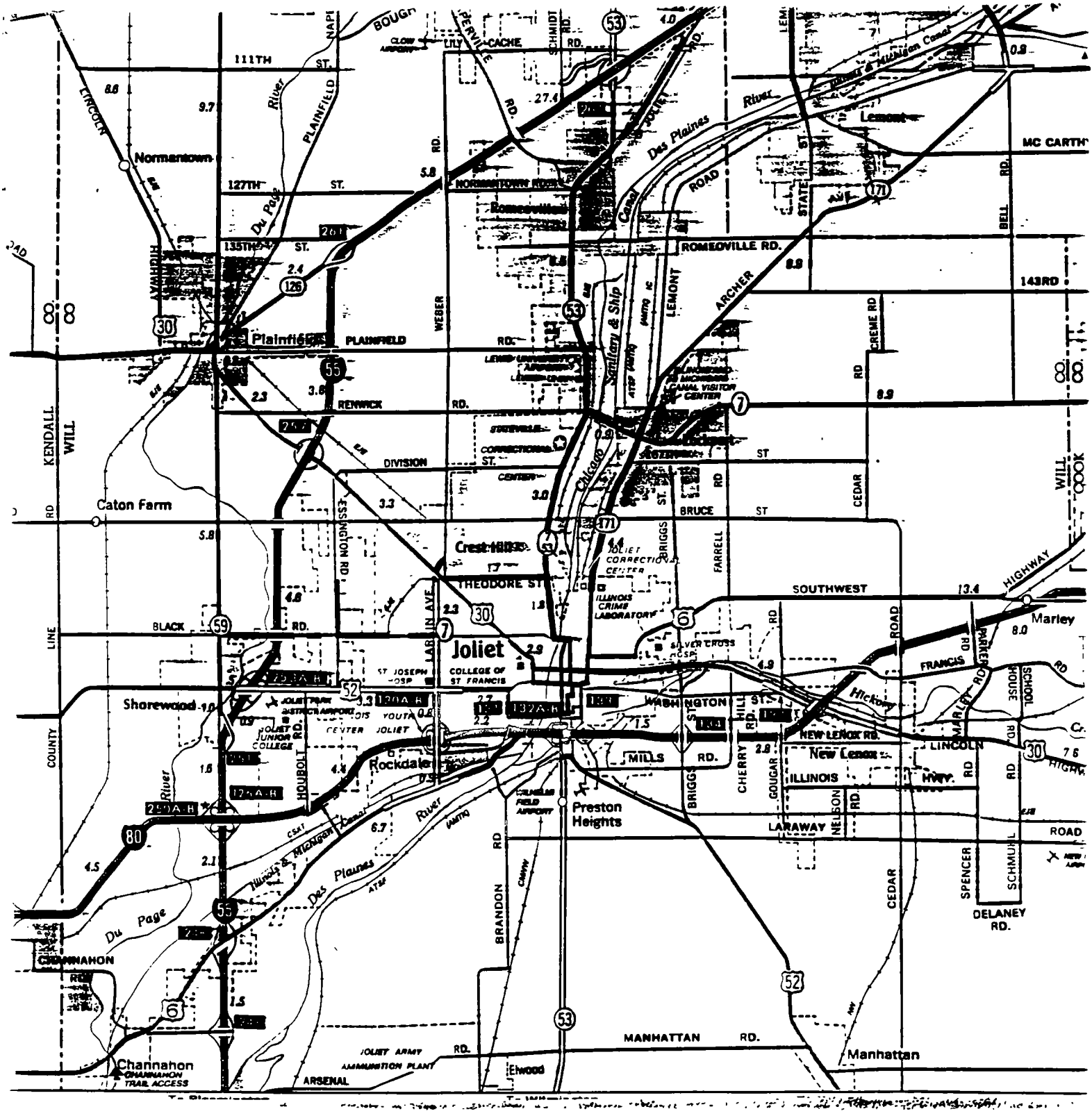
13 14 **Heat of Decomposition:** Not pertinent

13 15 **Heat of Solution:** Not pertinent

13 16 **Heat of Polymerization:** Not pertinent

Continued on pages 5 and 6

NOTES


Normantown
Plainfield
Caton Farm
Crest Hill
Joliet
Shorewood
Rockdale
Preston Heights
Lemont
Marley
New Lenox
Channahon
Manhattan
Ehwood
Romeoville
111TH ST.
127TH ST.
135TH ST.
143RD
ROMEOVILLE RD.
PLAINFIELD RD.
RENWICK RD.
DIVISION ST.
BRUCE ST
THEODORE ST
BLACK RD.
SOUTHWEST HIGHWAY
FRANCIS RD
WASHINGTON ST
NEW LENOX RD.
MILLS RD.
LARAWAY ROAD
DELANEY RD.
MANHATTAN RD.
ARSENAL
JOLIET ARMY AMMUNITION PLANT
MC CARTHY
KENDALL
WILL
COUNTY LINE
Du Page River
Des Plaines River
Chicago Sanitary & Ship Canal
Illinois & Michigan Canal
JOLIET CORRECTIONAL CENTER
ILLINOIS CRIME LABORATORY
COLLEGE OF ST FRANCIS
JOLIET JUNIOR COLLEGE
ST JOSEPH HOSP
SILVER CROSS HOSP
CANAL VISITOR CENTER
LEWIS UNIVERSITY
STATEVILLE CORRECTIONAL CENTER
JOLIET TRAIL DISTRICT AIRPORT
CHANNAHON TRAIL ACCESS
LAMBERT FIELD AIRPORT
LILY CACHE
SCHMIDT RD.
PERIVILLE RD.
LINCOLN HWY.
PLAINFIELD
WEBER RD.
LEMONT
ARCHER
CREME RD
CEDAR
BRIGGS
FARRELL
LABIN AVE
ESSINGTON RD
HOUBOLT RD.
CHERRY HILL RD.
GOUGAR
NELSON RD.
BRANDON RD
SPENCER
SCHMUHL
MARLEY RD
SCHOOL HOUSE RD
BELL RD.
STATE ST
Hickory
Lemont
Joliet
Marley
Manhattan
Channahon
Shorewood
Rockdale
Preston Heights
New Lenox
Ehwood
Caton Farm
Normantown
Romeoville
Crest Hill
Plainfield