

# 2-ETHYLHEXYL ACRYLATE

EAI

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Acrylic acid, 2-ethylhexylester 2-Ethylhexyl-2-propenoate		Liquid	Colorless	Sharp odor
		Floats on water.		
<p>Keep people away. Avoid inhalation. Call fire department. Notify local health and pollution control agencies. Protect water intakes.</p>				
<b>Fire</b>	<p>Combustible. Containers may explode in fire. Combat fires from safe distance or protected location. Extinguish with dry chemicals or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.</p>			
<b>Exposure</b>	<p>Call for medical aid.</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 and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.</p>			
<b>Water Pollution</b>	<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 or nearby water intakes.</p>			

### 1. CORRECTIVE RESPONSE ACTIONS

Stop discharge  
Contain  
Collection Systems: Skim  
Chemical and Physical Treatment: Burn;  
Absorb  
Clean shore line  
Salvage waterfowl

### 2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: 14; Acrylate  
2.2 Formula:  
 $\text{CH}_2=\text{CHCOOCH}_2\text{CH}(\text{C}_6\text{H}_{13})\text{CH}_3$   
2.3 IMO/UN Designation: Not listed  
2.4 DOT ID No.: Not listed  
2.5 CAS Registry No.: 103-11-7  
2.6 NAERG Guide No.: Not listed  
2.7 Standard Industrial Trade Classification: 51379

### 3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Self-contained breathing apparatus; rubber gloves; vapor-proof chemical safety goggles; impervious apron and boots.
- 3.2 **Symptoms Following Exposure:** Inhalation of concentrated vapor causes drowsiness and convulsions. Liquid causes irritation of eyes and may irritate skin on prolonged exposure. Ingestion produces same symptoms as inhalation.
- 3.3 **Treatment of Exposure:** INHALATION: give artificial respiration and oxygen if necessary; call a physician. EYES: immediately flush with plenty of water for at least 15 min.; get medical attention. SKIN: immediately flush with plenty of water for at least 15 min. INGESTION: induce vomiting and consult a physician.
- 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; oral rat LD<sub>50</sub> = 1,540 mg/kg  
3.8 **Toxicity by Inhalation:** Currently not available.  
3.9 **Chronic Toxicity:** Currently not available
- 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors are nonirritating to eyes and throat.  
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:** 195°F O.C.  
4.2 **Flammable Limits in Air:** 0.8%-6.4%  
4.3 **Fire Extinguishing Agents:** Dry chemical or carbon dioxide  
4.4 **Fire Extinguishing Agents Not to Be Used:** Water or foam may cause frothing.  
4.5 **Special Hazards of Combustion Products:** Not pertinent  
4.6 **Behavior in Fire:** Heat can result in a severe polymerization with rapid release of energy. Sealed containers may rupture explosively if hot.  
4.7 **Auto Ignition Temperature:** 496°F  
4.8 **Electrical Hazards:** Currently not available  
4.9 **Burning Rate:** 4.6 mm/min.  
4.10 **Adiabatic Flame Temperature:** Currently not available  
4.11 **Stoichiometric Air to Fuel Ratio:** 71.4 (calc.)  
4.12 **Flame Temperature:** Currently not available  
4.13 **Combustion Molar Ratio (Reactant to Product):** 21.0 (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:** Will polymerize in the absence of inhibitor and when heated.  
5.6 **Inhibitor of Polymerization:** Monomethyl ether of hydroquinone, 13-120 ppm. Hydroquinone, 90-120 ppm.

### 6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:**  
72 ppm/24 hr/ brine shrimp/TL<sub>50</sub>  
6.2 **Waterfowl Toxicity:** Currently not available  
6.3 **Biological Oxygen Demand (BOD):** 9% of theoretical in 5 days, fresh water, acclimated seed  
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: 1  
Reduction of amenities: X

### 7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99+%  
7.2 **Storage Temperature:** <100°F (38°C)  
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:** 3

### 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)..... | 2              |
| Flammability (Red).....   | 2              |
| Instability (Yellow)..... | 1              |
- 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:** 184.2  
9.3 **Boiling Point at 1 atm:** (polymerizes) 471°F = 214°C = 487°K  
9.4 **Freezing Point:** -130°F = -90°C = 183°K  
9.5 **Critical Temperature:** Not pertinent  
9.6 **Critical Pressure:** Not pertinent  
9.7 **Specific Gravity:** 0.885 at 20°C (liquid)  
9.8 **Liquid Surface Tension:** (est.) 26 dynes/cm = 0.026 N/m at 20°C  
9.9 **Liquid Water Interfacial Tension:** (est.) 30 dynes/cm = 0.030 N/m at 20°C  
9.10 **Vapor (Gas) Specific Gravity:** Not pertinent  
9.11 **Ratio of Specific Heats of Vapor (Gas):** Not pertinent  
9.12 **Latent Heat of Vaporization:** 110 Btu/lb = 61 cal/g = 2.6 X 10<sup>5</sup> J/kg  
9.13 **Heat of Combustion:** -15,500 Btu/lb = -8,600 cal/g = 360 X 10<sup>5</sup> J/kg  
9.14 **Heat of Decomposition:** Not pertinent  
9.15 **Heat of Solution:** Not pertinent  
9.16 **Heat of Polymerization:** -142 Btu/lb = -79 cal/g = -3.3 X 10<sup>5</sup> J/kg  
9.17 **Heat of Fusion:** Currently not available  
9.18 **Limiting Value:** Currently not available  
9.19 **Reid Vapor Pressure:** 0.01 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
15	56.900	35	0.402	42	1.048	15	3.699
20	56.740	40	0.404	44	1.048	20	3.434
25	56.590	45	0.407	46	1.048	25	3.192
30	56.430	50	0.410	48	1.048	30	2.972
35	56.270	55	0.413	50	1.048	35	2.771
40	56.120	60	0.416	52	1.048	40	2.587
45	55.960	65	0.418	54	1.048	45	2.419
50	55.810	70	0.421	56	1.048	50	2.264
55	55.650	75	0.424	58	1.048	55	2.122
60	55.490	80	0.427	60	1.048	60	1.992
65	55.340	85	0.429	62	1.048	65	1.872
70	55.180	90	0.432	64	1.048	70	1.761
75	55.030	95	0.435	66	1.048	75	1.659
80	54.870	100	0.438	68	1.048	80	1.564
85	54.710	105	0.441	70	1.048	85	1.476
90	54.560	110	0.443	72	1.048	90	1.395
95	54.400	115	0.446	74	1.048	95	1.319
100	54.250	120	0.449	76	1.048	100	1.249
105	54.090					105	1.184
110	53.930					110	1.123
115	53.780					115	1.066
120	53.620					120	1.013

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	0.340	100	0.011	100	0.00035		N
		120	0.022	120	0.00067		O
		140	0.043	140	0.00122		T
		160	0.077	160	0.00214		
		180	0.135	180	0.00363		P
		200	0.229	200	0.00595		E
		220	0.375	220	0.00947		R
		240	0.598	240	0.01466		T
		260	0.928	260	0.02213		I
		280	1.408	280	0.03266		N
		300	2.088	300	0.04717		E
		320	3.036	320	0.06682		N
		340	4.332	340	0.09297		T
		360	6.075	360	0.12720		
		380	8.384	380	0.17130		
		400	11.400	400	0.22750		
		420	15.280	420	0.29800		
		440	20.220	440	0.38560		
		460	26.420	460	0.49300		