

# NONANOL

NNN

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> 1-Nonanol Nonyl alcohol Nonyl alcohol/pelargonic alcohol Octycarbinal	Liquid  Floats on water. Freezing point is 23°F.	Colorless  Rose or fruity odor
<b>Call fire department.</b> Notify local health and pollution control agencies. Protect water intakes.		
<b>Fire</b>	Combustible. Extinguish with dry chemical, alcohol foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
<b>Exposure</b>	CALL FOR MEDICAL AID.  LIQUID Harmful if swallowed. IF SWALLOWED and victim is CONSCIOUS, have victim drink water or milk.	
<b>Water Pollution</b>	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:  
Absorb  
Clean shore line  
Salvage waterfowl

## 2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 20; Alcohol,  
glycol  
2.2 Formula:  $\text{CH}_3(\text{CH}_2)_7\text{CH}_2\text{OH}$   
2.3 IMO/UN Designation: Not listed  
2.4 DOT ID No.: Not listed  
2.5 CAS Registry No.: 143-08-8  
2.6 NAERG Guide No.: Not listed  
2.7 Standard Industrial Trade Classification:  
51219

## 3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: Goggles or face shield; rubber gloves.
- 3.2 Symptoms Following Exposure: Liquid irritates eyes.
- 3.3 Treatment of Exposure: Flush eyes and skin with water for at least 15 min.
- 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; LD<sub>50</sub> = 0.5 to 5 g/kg (rat)
- 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: 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: 210°F O.C.  
: 165°F C.C.
- 4.2 Flammable Limits in Air: 0.8%-6.1%
- 4.3 Fire Extinguishing Agents: Alcohol foam, dry chemical, or carbon dioxide
- 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: Currently not available
- 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):  
(theor.) 9.9%, 1 day
- 6.4 Food Chain Concentration Potential:  
None
- 6.5 GESAMP Hazard Profile:  
Bioaccumulation: T  
Damage to living resources: 3  
Human Oral hazard: -  
Human Contact hazard: I  
Reduction of amenities: XX

## 7. SHIPPING INFORMATION

- 7.1 Grades of Purity: 97%
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Open (flame arrester)
- 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: 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: Not listed
- 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: 144.26
- 9.3 Boiling Point at 1 atm: 415°F = 213°C = 486°K
- 9.4 Freezing Point: 23°F = -5°C = 268°K
- 9.5 Critical Temperature: 759.2°F = 404°C = 677.2°K
- 9.6 Critical Pressure: 350 psia = 24 atm = 2.4 MN/m<sup>2</sup>
- 9.7 Specific Gravity: 0.827 at 20°C (liquid)
- 9.8 Liquid Surface Tension: 28 dynes/cm = 0.028 N/m at 24°C
- 9.9 Liquid Water Interfacial Tension: 9.0 dynes/cm = 0.0090 N/m at 21.3°C
- 9.10 Vapor (Gas) Specific Gravity: Not pertinent
- 9.11 Ratio of Specific Heats of Vapor (Gas): 1.039
- 9.12 Latent Heat of Vaporization: 131 Btu/lb = 72.5 cal/g = 3.04 X 10<sup>6</sup> J/kg
- 9.13 Heat of Combustion: -17,800 Btu/lb = -9860 cal/g = -413 X 10<sup>6</sup> 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
35	52.480	85	0.588	60	1.055	46	20,900
40	52.340	90	0.595	65	1.052	48	19,940
45	52.200	95	0.603	70	1.048	50	19,030
50	52.060	100	0.610	75	1.045	52	18,160
55	51.920	105	0.617	80	1.042	54	17,350
60	51.780	110	0.624	85	1.039	56	16,570
65	51.640	115	0.632	90	1.036	58	15,840
70	51.510	120	0.639	95	1.033	60	15,140
75	51.370	125	0.646	100	1.030	62	14,480
80	51.230	130	0.653	105	1.027	64	13,860
85	51.090	135	0.660	110	1.023	66	13,260
90	50.950	140	0.668	115	1.020	68	12,690
95	50.810	145	0.675	120	1.017	70	12,160
100	50.670	150	0.682	125	1.014	72	11,650
105	50.530			130	1.011	74	11,160
110	50.400			135	1.008	76	10,700
115	50.260			140	1.005	78	10,260
120	50.120			145	1.001	80	9,839
				150	0.998	82	9,440
				155	0.995	84	9,061
				160	0.992	86	8,699
				165	0.989	88	8,354
				170	0.986	90	8,025
				175	0.983	92	7,711
				180	0.979	94	7,412
				185	0.976	96	7,126

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	220	0.244	220	0.00482	0	0.329	
N	230	0.327	230	0.00638	25	0.343	
S	240	0.435	240	0.00835	50	0.357	
O	250	0.570	250	0.01079	75	0.371	
L	260	0.738	260	0.01379	100	0.384	
U	270	0.947	270	0.01744	125	0.398	
B	280	1.202	280	0.02184	150	0.411	
L	290	1.511	290	0.02709	175	0.424	
E	300	1.884	300	0.03333	200	0.437	
	310	2.329	310	0.04066	225	0.450	
	320	2.856	320	0.04923	250	0.463	
	330	3.476	330	0.05916	275	0.475	
	340	4.202	340	0.07061	300	0.488	
	350	5.044	350	0.08373	325	0.500	
	360	6.018	360	0.09867	350	0.512	
	370	7.137	370	0.11560	375	0.524	
	380	8.415	380	0.13470	400	0.536	
	390	9.868	390	0.15610	425	0.547	
	400	11.510	400	0.18000	450	0.559	
	410	13.360	410	0.20650	475	0.570	
	420	15.440	420	0.23590	500	0.582	
	430	17.760	430	0.26830	525	0.593	
	440	20.350	440	0.30400	550	0.604	
	450	23.210	450	0.34290	575	0.615	
	460	26.380	460	0.38550	600	0.625	
	470	29.860	470	0.43170			