2-HYDROXYETHYL ACRYLATE

HAI

CAUTIONARY RESPONSE INFORMATION

Common Synonyms			
HEA beta-Hydroxyethyl acrylate 2-Hydroxyethyl 2-propenoate	Liquid Mixes with water.	Colorless	Sweet pleasant odor

Keep people away. Avoid contact with liquid and vapor.
Wear rubber overclothing (including gloves).
Call fire department.
Notify local health and pollution control agencies.
Protect water intakes.

Fire	Combustible. Containers may explode in fire. Extinguish with water, dry chemicals, alcohol foam, or carbon dioxide. Cool exposed containers with water.
Exposure	Call for medical aid. LIQUID Will burn 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. DO NOT INDUCE VOMITING.
Water Pollution	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.

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
Stop discharge

2. CHEMICAL DESIGNATIONS

2.1 CG Compatibility Group: Not listed.
2.2 Formula: $CH_2 = CHCOOCH_2CH_2OH$
2.3 IMO/UN Designation: Not listed
2.4 DOT ID No.: Not listed
2.5 CAS Registry No.: 818-61-1
2.6 NAERG Guide No.: Not listed
2.7 Standard Industrial Trade Classification: 51379

3. HEALTH HAZARDS

3.1 Personal Protective Equipment: Goggles or face shield; rubber gloves.
3.2 Symptoms Following Exposure: Inhalation causes irritation of nose and throat. Contact with liquid irritates eyes and skin.
3.3 Treatment of Exposure: INHALATION: remove victim from exposure; support respiration; call physician if needed. EYES: wash with large amounts of water for 15 min.; call physician. SKIN: flush with water.
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 LD_{50} = 1,070 mg/kg (rat)
3.8 Toxicity by Inhalation: Currently not available.
3.9 Chronic Toxicity: Currently not available
3.10 Vapor (Gas) Irritant Characteristics: Vapors cause severe irritation of eyes and throat and can cause eye and lung injury. They cannot be tolerated even at low concentrations.
3.11 Liquid or Solid Characteristics: Severe skin irritant. Causes second- and third-degree burns on short contact and is very injurious to the eyes.
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: 220°F O.C.
4.2 Flammable Limits in Air: Currently not available
4.3 Fire Extinguishing Agents: Water, dry chemical, alcohol foam, carbon dioxide
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent
4.5 Special Hazards of Combustion Products: Not pertinent
4.6 Behavior in Fire: Containers may explode
4.7 Auto Ignition Temperature: Currently not available
4.8 Electrical Hazards: Currently not available
4.9 Burning Rate: 2.0 mm/min.
4.10 Adiabatic Flame Temperature: Currently not available
4.11 Stoichometric Air to Fuel Ratio: 26.2 (calc.)
4.12 Flame Temperature: Currently not available
4.13 Combustion Molar Ratio (Reactant to Product): 9.0 (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: In the absence of inhibitor, polymerization will occur, especially when heated.
5.6 Inhibitor of Polymerization: Monomethyl ether of hydroquinone, 400 ppm

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: Not listed

7. SHIPPING INFORMATION

7.1 Grades of Purity: Commercial
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: 2
7.7 Barge Hull Type: 1

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: 116.1
9.3 Boiling Point at 1 atm: >346°F = >210°C = >583°K
9.4 Freezing Point: –76°F = –60°C = 213°K
9.5 Critical Temperature: Not pertinent
9.6 Critical Pressure: Not pertinent
9.7 Specific Gravity: 1.10 at 25°C (liquid)
9.8 Liquid Surface Tension: (est.) 28 dynes/cm = 0.028 N/m at 20°C
9.9 Liquid Water Interfacial Tension: Not pertinent
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: Not pertinent
9.13 Heat of Combustion: (est.) –10,800 Btu/lb = –6,000 cal/g = -250×10^5 J/kg
9.14 Heat of Decomposition: Not pertinent
9.15 Heat of Solution: Not pertinent
9.16 Heat of Polymerization: (est.) –218 Btu/lb = –121 cal/g = -5.06×10^5 J/kg
9.17 Heat of Fusion: Currently not available
9.18 Limiting Value: Currently not available
9.19 Reid Vapor Pressure: Low

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
34	70.160	34	0.471	42	1.048	60	7.064
36	70.089	36	0.472	44	1.048	61	6.879
38	70.020	38	0.473	46	1.048	62	6.699
40	69.950	40	0.474	48	1.048	63	6.524
42	69.879	42	0.476	50	1.048	64	6.355
44	69.809	44	0.477	52	1.048	65	6.190
46	69.740	46	0.478	54	1.048	66	6.031
48	69.669	48	0.479	56	1.048	67	5.876
50	69.599	50	0.480	58	1.048	68	5.726
52	69.530	52	0.481	60	1.048	69	5.580
54	69.459	54	0.482	62	1.048	70	5.438
56	69.389	56	0.483	64	1.048	71	5.301
58	69.320	58	0.484	66	1.048	72	5.167
60	69.250	60	0.486	68	1.048	73	5.037
62	69.179	62	0.487	70	1.048	74	4.911
64	69.120	64	0.488	72	1.048	75	4.789
66	69.049	66	0.489	74	1.048	76	4.670
68	68.980	68	0.490	76	1.048	77	4.555
70	68.910	70	0.491				
72	68.839	72	0.492				
74	68.770	74	0.493				
76	68.700	76	0.494				
78	68.629	78	0.496				
80	68.559	80	0.497				
82	68.490	82	0.498				
84	68.419	84	0.499				

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	177	0.090	177	0.00153		N
	I	178	0.092	178	0.00156		O
	S	179	0.094	179	0.00158		T
	C	180	0.095	180	0.00161		
	I	181	0.097	181	0.00164		P
	B	182	0.099	182	0.00166		E
	L	183	0.100	183	0.00169		R
	E	184	0.102	184	0.00172		T
		185	0.104	185	0.00174		I
		186	0.106	186	0.00177		N
		187	0.108	187	0.00180		E
		188	0.110	188	0.00183		N
		189	0.111	189	0.00186		T
		190	0.113	190	0.00189		
		191	0.115	191	0.00192		
		192	0.117	192	0.00195		
		193	0.119	193	0.00198		
		194	0.121	194	0.00201		