CAMPHOR OIL

CPO

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
Liquid camphor Liquid gum camphor Liquid impure camphor	Oily liquid Usually floats on water.	Colorless or brown or blue	Penetrating camphor odor

Call fire department.
Avoid contact with liquid.
Notify local health and pollution control agencies.
Protect water intakes.

Fire	Combustible. Extinguish with dry chemical, foam or carbon dioxide.
Exposure	CALL FOR MEDICAL AID. VAPOR Not irritating to eyes, nose or throat. Move to fresh air. LIQUID Irritating to skin and eyes. If swallowed, will cause nausea, vomiting or loss of consciousness. 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.
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 pollution control officials. Notify operators of nearby water intakes.

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
Contain
Collection Systems: Skim; Pump
Chemical and Physical Treatment:
Absorb
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 18; Ketone
2.2 Formula: $C_{10}H_{16}O$
2.3 IMO/UN Designation: 3.3/1130
2.4 DOT ID No.: 1130
2.5 CAS Registry No.: 76-22-2
2.6 NAERG Guide No.: 128
2.7 Standard Industrial Trade Classification: 51628

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Eye protection
3.2 Symptoms Following Exposure: Within 5 to 90 minutes after swallowing, the following may be noted: nausea and vomiting; feeling of warmth; headache; confusion, vertigo, excitement, restlessness, delirium, and hallucinations; increased muscular excitability, tremors, and jerky movements; epileptiform convulsions, followed by depression (convulsions sometimes occur early in the syndrome and may be severe, but they do not have the grave prognosis of strychnine convulsions); coma; central nervous depression may at times be the primary clinical response; death results from respiratory failure or from status epilepticus; slow convalescence (days or weeks), often with persistent gastric distress.
3.3 Treatment of Exposure: For an oral intoxication, administer gastric lavage, cathartics, diuretics, and sedatives. Control convulsions with a short-acting barbiturate, chloral hydrate, or ether. Do NOT use analeptics or opiates.
3.4 TLV-TWA: 2 ppm
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: 3 ppm
3.7 Toxicity by Ingestion: Currently not available
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Vapors are nonirritating to the eyes and throat.
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: Currently not available
3.13 IDLH Value: 200 mg/m^3
3.14 OSHA PEL-TWA: 2 mg/m^3
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: 117°F C.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Foam, carbon dioxide, or dry chemical
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: The solid often evaporates without first melting.
4.7 Auto Ignition Temperature: 466°C
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: Currently not available
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 64.3 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 18.0 (calc.)
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:
Bioaccumulation: T
Damage to living resources: (3)
Human Oral hazard: 2
Human Contact hazard: 0
Reduction of amenities: XX

7. SHIPPING INFORMATION

7.1 Grades of Purity: Each lot of camphor oil has a unique composition, which varies with the time of year and the country of origin. At least a dozen grades are known. Most camphor sold in the U.S. is synthetic and is quite pure.
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open
7.5 IMO Pollution Category: B
7.6 Ship Type: 2
7.7 Barge Hull Type: 2

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: 347 - 392°F = 175 - 200°C = 448 - 473°K
9.4 Freezing Point: Not pertinent
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 0.923 at 25°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: Currently not available
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
32	57.430	32	0.478	32	0.901	32	14.250
34	57.430	34	0.478	34	0.901	34	13.960
36	57.430	36	0.478	36	0.901	36	13.670
38	57.430	38	0.478	38	0.901	38	13.400
40	57.430	40	0.478	40	0.901	40	13.130
42	57.430	42	0.478	42	0.901	42	12.870
44	57.430	44	0.478	44	0.901	44	12.620
46	57.430	46	0.478	46	0.901	46	12.380
48	57.430	48	0.478	48	0.901	48	12.140
50	57.430	50	0.478	50	0.901	50	11.900
52	57.430	52	0.478	52	0.901	52	11.680
54	57.430	54	0.478	54	0.901	54	11.460
56	57.430	56	0.478	56	0.901	56	11.240
58	57.430	58	0.478	58	0.901	58	11.030
60	57.430	60	0.478	60	0.901	60	10.830
62	57.430	62	0.478	62	0.901	62	10.630
64	57.430	64	0.478	64	0.901	64	10.440
66	57.430	66	0.478	66	0.901	66	10.250
68	57.430	68	0.478	68	0.901	68	10.070
70	57.430	70	0.478	70	0.901	70	9.890
72	57.430	72	0.478	72	0.901	72	9.715
74	57.430	74	0.478	74	0.901	74	9.546
76	57.430	76	0.478	76	0.901	76	9.380
78	57.430	78	0.478	78	0.901	78	9.218
80	57.430	80	0.478	80	0.901	80	9.061

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
	INSOLUBLE		CURRENTLY NOT AVAILABLE		NOT PERTINENT		NOT PERTINENT