1-NONENE

NNE

CAUTIONARY RESPONSE INFORMATION

Common Synonyms
n-Heptylethylene
1-Nonylene

Liquid Colorless Gasoline-like odor

Floats on water. Flammable, irritating vapor is produced.

Keep people away.
Avoid inhalation.
Shut off ignition sources and call fire department.
Stay upwind and use water spray to ``knock down'' vapor.
Avoid contact with liquid and vapor.
Notify local health and pollution control agencies.
Protect water intakes.

Fire

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.

Exposure

CALL FOR MEDICAL AID.

VAPOR
Irritating to eyes, nose and throat.
If inhaled, will cause dizziness, headache, difficult breathing or loss of consciousness.
Move to fresh air.
If breathing has stopped, give artificial respiration.
If breathing is difficult, give oxygen.

LIQUID
Irritating to skin and eyes.
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

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
Chemical and Physical Treatment: Burn
Clean shore line
Salvage waterfowl

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 30; Olefin
2.2 Formula: $C_7H_{15}CH{=}CH_2$
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: Currently not available
2.6 NAERG Guide No.: Not listed
2.7 Standard Industrial Trade Classification: 51119

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Respiratory organic vapor canister or air-supplied mask; face splash shield.
3.2 Symptoms Following Exposure: High vapor concentrations irritate eyes and respiratory tract and act as an anesthetic.
3.3 Treatment of Exposure: INHALATION: remove to fresh air; if breathing stops, apply artificial respiration; administer oxygen; call a physician. INGESTION: if swallowed, do NOT induce vomiting because of aspiration hazard.
3.4 TLV-TWA: Not listed.
3.5 TLV-STEL: Not listed.
3.6 TLV-Ceiling: Not listed.
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 cause a slight smarting of the eyes or respiratory system if present at 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: 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: 78°F O.C.
4.2 Flammable Limits in Air: 0.8% (LEL)
4.3 Fire Extinguishing Agents: Foam, carbon dioxide, or dry chemical
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: Currently not available
4.8 Electrical Hazards: Not pertinent
4.9 Burning Rate: 6.0 mm/min.
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: 0
Damage to living resources: 3
Human Oral hazard: (1)
Human Contact hazard: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

7.1 Grades of Purity: Technical
7.2 Storage Temperature: Ambient
7.3 Inert Atmosphere: No requirement
7.4 Venting: Open (flame arrester)
7.5 IMO Pollution Category: B
7.6 Ship Type: 3
7.7 Barge Hull Type: Currently not available

8. HAZARD CLASSIFICATIONS

8.1 49 CFR Category: Not listed
8.2 49 CFR Class: Not pertinent
8.3 49 CFR Package Group: Not listed.
8.4 Marine Pollutant: No
8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	0
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: 126.2
9.3 Boiling Point at 1 atm: 297°F = 147°C = 420°K
9.4 Freezing Point: –115°F = –81.7°C = 191.5°K
9.5 Critical Temperature: 622.0°F = 327.8°C = 601°K
9.6 Critical Pressure: 360 psia = 24.5 atm = 2.98 MN/m^2
9.7 Specific Gravity: 0.733 at 20°C (liquid)
9.8 Liquid Surface Tension: 23.0 dynes/cm = 0.0230 N/m at 20°C
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): 1.044
9.12 Latent Heat of Vaporization: 124 Btu/lb = 68.8 cal/g = 2.88 X 10^5 J/kg
9.13 Heat of Combustion: –18,979 Btu/lb = –10,544 cal/g = –441.46 X 10^5 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: 0.21 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
40	46.290	34	0.491		C	40	0.756
50	46.010	36	0.492		U	50	0.701
60	45.740	38	0.493		R	60	0.652
70	45.460	40	0.494		R	70	0.608
80	45.190	42	0.495		E	80	0.569
90	44.920	44	0.497		N	90	0.533
100	44.640	46	0.498		T	100	0.501
110	44.370	48	0.499		L	110	0.472
120	44.090	50	0.500		Y	120	0.445
130	43.820	52	0.501			130	0.421
140	43.550	54	0.502		N	140	0.398
150	43.270	56	0.503		O	150	0.378
160	43.000	58	0.504		T	160	0.359
170	42.720	60	0.505			170	0.342
180	42.450	62	0.507		A	180	0.326
190	42.180	64	0.508		V	190	0.311
200	41.900	66	0.509		A	200	0.298
210	41.630	68	0.510		I	210	0.285
		70	0.511		L		
		72	0.512		A		
		74	0.513		B		
		76	0.514		L		
		78	0.515		E		
		80	0.517				
		82	0.518				
		84	0.519				

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	0.081	70	0.00179	0	0.335
	N	75	0.096	75	0.00211	25	0.350
	S	80	0.114	80	0.00249	50	0.364
	O	85	0.135	85	0.00291	75	0.379
	L	90	0.159	90	0.00340	100	0.393
	U	95	0.187	95	0.00396	125	0.407
	B	100	0.219	100	0.00459	150	0.421
	L	105	0.255	105	0.00531	175	0.435
	E	110	0.296	110	0.00611	200	0.448
		115	0.343	115	0.00702	225	0.462
		120	0.396	120	0.00803	250	0.475
		125	0.455	125	0.00916	275	0.488
		130	0.523	130	0.01042	300	0.501
		135	0.598	135	0.01182	325	0.514
		140	0.682	140	0.01337	350	0.526
		145	0.776	145	0.01508	375	0.538
		150	0.880	150	0.01697	400	0.551
		155	0.996	155	0.01905	425	0.562
		160	1.124	160	0.02133	450	0.574
		165	1.266	165	0.02383	475	0.586
		170	1.423	170	0.02656	500	0.597
		175	1.595	175	0.02954	525	0.609
		180	1.784	180	0.03278	550	0.620
		185	1.991	185	0.03630	575	0.631
		190	2.217	190	0.04012	600	0.641
		195	2.465	195	0.04426		