

OILS, FUEL: 2

OTW

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Home-heating oil	Oily liquid Yellow-brown Lube or fuel oil odor Floats on water.
<p>Keep people away. Avoid contact with liquid. Shut off ignition sources and call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	<p>Combustible. Extinguish with dry chemical, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.</p>
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>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.</p>
Water Pollution	<p>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.</p>

1. CORRECTIVE RESPONSE ACTIONS

- Stop discharge
- Contain
- Collection Systems: Skim
- Chemical and Physical Treatment: Burn
- Clean shore line
- Salvage waterfowl

2. CHEMICAL DESIGNATIONS

- 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.:** 68476-30-2
- 2.6 **NAERG Guide No.:** 128
- 2.7 **Standard Industrial Trade Classification:** 33440

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Protective gloves; goggles or face shield.
- 3.2 **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.
- 3.3 **Treatment of 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.
- 3.4 **TLV-TWA:** Notice of intended change: 100 mg/m³ (skin)
- 3.5 **TLV-STEL:** Not listed.
- 3.6 **TLV-Ceiling:** Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 1; LD₅₀ = 5-15 g/kg
- 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Currently not available
- 3.10 **Vapor (Gas) Irritant Characteristics:** Slight smarting of eyes or respiratory system if present in high concentrations. The effect is temporary.
- 3.11 **Liquid or Solid Characteristics:** Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of skin.
- 3.12 **Odor Threshold:** Currently not available
- 3.13 **IDLH Value:** Not listed.
- 3.14 **OSHA PEL-TWA:** Not listed.
- 3.15 **OSHA PEL-STEL:** Not listed.
- 3.16 **OSHA PEL-Ceiling:** Not listed.
- 3.17 **EPA AEGL:** Not listed

4. FIRE HAZARDS

- 4.1 **Flash Point:** 136°F C.C.
- 4.2 **Flammable Limits in Air:** Currently not available
- 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:** 494°F
- 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:**
200 ppm/24 hr/juvenile American shad/TLW/fresh water
20 ppm/96 hr/rainbow trout eggs/TLW/salt water
- 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:** Commercial
- 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:** 540-640°F = 282-338°C = 555-611°K
- 9.4 **Freezing Point:** -20°F = -29°C = 244°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 0.879 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** (est.) 25 dynes/cm = 0.025 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** (est.) 50 dynes/cm = 0.05 N/m at 20°C
- 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:** -19,440 Btu/lb = -10,800 cal/g = -452.17 X 10³ 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	54.740	30	0.429	30	0.908	0	3.773
52	54.740	35	0.431	35	0.908	10	3.397
54	54.740	40	0.434	40	0.908	20	3.071
56	54.740	45	0.436	45	0.908	30	2.788
58	54.740	50	0.439	50	0.908	40	2.541
60	54.740	55	0.441	55	0.908	50	2.324
62	54.740	60	0.443	60	0.908	60	2.134
64	54.740	65	0.446	65	0.908	70	1.965
66	54.740	70	0.448	70	0.908	80	1.815
68	54.740	75	0.451	75	0.908	90	1.681
70	54.740	80	0.453	80	0.908	100	1.561
72	54.740	85	0.456	85	0.908	110	1.454
74	54.740	90	0.458	90	0.908	120	1.358
76	54.740	95	0.460	95	0.908	130	1.270
78	54.740	100	0.463	100	0.908	140	1.191
80	54.740	105	0.465	105	0.908	150	1.120
82	54.740	110	0.468	110	0.908	160	1.054
84	54.740	115	0.470	115	0.908	170	0.995
		120	0.472	120	0.908	180	0.940
		125	0.475	125	0.908	190	0.890
		130	0.477	130	0.908	200	0.844
						210	0.802

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	55	0.466		N		N
	N	60	0.474		O		O
	S	65	0.481		T		T
	O	70	0.489				
	L	75	0.497		P		P
	U	80	0.505		E		E
	B	85	0.512		R		R
	L	90	0.520		T		T
	E	95	0.528		I		I
		100	0.535		N		N
		105	0.543		E		E
		110	0.550		N		N
		115	0.558		T		T
		120	0.565				
		125	0.573				
		130	0.580				