

DECAHYDRONAPHTHALENE

DHN

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Bicyclo[4.4.0]Decane DEC Decalin DE Kalin Naphthane Naphthalene Perhydronaphthalene	Liquid Colorless Turpentine-like odor	Floats on water.
<p>Keep people away. Avoid contact with liquid and vapor. Call fire department. Notify local health and pollution control agencies.</p>		
Fire	Combustible. Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire.	
Exposure	Call for medical aid. LIQUID Irritating to skin and eyes. If swallowed will cause headache, nausea, or 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.	
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. CORRECTIVE RESPONSE ACTIONS Stop discharge Contain Collection Systems: Skim; Dredge Chemical and Physical Treatment: Burn; Absorb Clean shore line	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: Not listed. 2.2 Formula: C ₁₀ H ₁₈ 2.3 IMO/UN Designation: 3.3/1147 2.4 DOT ID No.: 1147 2.5 CAS Registry No.: 91-17-8 2.6 NAERG Guide No.: 130 2.7 Standard Industrial Trade Classification: 51129
3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Air mask or self-contained breathing apparatus if in enclosed tank; rubber gloves or protective cream; goggles or face shield. 3.2 Symptoms Following Exposure: Inhalation or ingestion irritates nose and throat, causes numbness, headache, vomiting; urine may become blue. Irritates eyes. Liquid de-fats skin and causes cracking and secondary infection; eczema may develop. 3.3 Treatment of Exposure: INHALATION: remove to fresh air. EYES: flush with water for at least 15 min. SKIN: wash with water and mild soap. INGESTION: give emetic such as warm salt water, followed by a mild cathartic; direct physician to conserve liver and kidney function. 3.4 TLV-TWA: Not listed. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 2; oral LD ₅₀ = 4,170 mg/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Currently not available 3.11 Liquid or Solid Characteristics: Currently not available 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:** 134°F O.C.
 - 4.2 **Flammable Limits in Air:** 0.7%-5.4%
 - 4.3 **Fire Extinguishing Agents:** Water, foam, dry chemical, carbon dioxide
 - 4.4 **Fire Extinguishing Agents Not to Be Used:** Water
 - 4.5 **Special Hazards of Combustion Products:** Not pertinent
 - 4.6 **Behavior in Fire:** Not pertinent
 - 4.7 **Auto Ignition Temperature:** 482°F
 - 4.8 **Electrical Hazards:** Currently not available
 - 4.9 **Burning Rate:** 5.9 mm/min.
 - 4.10 **Adiabatic Flame Temperature:** Currently not available
 - 4.11 **Stoichiometric Air to Fuel Ratio:** 69.0 (calc.)
 - 4.12 **Flame Temperature:** Currently not available
 - 4.13 **Combustion Molar Ratio (Reactant to Product):** 19.0 (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:** Currently not available
- 6.5 **GESAMP Hazard Profile:**
 Bioaccumulation: 0
 Damage to living resources: 1
 Human Oral hazard: 1
 Human Contact hazard: 0
 Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Technical: mixture of cis-(35%) and trans-(65%) isomers. Properties of all such mixtures are very similar. Spectro grade.
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open (flame arrester)
- 7.5 **IMO Pollution Category:** D
- 7.6 **Ship Type:** Data 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:** Yes
- 8.5 **NFPA Hazard Classification:**

Category	Classification
Health Hazard (Blue).....	2
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:** 138.2
- 9.3 **Boiling Point at 1 atm:** 383°F = 195°C = 468°K
- 9.4 **Freezing Point:** -44°F = -42°C = 231°K
- 9.5 **Critical Temperature:** Not pertinent
- 9.6 **Critical Pressure:** Not pertinent
- 9.7 **Specific Gravity:** 0.89 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** 30 dynes/cm = 0.030 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** 51.5 dynes/cm = 0.0515 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:** 130 Btu/lb = 71 cal/g = 3.0 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** -19,200 Btu/lb = -10,700 cal/g = -447 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
52	56.000	55	0.380	135	0.735	52	2.165
54	55.940	60	0.384	140	0.735	54	2.119
56	55.890	65	0.387	145	0.735	56	2.073
58	55.830	70	0.391	150	0.735	58	2.029
60	55.780	75	0.394	155	0.735	60	1.986
62	55.720	80	0.398	160	0.735	62	1.944
64	55.670	85	0.401	165	0.735	64	1.903
66	55.610	90	0.405	170	0.735	66	1.864
68	55.560	95	0.408	175	0.735	68	1.826
70	55.500	100	0.412	180	0.735	70	1.788
72	55.440	105	0.415	185	0.735	72	1.752
74	55.390	110	0.419	190	0.735	74	1.717
76	55.330	115	0.422	195	0.735	76	1.683
78	55.280	120	0.426	200	0.735	78	1.649
80	55.220	125	0.430	205	0.735	80	1.617
82	55.170			210	0.735	82	1.585
84	55.110			215	0.735	84	1.555
86	55.060			220	0.735	86	1.525

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	130	0.123	130	0.00269		N
	N	140	0.160	140	0.00345		O
	S	150	0.207	150	0.00438		T
	O	160	0.266	160	0.00553		
	L	170	0.338	170	0.00692		P
	U	180	0.427	180	0.00860		E
	B	190	0.536	190	0.01062		R
	L	200	0.667	200	0.01302		T
	E	210	0.825	210	0.01586		I
		220	1.014	220	0.01921		N
		230	1.239	230	0.02313		E
		240	1.505	240	0.02769		N
		250	1.818	250	0.03299		T
		260	2.185	260	0.03910		
		270	2.613	270	0.04611		
		280	3.110	280	0.05413		
		290	3.684	290	0.06327		
		300	4.344	300	0.07363		
		310	5.101	310	0.08533		
		320	5.965	320	0.09850		
		330	6.948	330	0.11330		
		340	8.062	340	0.12980		
		350	9.320	350	0.14820		
		360	10.740	360	0.16860		
		370	12.330	370	0.19130		
		380	14.110	380	0.21630		