

ALPHA-METHYLSTYRENE

MSR

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Isopropenylbenzene 1-Methyl-1-phenylethylene Phenylpropylene		Liquid Colorless Floats on water.
Keep people away. Avoid contact with liquid. Call fire department. Notify local health and pollution control agencies.		
Fire	Combustible. Extinguish with dry chemicals, foam or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.	
Exposure	CALL FOR MEDICAL AID. LIQUID Will burn skin and eyes. If swallowed will cause nausea and vomiting. 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. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm. DO NOT INDUCE VOMITING.	
Water Pollution	HARMFUL TO AQUATIC LIFE IN VERY LOW CONCENTRATIONS. 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: Burn; Absorb Clean shore line	2. CHEMICAL DESIGNATIONS 2.1 CG Compatibility Group: 30; Olefin 2.2 Formula: C ₉ H ₈ C(CH ₃)=CH ₂ 2.3 IMO/UN Designation: Not listed 2.4 DOT ID No.: Not listed 2.5 CAS Registry No.: 98-83-9 2.6 NAERG Guide No.: Not listed 2.7 Standard Industrial Trade Classification: 51129
3. HEALTH HAZARDS 3.1 Personal Protective Equipment: Neoprene gloves; splashproof goggles or face shield 3.2 Symptoms Following Exposure: Inhalation causes irritation of respiratory tract, headache, dizziness, light-headedness, and breathlessness. Ingestion causes irritation of mouth and stomach. Contact with liquid irritates eyes. Prolonged skin contact can cause severe rashes, swelling, and blistering. 3.3 Treatment of Exposure: INHALATION: remove victim to fresh air; if he is not breathing, give artificial respiration; contact a physician; keep victim quiet and warm. INGESTION: do NOT induce vomiting; call physician. EYES: flush with water for at least 15 min.; get medical attention. SKIN: wash area with soap and water. 3.4 TLV-TWA: 50 ppm 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: 100 ppm 3.7 Toxicity by Ingestion: Grade 2; LD ₅₀ = 0.5-5 g/kg 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Currently not available 3.10 Vapor (Gas) Irritant Characteristics: Currently not available 3.11 Liquid or Solid Characteristics: Currently not available 3.12 Odor Threshold: <10 ppm 3.13 IDLH Value: 700 ppm 3.14 OSHA PEL-TWA: Not listed. 3.15 OSHA PEL-STEL: Not listed. 3.16 OSHA PEL-Ceiling: 100 ppm 3.17 EPA AEGL: Not listed	

4. FIRE HAZARDS

- 4.1 Flash Point: 137°F C.C.
- 4.2 Flammable Limits in Air: 1.9%-6.1%
- 4.3 Fire Extinguishing Agents: Dry chemical, foam, carbon dioxide
- 4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
- 4.5 Special Hazards of Combustion Products: Currently not available
- 4.6 Behavior in Fire: Currently not available
- 4.7 Auto Ignition Temperature: 1,066°F
- 4.8 Electrical Hazards: Currently not available
- 4.9 Burning Rate: Currently not available
- 4.10 Adiabatic Flame Temperature: Currently not available
- 4.11 Stoichiometric Air to Fuel Ratio: 54.7 (calc.)
- 4.12 Flame Temperature: Currently not available
- 4.13 Combustion Molar Ratio (Reactant to Product): 14.0 (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: May attack some forms of plastics.
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 5.5 Polymerization: Hazardous polymerization unlikely to occur except when in contact with alkali metals or metallo-organic compounds.
- 5.6 Inhibitor of Polymerization: 10-20 ppm tert-butylcatechol

6. WATER POLLUTION

- 6.1 Aquatic Toxicity: 10 ppm/96 hr/fathead minnow/LC₅₀
- 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: A
- 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: Yes
- 8.5 NFPA Hazard Classification:

Category	Classification
Health Hazard (Blue).....	1
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: 118.17
- 9.3 Boiling Point at 1 atm: 329°F = 165°C = 438°K
- 9.4 Freezing Point: -9.8°F = -23.2°C = 250.0°K
- 9.5 Critical Temperature: 719.1°F = 381.7°C = 654.9°K
- 9.6 Critical Pressure: 494 psia = 33.6 atm = 3.41 MN/m²
- 9.7 Specific Gravity: 0.91 at 20°C (liquid)
- 9.8 Liquid Surface Tension: 33.88 dynes/cm = 0.03388 N/m at 20°C
- 9.9 Liquid Water Interfacial Tension: Currently not available
- 9.10 Vapor (Gas) Specific Gravity: 4.08
- 9.11 Ratio of Specific Heats of Vapor (Gas): 1.060 at 27°C
- 9.12 Latent Heat of Vaporization: 140.4 Btu/lb = 78.0 cal/g = 3.26 X 10⁵ J/kg
- 9.13 Heat of Combustion: -17,690 Btu/lb = -9,830 cal/g = -411 X 10⁶ J/kg
- 9.14 Heat of Decomposition: Not pertinent
- 9.15 Heat of Solution: Not pertinent
- 9.16 Heat of Polymerization: Currently not available
- 9.17 Heat of Fusion: Currently not available
- 9.18 Limiting Value: Currently not available
- 9.19 Reid Vapor Pressure: 0.23 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
34	57.870		N		N	68	0.940
36	57.800		O		O		
38	57.740		T		T		
40	57.680						
42	57.620		P		P		
44	57.550		E		E		
46	57.490		R		R		
48	57.430		T		T		
50	57.370		I		I		
52	57.300		N		N		
54	57.240		E		E		
56	57.180		N		N		
58	57.120		T		T		
60	57.050						
62	56.990						
64	56.930						
66	56.870						
68	56.800						
70	56.740						
72	56.680						
74	56.620						
76	56.550						
78	56.490						
80	56.430						
82	56.370						
84	56.310						

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
77	0.060	70	0.039	70	0.00082		N
		80	0.055	80	0.00112		O
		90	0.076	90	0.00152		T
		100	0.103	100	0.00203		
		110	0.139	110	0.00269		P
		120	0.186	120	0.00353		E
		130	0.246	130	0.00459		R
		140	0.322	140	0.00592		T
		150	0.418	150	0.00756		I
		160	0.539	160	0.00957		N
		170	0.688	170	0.01203		E
		180	0.872	180	0.01500		N
		190	1.097	190	0.01858		T
		200	1.370	200	0.02287		
		210	1.701	210	0.02795		
		220	2.097	220	0.03397		
		230	2.570	230	0.04103		
		240	3.132	240	0.04928		
		250	3.796	250	0.05868		
		260	4.576	260	0.06999		
		270	5.487	270	0.08278		
		280	6.548	280	0.09745		
		290	7.777	290	0.11420		
		300	9.195	300	0.13320		
		310	10.820	310	0.15480		
		320	12.690	320	0.17920		