

JET FUELS: JP-1

JPO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms	Watery liquid Colorless Fuel oil odor
Fuel oil no. 1 Kerosene Kerosine Range oil	Floats on water.
Keep people away. Avoid contact with liquid. Shut off ignition sources and call fire department. 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. 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:** C₁₂H₂₆
 2.3 **IMO/UN Designation:** 3.3/1223
 2.4 **DOT ID No.:** 1863
 2.5 **CAS Registry No.:** Currently not available
 2.6 **NAERG Guide No.:** 128
 2.7 **Standard Industrial Trade Classification:** 33412

3. HEALTH HAZARDS

3.1 **Personal Protective Equipment:** Protective gloves; goggles or face shield.
 3.2 **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.
 3.3 **Treatment of Exposure:** ASPIRATION: enforce bed rest; administer oxygen; call a doctor. INGESTION: do NOT induce vomiting; call a doctor. EYES: wash with plenty of water. SKIN: wipe off and wash with soap and water.
 3.4 **TLV-TWA:** Not listed.
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 1; LD₅₀ = 5 to 15 g/kg
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** Currently not available
 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the 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 the skin.
 3.12 **Odor Threshold:** 1 ppm
 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:** 100°F C.C.
 4.2 **Flammable Limits in Air:** 0.7%-5%
 4.3 **Fire Extinguishing Agents:** Foam, dry chemical, or carbon dioxide
 4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
 4.5 **Special Hazards of Combustion Products:** Not pertinent
 4.6 **Behavior in Fire:** Not pertinent
 4.7 **Auto Ignition Temperature:** 444°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):** N₂ diluent: 10.5% @ 150°C; CO₂ diluent: 14.0% @ 150°C

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:** 2990 ppm/24 hr/bluegill/TL_m/fresh water
 6.2 **Waterfowl Toxicity:** Currently not available
 6.3 **Biological Oxygen Demand (BOD):** 53%, 5 days
 6.4 **Food Chain Concentration Potential:** None
 6.5 **GESAMP Hazard Profile:** Not listed

7. SHIPPING INFORMATION

7.1 **Grades of Purity:** 100%
 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:** 392 - 500°F = 200 - 260°C = 473 - 533°K
 9.4 **Freezing Point:** -45 to -55°F = -43 to -49°C = 316 to 321°K
 9.5 **Critical Temperature:** Not pertinent
 9.6 **Critical Pressure:** Not pertinent
 9.7 **Specific Gravity:** 0.80 at 15°C (liquid)
 9.8 **Liquid Surface Tension:** 23 - 32 dynes/cm = 0.023 - 0.032 N/m at 20 °C
 9.9 **Liquid Water Interfacial Tension:** 47 - 49 dynes/cm = 0.047 - 0.049 N/m at 20°C
 9.10 **Vapor (Gas) Specific Gravity:** Not pertinent
 9.11 **Ratio of Specific Heats of Vapor (Gas):** (est.) 1.030
 9.12 **Latent Heat of Vaporization:** 110 Btu/lb = 60 cal/g = 2.5 X 10⁵ J/kg
 9.13 **Heat of Combustion:** -18,540 Btu/lb = -10,300 cal/g = -431.24 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
34	50.810	0	0.434	0	0.926	-35	6.727
36	50.740	10	0.439	10	0.924	-30	6.065
38	50.670	20	0.444	20	0.921	-25	5.482
40	50.600	30	0.449	30	0.919	-20	4.965
42	50.530	40	0.454	40	0.917	-15	4.508
44	50.460	50	0.459	50	0.915	-10	4.101
46	50.390	60	0.464	60	0.913	-5	3.739
48	50.320	70	0.469	70	0.911	0	3.416
50	50.250	80	0.474	80	0.909	5	3.127
52	50.180	90	0.479	90	0.907	10	2.867
54	50.110	100	0.484	100	0.905	15	2.634
56	50.040	110	0.489	110	0.903	20	2.424
58	49.970	120	0.494	120	0.901	25	2.235
60	49.900	130	0.499	130	0.899	30	2.064
62	49.830	140	0.504	140	0.897	35	1.909
64	49.760	150	0.509	150	0.895	40	1.768
66	49.700	160	0.514	160	0.893	45	1.641
68	49.630	170	0.519	170	0.891	50	1.525
70	49.560	180	0.524	180	0.889	55	1.419
72	49.490	190	0.529	190	0.887	60	1.322
74	49.420	200	0.534	200	0.885	65	1.233
76	49.350	210	0.539	210	0.883	70	1.152
78	49.280					75	1.078
80	49.210						
82	49.140						
84	49.070						

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	70	0.041		N		C
	N	80	0.056		O		U
	S	90	0.075		T		R
	O	100	0.099				R
	L	110	0.130		P		E
	U	120	0.168		E		N
	B	130	0.217		R		T
	L	140	0.277		T		L
	E	150	0.350		I		Y
		160	0.440		N		
		170	0.548		E		N
		180	0.679		N		O
		190	0.835		T		T
		200	1.021				
		210	1.241				A
		220	1.500				V
		230	1.802				A
		240	2.154				I
		250	2.562				L
		260	3.033				A
		270	3.573				B
		280	4.192				L
		290	4.896				E
		300	5.695				