

METHACRYLIC ACID

MAD

CAUTIONARY RESPONSE INFORMATION			
Common Synonyms 2-Methylacrylic acid alpha-Methylacrylic acid 2-Methyl propenoic acid Propanoic acid, 2-Methylene	Liquid	Colorless	Sharp, acrid, repulsive odor
Soluble in water. Freezing point is 61°F.			
Keep people away. Avoid contact with liquid and vapors. Wear goggles, self-contained breathing apparatus, rubber clothing and gloves. Call fire department. Stay upwind and use water to knock down vapor. Notify local health and pollution control agencies.	Fire	Poisonous gases may be produced in fire or when heated. Containers may explode if heated. Vapor may explode if ignited in an enclosed area. Extinguish with water, dry chemical, alcohol foam or carbon dioxide. Wear goggles, self-contained breathing apparatus, and rubber overclothing. Combat fires from safe distance or protected location. Use water to cool fire-exposed containers.	Combustible
Exposure VAPOR Irritating to skin, eyes and respiratory tract. 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 Severe irritant. Corrosive. Harmful if swallowed. Remove contaminated clothing and shoes. Flush affected areas with 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	2. CHEMICAL DESIGNATIONS	3. HEALTH HAZARDS	4. FIRE HAZARDS	5. CHEMICAL REACTIVITY	6. WATER POLLUTION	7. SHIPPING INFORMATION
Dilute and disperse Stop discharge Chemical and Physical Treatment: Neutralize	2.1 CG Compatibility Group: 4; Organic acid 2.2 Formula: $\text{CH}_2=\text{C}(\text{CH}_3)\text{COOH}$ 2.3 IMO/UN Designation: 8/2531 2.4 DOT ID No.: 2531 2.5 CAS Registry No.: Currently not available 2.6 NAERG Guide No.: 153P 2.7 Standard Industrial Trade Classification: 51373	3.1 Personal Protective Equipment: Wear chemical respirator, goggles, rubber overclothing, and gloves. 3.2 Symptoms Following Exposure: INHALATION: Severe irritation to respiratory tract. EYES: Short contact can cause severe damage. SKIN: Causes severe irritation and burns. Ingestion: High hazard - may cause death or permanent injury on short exposure to small quantities. OTHER: May affect blood pressure temporarily. 3.3 Treatment of Exposure: INHALATION: Remove to fresh air. If symptoms are apparent, consult physician promptly. EYES: Flush eyes with large quantities of water for 15 min. and consult physician promptly. SKIN: Flush immediately with plenty of water while removing contaminated clothing. For burns, get medical attention. INGESTION: Give milk or water to drink, if victim is conscious. DO NOT INDUCE VOMITING. Consult a physician. 3.4 TLV-TWA: 20 ppm. 3.5 TLV-STEL: Not listed. 3.6 TLV-Ceiling: Not listed. 3.7 Toxicity by Ingestion: Grade 4; LD ₅₀ below 50 mg/kg (rats) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Prolonged exposure may damage lungs and kidneys. 3.10 Vapor (Gas) Irritant Characteristics: Vapors are moderately irritating such that personnel will not usually tolerate moderate or high concentrations. 3.11 Liquid or Solid Characteristics: Fairly severe skin irritant. May cause pain and second degree burns after a few minutes contact. 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	4.1 Flash Point: 170°F O.C. 152°F C.C. 4.2 Flammable Limits in Air: 2.4% L.F.L.(calculated) 4.3 Fire Extinguishing Agents: Alcohol foam, carbon dioxide, dry chemical, water spray. 4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent 4.5 Special Hazards of Combustion Products: Vapor forms explosive mixtures with air. Thermal decomposition produces carbon monoxide and carbon dioxide. 4.6 Behavior in Fire: Vapors form explosive mixtures with air. Sealed containers may rupture explosively at elevated temperatures (polymerization). 4.7 Auto Ignition Temperature: 752°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: 21.4 (calc.) 4.12 Flame Temperature: Currently not available 4.13 Combustion Molar Ratio (Reactant to Product): 7.0 (calc.) 4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed	5.1 Reactivity with Water: No reaction 5.2 Reactivity with Common Materials: Currently not available 5.3 Stability During Transport: Stable if stored away from heat. 5.4 Neutralizing Agents for Acids and Caustics: Sodium carbonate, dilute caustic solutions. 5.5 Polymerization: Heat, strong oxidizers, alkalies, or hydrogen chloride may cause rapid polymerization and release high energy rapidly; may cause explosion under confinement. 5.6 Inhibitor of Polymerization: 0.025% p-methoxyphenol; 1,000 ppm hydroquinone + 250 ppm hydroquinone monomethyl ether.	6.1 Aquatic Toxicity: Currently not available 6.2 Waterfowl Toxicity: Currently not available 6.3 Biological Oxygen Demand (BOD): 0.89% in 5 days. 6.4 Food Chain Concentration Potential: Currently not available 6.5 GESAMP Hazard Profile: Bioaccumulation: 0 Damage to living resources: (1) Human Oral hazard: 1 Human Contact hazard: II Reduction of amenities: XX	7.1 Grades of Purity: 99% plus; 40% aqueous solution; crude monomer (85%); glacial (98% plus). 7.2 Storage Temperature: Ambient 7.3 Inert Atmosphere: Currently not available 7.4 Venting: Currently not available 7.5 IMO Pollution Category: D 7.6 Ship Type: 3 7.7 Barge Hull Type: Currently not available

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
68	63.310		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E

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
	S O L U B L E		N O T P E R T I N E T		C U R R E N T L Y N O T A V A I L A B L E		C U R R E N T L Y N O T A V A I L A B L E