

# ALLYL ALCOHOL

ALA

CAUTIONARY RESPONSE INFORMATION				4. FIRE HAZARDS	7. SHIPPING INFORMATION								
Common Synonyms 2-Propen-1-ol Vinyl carbinal	Watery liquid	Colorless	Sharp mustard odor	<p>4.1 Flash Point: 90°F O.C. 72°F C.C.</p> <p>4.2 Flammable Limits in Air: 2.5%-18%</p> <p>4.3 Fire Extinguishing Agents: Dry chemical, alcohol foam, carbon dioxide</p> <p>4.4 Fire Extinguishing Agents Not To Be Used: Water may be ineffective</p> <p>4.5 Special Hazards of Combustion Products: Toxic vapors are generated when heated</p> <p>4.6 Behavior in Fire: Vapor heavier than air and may travel a considerable distance to a source of ignition and flash back</p> <p>4.7 Auto Ignition Temperature: 829°F</p> <p>4.8 Electrical Hazards: I, D</p> <p>4.9 Burning Rate: 2.7 mm/min.</p> <p>4.10 Adiabatic Flame Temperature: Currently not available</p> <p>4.11 Stoichiometric Air to Fuel Ratio: Currently not available</p> <p>4.12 Flame Temperature: Currently not available</p> <p>4.13 Combustion Molar Ratio (Reactant to Product): Currently not available</p> <p>4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed</p>	<p>7.1 Grades of Purity: 98%</p> <p>7.2 Storage Temperature: Ambient</p> <p>7.3 Inert Atmosphere: No requirement</p> <p>7.4 Venting: Pressure-vacuum</p> <p>7.5 IMO Pollution Category: B</p> <p>7.6 Ship Type: 2</p> <p>7.7 Barge Hull Type: 1</p>								
Fire	FLAMMABLE. POISONOUS GASES MAY BE PRODUCED IN FIRE. Flashback along vapor trail may occur. Vapor may explode if ignited in an enclosed area. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Stop discharge if possible. Stay upwind and use water spray to "knock down" vapor. Isolate and remove discharged material. Notify local health and pollution control agencies. Protect water intakes.	CALL FOR MEDICAL AID.  VAPOR POISONOUS IF INHALED OR IF SKIN IS EXPOSED. Irritating to eyes, nose and throat. Move to fresh air. If in eyes, hold eyelids open and flush with plenty of water. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.  LIQUID POISONOUS IF SWALLOWED OR IF SKIN IS EXPOSED. Will burn 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.	5. CHEMICAL REACTIVITY	<p>5.1 Reactivity with Water: No reaction</p> <p>5.2 Reactivity with Common Materials: No reaction</p> <p>5.3 Stability During Transport: Stable at ordinary temperatures and pressures</p> <p>5.4 Neutralizing Agents for Acids and Caustics: Not pertinent</p> <p>5.5 Polymerization: Not pertinent</p> <p>5.6 Inhibitor of Polymerization: Not pertinent</p>	<p>8. HAZARD CLASSIFICATIONS</p> <p>8.1 49 CFR Category: Poison</p> <p>8.2 49 CFR Class: 6.1</p> <p>8.3 49 CFR Package Group: I</p> <p>8.4 Marine Pollutant: No</p> <p>8.5 NFPA Hazard Classification:</p> <table> <thead> <tr> <th>Category</th> <th>Classification</th> </tr> </thead> <tbody> <tr> <td>Health Hazard (Blue)</td> <td>4</td> </tr> <tr> <td>Flammability (Red)</td> <td>3</td> </tr> <tr> <td>Instability (Yellow)</td> <td>1</td> </tr> </tbody> </table> <p>8.6 EPA Reportable Quantity: 100</p> <p>8.7 EPA Pollution Category: B</p> <p>8.8 RCRA Waste Number: P005</p> <p>8.9 EPA FWCNA List: Yes</p>	Category	Classification	Health Hazard (Blue)	4	Flammability (Red)	3	Instability (Yellow)	1
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Exposure	Water Pollution	6. WATER POLLUTION	<p>6.1 Aquatic Toxicity: 10 ppm*/threshold/fresh water 2.5 ppm*bivalve larvae/lethal/salt water *Time period not specified.</p> <p>6.2 Waterfowl Toxicity: Currently not available</p> <p>6.3 Biological Oxygen Demand (BOD): 57%, 10 days; 20%, 5 days</p> <p>6.4 Food Chain Concentration Potential: None noted</p> <p>6.5 GESAMP Hazard Profile: Bioaccumulation: 0 Damage to living resources: 3 Human Oral hazard: 2 Human Contact hazard: II Reduction of amenities: XXX</p>	<p>9. PHYSICAL &amp; CHEMICAL PROPERTIES</p> <p>9.1 Physical State at 15°C and 1 atm: Liquid</p> <p>9.2 Molecular Weight: 58.08</p> <p>9.3 Boiling Point at 1 atm: 206°F = 96.9°C = 370.1°K</p> <p>9.4 Freezing Point: -200°F = -129°C = 144°K</p> <p>9.5 Critical Temperature: 521.4°F = 271.9°C = 545.1°K</p> <p>9.6 Critical Pressure: 840 psia = 57 atm = 5.8 MN/m²</p> <p>9.7 Specific Gravity: 0.852 at 20°C (liquid)</p> <p>9.8 Liquid Surface Tension: Not pertinent</p> <p>9.9 Liquid Water Interfacial Tension: Not pertinent</p> <p>9.10 Vapor (Gas) Specific Gravity: 2.0</p> <p>9.11 Ratio of Specific Heats of Vapor (Gas): 1.12</p> <p>9.12 Latent Heat of Vaporization: 295 Btu/lb = 164 cal/g = 6.87 X 10⁵ J/kg</p> <p>9.13 Heat of Combustion: -13,720 Btu/lb = -7620 cal/g = -319.0 X 10⁵ J/kg</p> <p>9.14 Heat of Decomposition: Not pertinent</p> <p>9.15 Heat of Solution: (est.) Negligible</p> <p>9.16 Heat of Polymerization: Not pertinent</p> <p>9.17 Heat of Fusion: Currently not available</p> <p>9.18 Limiting Value: Currently not available</p> <p>9.19 Reid Vapor Pressure: 1.0 psia</p>									
1. CORRECTIVE RESPONSE ACTIONS Dilute and disperse Stop discharge Do not burn	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: 15; Substituted allyl 2.2 Formula: CH <sub>2</sub> =CHCH <sub>2</sub> OH 2.3 IMO/UN Designation: 3.2/1098 2.4 DOT ID No.: 1098 2.5 CAS Registry No.: 107-18-6 2.6 NAERG Guide No.: 131 2.7 Standard Industrial Trade Classification: 51229	3. HEALTH HAZARDS		NOTES									
3.1 Personal Protective Equipment: Organic canister or air pack; rubber gloves, goggles; other protective equipment as required to prevent all body contact.		3.2 Symptoms Following Exposure: Vapors are quite irritating to eyes, nose, and throat. Eye irritation may be accompanied by complaints of photophobia and pain in the eyeball; pain may not begin until 6 hours after exposure. Liquid may cause first-and second-degree burns of the skin, with blister formation; underlying part will become swollen and painful, and local muscle spasms may occur.											
3.3 Treatment of Exposure: INHALATION: remove victim from contaminated area and administer oxygen; get medical attention immediately. SKIN: remove liquid with soap and water. EYES: flush with continuous stream of water for 15 min.		3.4 TLV-TWA: 2 ppm (skin).											
3.5 TLV-STEL: Not listed.		3.6 TLV-Ceiling: 4 ppm (skin).											
3.7 Toxicity by Ingestion: Grade 3; LD <sub>50</sub> = 50 to 500 mg/kg (mouse, rat)		3.8 Toxicity by Inhalation: Currently not available.											
3.9 Chronic Toxicity: Currently not available		3.10 Vapor (Gas) Irritancy Characteristics: Vapor is moderately irritating such that personnel will not usually tolerate moderate or high vapor concentrations.											
3.11 Liquid or Solid Characteristics: Causes smarting of the skin and first-degree burns on short exposure; may cause secondary burns on long exposure.		3.12 Odor Threshold: 0.78 ppm											
3.13 IDLH Value: 20 ppm.		3.14 OSHA PEL-TWA: 2 ppm.											
3.15 OSHA PEL-STEL: Not listed.		3.16 OSHA PEL-Ceiling: Not listed.											
3.17 EPA AEGL: Not listed		3.18 OSHA PEL-STEL: Not listed.											

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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	54.220	0	0.414				
40	54.090	10	0.425				
45	53.950	20	0.437				
50	53.810	30	0.448				
55	53.670	40	0.459				
60	53.530	50	0.470				
65	53.390	60	0.481				
70	53.250	70	0.492				
75	53.110	80	0.503				
80	52.980	90	0.514				
85	52.840	100	0.525				
90	52.700	110	0.537				
95	52.560	120	0.548				
100	52.420	130	0.559				
		140	0.570				
		150	0.581				
		160	0.592				
		170	0.603				

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
M	15	0.039		15	0.00045	0	0.298
I	20	0.049		20	0.00056	10	0.302
S	25	0.061		25	0.00069	20	0.307
C	30	0.076		30	0.00084	30	0.311
I	35	0.094		35	0.00103	40	0.315
B	40	0.115		40	0.00125	50	0.319
L	45	0.141		45	0.00152	60	0.323
E	50	0.172		50	0.00183	70	0.327
	55	0.209		55	0.00220	80	0.331
	60	0.253		60	0.00264	90	0.336
	65	0.305		65	0.00315	100	0.340
	70	0.367		70	0.00375	110	0.344
	75	0.439		75	0.00444	120	0.348
	80	0.524		80	0.00525	130	0.352
	85	0.623		85	0.00619	140	0.356
	90	0.739		90	0.00727	150	0.360
	95	0.873		95	0.00852	160	0.365
	100	1.029		100	0.00995	170	0.369