

2-METHYLPYRIDINE

MPR

CAUTIONARY RESPONSE INFORMATION

Common Synonyms alpha-Methylpyridine Picoline 2-Picoline alpha-Picoline	Liquid Colorless Strong, unpleasant Floats on water. Poisonous, flammable vapor is produced.
<p>Keep people away. AVOID CONTACT WITH LIQUID AND VAPOR. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). Shut off ignition sources and call fire department. Stay upwind and use water spray to "knock down" vapor. Notify local health and pollution control agencies.</p>	
Fire	<p>FLAMMABLE. Poisonous gases are produced when heated. Flashback along vapor trail may occur. Wear goggles and self-contained breathing apparatus. Extinguish with dry chemical, alcohol foam, or carbon dioxide. Water may be ineffective on fire. Cool exposed containers with water.</p>
Exposure	<p>CALL FOR MEDICAL AID.</p> <p>VAPOR Harmful if inhaled or if skin is exposed. Irritating to eyes, nose, and throat. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen.</p> <p>LIQUID Harmful 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 UNCONSCIOUS, 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>
Water Pollution	<p>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.</p>

1. CORRECTIVE RESPONSE ACTIONS

Dilute and disperse
 Stop discharge
 Contain
 Collection Systems: Pump; Dredge

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.
 2.2 **Formula:** C₅H₇NCH₃
 2.3 **IMO/UN Designation:** Not listed
 2.4 **DOT ID No.:** 2313
 2.5 **CAS Registry No.:** Currently not available
 2.6 **NAERG Guide No.:** 130
 2.7 **Standard Industrial Trade Classification:** 51577

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Wear goggles, rubber gloves, self-contained breathing apparatus and protective overclothing.
- 3.2 **Symptoms Following Exposure:** INHALATION, INGESTION OR SKIN ABSORPTION: Narcosis, headache, nausea, giddiness, vomiting. EYES: Severe irritation. SKIN: Causes burns. INGESTION: Irritation and gastric upset.
- 3.3 **Treatment of Exposure:** Get medical aid. INHALATION: Remove from exposure. Give artificial respiration and oxygen as needed. EYES: Flush with running water for at least 15 min. SKIN: Remove contaminated clothing. Wash with soap and water. INGESTION: Induce vomiting, follow with gastric lavage.
- 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; LD₅₀ = -5.5 g/kg.
 3.8 **Toxicity by Inhalation:** Currently not available.
- 3.9 **Chronic Toxicity:** Chronic exposure may cause occasional vomiting and diarrhea; weight loss and anemia; ocular and facial paralysis. Kidney and liver injury have been reported.
- 3.10 **Vapor (Gas) Irritant Characteristics:** Vapors cause moderate irritation such that personnel will find high concentrations unpleasant. The effect is temporary.
- 3.11 **Liquid or Solid Characteristics:** Causes smarting of the skin and first-degree burns on short exposure; may cause second-degree burns on long exposure.
- 3.12 **Odor Threshold:** 0.046 ppm-100% recognition in air. 0.023 ppm-50% recognition in air. 0.5-1.0 ppm can be detected in water.
- 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:** 95°F O.C.
 : 79°F C.C.
- 4.2 **Flammable Limits in Air:** Currently not available
- 4.3 **Fire Extinguishing Agents:** Carbon dioxide, dry chemical or "alcohol" foam.
- 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
- 4.5 **Special Hazards of Combustion Products:** When heated to decomposition, emits toxic fumes of cyanide.
- 4.6 **Behavior in Fire:** Heat may cause pressure buildup in closed containers. Use water to keep container cool.
- 4.7 **Auto Ignition Temperature:** 1000°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:** 41.6 (calc.)
- 4.12 **Flame Temperature:** Currently not available
- 4.13 **Combustion Molar Ratio (Reactant to Product):** 10.5 (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:** Can react with oxidizing materials.
- 5.3 **Stability During Transport:** Stable
- 5.4 **Neutralizing Agents for Acids and Caustics:** Flush with water
- 5.5 **Polymerization:** Not pertinent
- 5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** Currently not available
- 6.2 **Waterfowl Toxicity:** Currently not available
- 6.3 **Biological Oxygen Demand (BOD):** Theoretical oxygen demands = 2.75.
- 6.4 **Food Chain Concentration Potential:** None
- 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. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** alpha-Picoline 98%, Water 0.2% max.
- 7.2 **Storage Temperature:** Ambient
- 7.3 **Inert Atmosphere:** No requirement
- 7.4 **Venting:** Pressure-vacuum
- 7.5 **IMO Pollution Category:** D
- 7.6 **Ship Type:** 2
- 7.7 **Barge Hull Type:** 3

8. HAZARD CLASSIFICATIONS

- 8.1 **49 CFR Category:** Flammable liquid
- 8.2 **49 CFR Class:** 3
- 8.3 **49 CFR Package Group:** III
- 8.4 **Marine Pollutant:** No
- 8.5 **NFPA Hazard Classification:**
- | Category | Classification |
|---------------------------|----------------|
| Health Hazard (Blue)..... | 2 |
| Flammability (Red)..... | 2 |
| Instability (Yellow)..... | 0 |
- 8.6 **EPA Reportable Quantity:** 5000 pounds
- 8.7 **EPA Pollution Category:** D
- 8.8 **RCRA Waste Number:** U191
- 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:** 93.13.
- 9.3 **Boiling Point at 1 atm:** 263.8°F = 128.8°C = 401.95°K.
- 9.4 **Freezing Point:** -88.24°F = -66.8°C = 206.35°K.
- 9.5 **Critical Temperature:** 658.4°F = 348°C = 621.2°K.
- 9.6 **Critical Pressure:** (est.) 614.3 psia = 41.8 atm = 4.23 MN/m².
- 9.7 **Specific Gravity:** 0.944 at 20°C.
- 9.8 **Liquid Surface Tension:** (est.) 33.2 dynes/cm = 0.0332 N/m at 20°C.
- 9.9 **Liquid Water Interfacial Tension:** Not pertinent
- 9.10 **Vapor (Gas) Specific Gravity:** 3.2.
- 9.11 **Ratio of Specific Heats of Vapor (Gas):** >1, approx. 1.123.
- 9.12 **Latent Heat of Vaporization:** (est. at boiling point) 160.4 Btu/lb = 98.1 cal/g = 3.7 X 10⁵ J/kg.
- 9.13 **Heat of Combustion:** Net at 25°C. -15089 Btu/lb = -8383 cal/g = -350.7 X 10⁵ J/kg.
- 9.14 **Heat of Decomposition:** Not pertinent
- 9.15 **Heat of Solution:** Currently not available
- 9.16 **Heat of Polymerization:** Not pertinent
- 9.17 **Heat of Fusion:** Currently not available
- 9.18 **Limiting Value:** Currently not available
- 9.19 **Reid Vapor Pressure:** 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
59	59.306	80	0.434		C		C
60	59.266	90	0.434		U		U
61	59.227	100	0.434		R		R
62	59.187	110	0.434		R		R
63	59.148	120	0.434		E		E
64	59.108	130	0.434		N		N
65	59.069	140	0.434		T		T
66	59.029	150	0.434		L		L
67	58.990	160	0.434		Y		Y
68	58.950	170	0.434		N		N
		180	0.434		O		O
		190	0.434		T		T
		200	0.434		A		A
		210	0.434		V		V
		220	0.434		A		A
		230	0.434		I		I
		240	0.434		L		
		250	0.434		A		A
					B		B
					L		L
					L		L
					E		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
	M	20	-1.203	60	0.00056	1350	0.623
	I	40	-0.227	70	0.00104	1375	0.626
	S	60	0.750	80	0.00176	1400	0.630
	C	80	0.274	90	0.00282	1425	0.634
	I	100	1.297	100	0.00429	1450	0.637
	B	120	2.321	110	0.00626	1475	0.641
	L	140	3.344	120	0.00886	1500	0.644
	E	160	4.368	130	0.01218	1525	0.648
		180	5.391	140	0.01635	1550	0.651
		200	6.415	150	0.02151	1575	0.654
		220	7.438	160	0.02781	1600	0.658
		240	8.462	170	0.03539	1625	0.661
		260	9.485	180	0.04443	1650	0.664
				190	0.05509	1675	0.667
				200	0.06756	1700	0.671
				210	0.08203	1725	0.674
				220	0.09870	1750	0.677
				230	0.11779	1775	0.680
				240	0.13952	1800	0.683
				250	0.16412	1825	0.686
				260	0.19183	1850	0.689
						1875	0.692
						1900	0.695
						1925	0.698
						1950	0.701
						1975	0.704