

# N-PROPYL ACETATE

PAT

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Acetic acid, n-propyl ether		Liquid	Colorless	Mild odor
Floats on water. Flammable, irritating vapor is produced.				
<p>Keep people away. 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>				
<b>Fire</b>	<p><b>FLAMMABLE.</b> Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Extinguish with dry chemical, carbon dioxide, or alcohol foam. Water may be ineffective on fire. Cool exposed containers with water.</p>			
<b>Exposure</b>	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Irritating to eyes, nose and throat. If inhaled, will cause nausea, vomiting, dizziness, or loss of consciousness. 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. Harmful if swallowed. 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.</p>			
<b>Water Pollution</b>	<p>Effect of low concentrations on aquatic life is unknown. 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  
Collection Systems: Skim  
Salvage waterfowl

### 2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 34; Ester  
2.2 Formula: CH<sub>3</sub>COOCH<sub>2</sub>CH<sub>2</sub>CH<sub>3</sub>  
2.3 IMO/UN Designation: 3.2/1276  
2.4 DOT ID No.: 1276  
2.5 CAS Registry No.: 109-60-4  
2.6 NAERG Guide No.: 129  
2.7 Standard Industrial Trade Classification: 51372

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Air-supplied mask or chemical canister; goggles or face shield; protective gloves.
- 3.2 **Symptoms Following Exposure:** Contact with skin and eyes causes no serious injury. High vapor concentrations will be irritating and will cause nausea, vomiting, and dizziness, with final loss of consciousness.
- 3.3 **Treatment of Exposure:** INHALATION: remove victim to fresh air; give artificial respiration if breathing has stopped; give oxygen if breathing is difficult. SKIN AND EYES: flush with water.
- 3.4 TLV-TWA: 200 ppm  
3.5 TLV-STEL: 250 ppm  
3.6 TLV-Ceiling: Not listed.
- 3.7 **Toxicity by Ingestion:** Grade 2; LD<sub>50</sub> = 0.5 to 5 g/kg  
3.8 **Toxicity by Inhalation:** Currently not available.  
3.9 **Chronic Toxicity:** None
- 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause a slight smarting of the eyes or respiratory system if present in 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:** 70 mg/m<sup>3</sup>  
3.13 **IDLH Value:** 1,700 ppm  
3.14 **OSHA PEL-TWA:** 200 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:** 65°F O.C. 58°F C.C.  
4.2 **Flammable Limits in Air:** 2.0%-8.0%  
4.3 **Fire Extinguishing Agents:** Carbon dioxide or dry chemical for small fires; alcohol foam for large fires.  
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:** 842°F  
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:** 30.9 (calc.)  
4.12 **Flame Temperature:** Currently not available  
4.13 **Combustion Molar Ratio (Reactant to Product):** 10.0 (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:** 820 ppm/24 hr/brine shrimp/TL<sub>m</sub>  
6.2 **Waterfowl Toxicity:** Currently not available  
6.3 **Biological Oxygen Demand (BOD):** 62% of theoretical in 5 days/freshwater  
6.4 **Food Chain Concentration Potential:** None  
6.5 **GESAMP Hazard Profile:** Not listed

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 90-100%  
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:** 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:** 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:** 102.13  
9.3 **Boiling Point at 1 atm:** 214.9°F = 101.6°C = 374.8°K  
9.4 **Freezing Point:** -139°F = -95.0°C = 178.2°K  
9.5 **Critical Temperature:** 528.8°F = 276°C = 549.2°K  
9.6 **Critical Pressure:** 485 psia = 33 atm = 3.3 MN/m<sup>2</sup>  
9.7 **Specific Gravity:** 0.886 at 20°C (liquid)  
9.8 **Liquid Surface Tension:** 24.3 dynes/cm = 0.0243 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):** 1.071  
9.12 **Latent Heat of Vaporization:** 145 Btu/lb = 80.3 cal/g = 3.36 X 10<sup>5</sup> J/kg  
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:** 1.3 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	56.570	35	0.442	85	0.971	55	0.637
40	56.370	40	0.444	90	0.966	60	0.614
45	56.180	45	0.447	95	0.961	65	0.592
50	55.990	50	0.450	100	0.956	70	0.571
55	55.800	55	0.453	105	0.951	75	0.551
60	55.610	60	0.455	110	0.946	80	0.532
65	55.420	65	0.458	115	0.940	85	0.514
70	55.230	70	0.461	120	0.935	90	0.497
75	55.040	75	0.464	125	0.930	95	0.481
80	54.850	80	0.467	130	0.925	100	0.466
85	54.660	85	0.469	135	0.920	105	0.451
90	54.470	90	0.472	140	0.915	110	0.437
95	54.280	95	0.475	145	0.910	115	0.424
100	54.090	100	0.478	150	0.905	120	0.412
105	53.890			155	0.900	125	0.400
110	53.700			160	0.895	130	0.388
115	53.510			165	0.890	135	0.377
120	53.320			170	0.885	140	0.367
125	53.130						
130	52.940						
135	52.750						
140	52.560						

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
68	2.000	40	0.187	40	0.00356	0	0.265
		50	0.266	50	0.00497	25	0.276
		60	0.373	60	0.00683	50	0.286
		70	0.514	70	0.00923	75	0.297
		80	0.697	80	0.01229	100	0.307
		90	0.933	90	0.01614	125	0.317
		100	1.232	100	0.02094	150	0.327
		110	1.607	110	0.02684	175	0.337
		120	2.072	120	0.03401	200	0.346
		130	2.644	130	0.04266	225	0.356
		140	3.340	140	0.05299	250	0.365
		150	4.179	150	0.06522	275	0.375
		160	5.183	160	0.07957	300	0.384
		170	6.374	170	0.09631	325	0.393
		180	7.777	180	0.11570	350	0.402
		190	9.419	190	0.13790	375	0.410
		200	11.330	200	0.16340	400	0.419
		210	13.530	210	0.19230	425	0.427
		220	16.060	220	0.22490	450	0.436
		230	18.960	230	0.26150	475	0.444
		240	22.240	240	0.30250	500	0.452
		250	25.960	250	0.34800	525	0.460
		260	30.140	260	0.39850	550	0.467
		270	34.830	270	0.45420	575	0.475
		280	40.060	280	0.51530	600	0.482