

OILS, FUEL: 5

OFV

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Oily liquid	Dark	Strong lube oil odor
No. 5 Residual fuel oil		Usually floats on water.		
<p>Keep people away. Avoid contact with liquid. Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>				
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.			

<p>1. CORRECTIVE RESPONSE ACTIONS</p> <ul style="list-style-type: none"> Stop discharge Contain Collection Systems: Skim Chemical and Physical Treatment: Burn; Absorb Clean shore line Salvage waterfowl 	<p>2. CHEMICAL DESIGNATIONS</p> <ul style="list-style-type: none"> 2.1 CG Compatibility Group: 33; Miscellaneous Hydrocarbon Mixtures 2.2 Formula: Not applicable 2.3 IMO/UN Designation: 3.3/1223 2.4 DOT ID No.: 1993 2.5 CAS Registry No.: Currently not available 2.6 NAERG Guide No.: 128 2.7 Standard Industrial Trade Classification: 33440
<p>3. HEALTH HAZARDS</p> <p>3.1 Personal Protective Equipment: Protective gloves; goggles or face shield.</p> <p>3.2 Symptoms Following Exposure: INGESTION: gastrointestinal irritation. 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.</p> <p>3.3 Treatment of Exposure: Currently not available</p> <p>3.4 TLV-TWA: Notice of intended change: Not listed.</p> <p>3.5 TLV-STEL: Not listed.</p> <p>3.6 TLV-Ceiling: Not listed.</p> <p>3.7 Toxicity by Ingestion: Grade 1; LD₅₀ = 5 to 15 g/kg</p> <p>3.8 Toxicity by Inhalation: Currently not available.</p> <p>3.9 Chronic Toxicity: Currently not available</p> <p>3.10 Vapor (Gas) Irritant Characteristics: None</p> <p>3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.</p> <p>3.12 Odor Threshold: Currently not available</p> <p>3.13 IDLH Value: Not listed.</p> <p>3.14 OSHA PEL-TWA: Not listed.</p> <p>3.15 OSHA PEL-STEL: Not listed.</p> <p>3.16 OSHA PEL-Ceiling: Not listed.</p> <p>3.17 EPA AEGL: Not listed</p>	

4. FIRE HAZARDS

- 4.1 **Flash Point:** >130°F C.C.
- 4.2 **Flammable Limits in Air:** 1%-5%
- 4.3 **Fire Extinguishing Agents:** Dry chemical, foam, or carbon dioxide
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
- 4.5 **Special Hazards of Combustion Products:** Not pertinent
- 4.6 **Behavior in Fire:** Not pertinent
- 4.7 **Auto Ignition Temperature:** Currently not available
- 4.8 **Electrical Hazards:** Not pertinent
- 4.9 **Burning Rate:** 4 mm/min.
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent.
- 4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** No reaction
- 5.2 **Reactivity with Common Materials:** No reaction
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Not pertinent
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** Currently not available
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** Currently not available
- 6.4 **Food Chain Concentration Potential:** None
- 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Fuel oil No. 5 (heavy); Fuel oil No. 5 (light)
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open (flame arrester)
- 7.5 **IMO Pollution Category:** Currently not available
- 7.6 **Ship Type:** Currently not available
- 7.7 **Barge Hull Type:** Currently not available

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Flammable liquid
- 8.2 **49 CFR Class:** 3
- 8.3 **49 CFR Package Group:** III
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	0
Flammability (Red).....	2
Instability (Yellow).....	0
- 8.6 **EPA Reportable Quantity:** Not listed.
- 8.7 **EPA Pollution Category:** Not listed.
- 8.8 **RCRA Waste Number:** Not listed
- 8.9 **EPA FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Liquid
- 9.2 **Molecular Weight:** Not pertinent
- 9.3 **Boiling Point at 1 atm:** 426→1062°F = 218→570°C = 491→843°K
- 9.4 **Freezing Point:** 0°F = -18°C = 255°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 0.936 at 16°C (liquid)
- 9.8 **Liquid Surface Tension:** Currently not available
- 9.9 **Liquid Water Interfacial Tension:** Currently not available
- 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent
- 9.12 **Latent Heat of Vaporization:** Not pertinent
- 9.13 **Heat of Combustion:** -18,000 Btu/lb = -10,000 cal/g = -418.68 X 10⁵ J/kg
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Not pertinent
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** Currently not available
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** Currently not available

NOTES

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9.20 SATURATED LIQUID DENSITY		9.21 LIQUID HEAT CAPACITY		9.22 LIQUID THERMAL CONDUCTIVITY		9.23 LIQUID VISCOSITY	
Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F	Temperature (degrees F)	British thermal unit inch per hour-square foot-F	Temperature (degrees F)	Centipoise
50	58.360	50	0.460	40	0.873	100	43.500
52	58.360	52	0.461	45	0.873		
54	58.360	54	0.462	50	0.873		
56	58.360	56	0.463	55	0.873		
58	58.360	58	0.464	60	0.873		
60	58.360	60	0.465	65	0.873		
62	58.360	62	0.466	70	0.873		
64	58.360	64	0.467	75	0.873		
66	58.360	66	0.468	80	0.873		
68	58.360	68	0.469	85	0.873		
70	58.360	70	0.470	90	0.873		
72	58.360	72	0.471	95	0.873		
74	58.360	74	0.472	100	0.873		
76	58.360	76	0.473	105	0.873		
78	58.360	78	0.474				
80	58.360	80	0.475				
82	58.360	82	0.476				
84	58.360	84	0.477				
		86	0.478				
		88	0.479				
		90	0.480				
		92	0.481				
		94	0.482				
		96	0.483				
		98	0.484				
		100	0.485				

9.24 SOLUBILITY IN WATER		9.25 SATURATED VAPOR PRESSURE		9.26 SATURATED VAPOR DENSITY		9.27 IDEAL GAS HEAT CAPACITY	
Temperature (degrees F)	Pounds per 100 pounds of water	Temperature (degrees F)	Pounds per square inch	Temperature (degrees F)	Pounds per cubic foot	Temperature (degrees F)	British thermal unit per pound-F
	I N S O L U B I L I T Y	70	0.042		N O T		N O T
		75	0.049				
		80	0.057				
		85	0.065				
		90	0.076				
		95	0.087				
		100	0.100				
		105	0.114				
		110	0.131				
		115	0.149				
		120	0.170				
		125	0.193				
		130	0.218				
		135	0.247				
		140	0.279				
		145	0.314				
		150	0.352				
		155	0.395				
		160	0.443				
		165	0.495				
		170	0.552				
		175	0.615				
		180	0.683				
		185	0.758				
		190	0.841				
		195	0.930				