

N-HEXANE

HXA

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Hexane	Watery liquid Colorless Gasoline-like odor
Floats on water. Flammable, irritating vapor is produced.	
<p>Evacuate. Keep people away. Avoid contact with liquid and vapor. Shut off ignition sources and call fire department. Stay upwind and use water spray to "knock down" vapor. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	<p>FLAMMABLE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. 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>VAPOR Irritating to nose and throat. If inhaled, will cause coughing or dizziness. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Irritating to skin and eyes. If swallowed, will cause 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. DO NOT INDUCE VOMITING.</p>
Water Pollution	<p>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

Stop discharge
Contain
Collection Systems: Skim
Chemical and Physical Treatment: Burn
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 31; Paraffin
2.2 Formula: CH₂(CH₂)₄CH₃
2.3 IMO/UN Designation: 3.1/1208
2.4 DOT ID No.: 1208
2.5 CAS Registry No.: 110-54-3
2.6 NAERG Guide No.: 128
2.7 Standard Industrial Trade Classification: 51114

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Eye protection (like gasoline).
- 3.2 **Symptoms Following Exposure:** INHALATION causes irritation of respiratory tract, cough, mild depression, cardiac arrhythmias. ASPIRATION causes severe lung irritation, coughing, pulmonary edema; excitement followed by depression. INGESTION causes nausea, vomiting, swelling of abdomen, headache, depression.
- 3.3 **Treatment of Exposure:** Call a doctor. INHALATION: maintain respiration; give oxygen if needed. ASPIRATION: enforce bed rest; give oxygen if needed. INGESTION: do NOT induce vomiting. SKIN OR EYES: wipe off; wash skin with soap and water; wash eyes with copious amounts of water.
- 3.4 TLV-TWA: 50 ppm
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
3.7 Toxicity by Ingestion: Very slight
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: None
- 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors are nonirritating to the eyes and throat.
- 3.11 **Liquid or Solid Characteristics:** No appreciable hazard. Practically harmless to the skin.
- 3.12 **Odor Threshold:** Currently not available
- 3.13 IDLH Value: 1,100 ppm
3.14 OSHA PEL-TWA: 500 ppm
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:**
-7°F C.C.
- 4.2 **Flammable Limits in Air:** 1.2%-7.7%
- 4.3 **Fire Extinguishing Agents:** Foam, dry chemical, 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:** Vapors may explode
- 4.7 **Auto Ignition Temperature:** 437°F
- 4.8 **Electrical Hazards:** Class I, group D
- 4.9 **Burning Rate:** 7.3 mm/min.
- 4.10 **Adiabatic Flame Temperature:** Currently not available
- 4.11 **Stoichiometric Air to Fuel Ratio:** 45.2 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 13.0 (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):** 0% (theor.), 7 days
- 6.4 **Food Chain Concentration Potential:**
None
- 6.5 **GESAMP Hazard Profile:**
Bioaccumulation: 0
Damage to living resources: 3
Human Oral hazard: 0
Human Contact hazard: II
Reduction of amenities: X

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Research grade; technical grade
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Open (flame arrester) or pressure-vacuum
- 7.5 **IMO Pollution Category:** (C)
- 7.6 **Ship Type:** 3
- 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:** II
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**
- | Category | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 1 |
| Flammability (Red)..... | 3 |
| 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:** 86.17
- 9.3 **Boiling Point at 1 atm:** 155.7°F = 68.7°C = 341.9°K
- 9.4 **Freezing Point:** -219.3°F = -139.6°C = 133.6°K
- 9.5 **Critical Temperature:** 453.6°F = 234.2°C = 507.4°K
- 9.6 **Critical Pressure:** 436.6 psia = 29.7 atm = 3.01 MN/m²
- 9.7 **Specific Gravity:** 0.659 at 20°C (liquid)
- 9.8 **Liquid Surface Tension:** 18.4 dynes/cm = 0.0184 N/m at 20°C
- 9.9 **Liquid Water Interfacial Tension:** 51.1 dynes/cm = 0.0511 N/m at 20°C
- 9.10 **Vapor (Gas) Specific Gravity:** 3.0
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** 1.063
- 9.12 **Latent Heat of Vaporization:** 144 Btu/lb = 80.0 cal/g = 3.35 X 10⁵ J/kg
- 9.13 **Heat of Combustion:** -19,246 Btu/lb = -10,692 cal/g = -447.65 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:** 36.27 cal/g
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** 5.0 psia

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
35	42.220	0	0.502	-5	0.933	35	0.334
40	42.060	10	0.508	0	0.927	40	0.330
45	41.890	20	0.513	5	0.921	45	0.327
50	41.730	30	0.519	10	0.914	50	0.324
55	41.570	40	0.524	15	0.908	55	0.321
60	41.400	50	0.530	20	0.902	60	0.318
65	41.240	60	0.535	25	0.895	65	0.315
70	41.070	70	0.541	30	0.889	70	0.312
75	40.910	80	0.547	35	0.883	75	0.309
80	40.740	90	0.552	40	0.876	80	0.306
85	40.580	100	0.558	45	0.870	85	0.304
90	40.410	110	0.563	50	0.863	90	0.301
95	40.250	120	0.569	55	0.857	95	0.298
100	40.080	130	0.574	60	0.851	100	0.296
105	39.920	140	0.580	65	0.844	105	0.294
110	39.750	150	0.585	70	0.838	110	0.291
115	39.590			75	0.832	115	0.289
120	39.420			80	0.825	120	0.287
125	39.260			85	0.819	125	0.285
130	39.090			90	0.813	130	0.282
135	38.930			95	0.806	135	0.280
140	38.760			100	0.800	140	0.278
145	38.600			105	0.794	145	0.276
				110	0.787		
				115	0.781		

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	0	0.312	0	0.00545	0	0.350
	N	10	0.439	10	0.00750	25	0.365
	S	20	0.607	20	0.01016	50	0.381
	O	30	0.827	30	0.01355	75	0.396
	L	40	1.108	40	0.01781	100	0.411
	U	50	1.466	50	0.02308	125	0.426
	B	60	1.913	60	0.02955	150	0.440
	L	70	2.467	70	0.03740	175	0.455
	E	80	3.147	80	0.04681	200	0.469
		90	3.971	90	0.05799	225	0.484
		100	4.962	100	0.07116	250	0.498
		110	6.143	110	0.08656	275	0.512
		120	7.539	120	0.10440	300	0.526
		130	9.177	130	0.12490	325	0.539
		140	11.090	140	0.14840	350	0.553
		150	13.300	150	0.17510	375	0.566
		160	15.840	160	0.20520	400	0.579
		170	18.740	170	0.23890	425	0.592
		180	22.050	180	0.27670	450	0.605
		190	25.780	190	0.31860	475	0.618
		200	29.990	200	0.36490	500	0.630
		210	34.700	210	0.41600	525	0.642
						550	0.655
						575	0.667
						600	0.678