

4-METHYLPYRIDINE

MPF

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 4-Picoline gamma-Picoline p-Picoline UN 2313 (DOT)	Liquid Water soluble liquid.	Colorless to brown	Obnoxious, sweetish odor
<p>Keep people away. AVOID CONTACT WITH LIQUID AND VAPOR. Wear chemical protective suit with self-contained breathing apparatus. 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>COMBUSTIBLE. Vapor may explode if ignited in an enclosed area. Wear chemical protective suit with self-contained breathing apparatus. Extinguish with dry chemical, alcohol foam, or CO₂. Water may be ineffective on fire. Cool exposed containers with water.</p>		
Exposure	<p>CALL FOR MEDICAL AID</p> <p>VAPOR Poisonous 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 Poisonous 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.</p>		
Water Pollution	<p>Effect of low concentration 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: 9; Aromatic amines 2.2 Formula: C ₅ H ₇ N 2.3 IMO/UN Designation: 3.3/2313 2.4 DOT ID No.: 2313 2.5 CAS Registry No.: 108-89-4 2.6 NAERG Guide No.: 130 2.7 Standard Industrial Trade Classification: 51577
3. HEALTH HAZARDS	
<p>3.1 Personal Protective Equipment: Wear self-contained breathing apparatus, rubber boots, heavy rubber gloves, and protective clothing.</p> <p>3.2 Symptoms Following Exposure: Harmful if swallowed, inhaled or absorbed through the skin. Causes severe irritation. High concentrations are extremely destructive to tissues of the mucous membranes and upper respiratory tract, eyes and skin. Symptoms of exposure may include burning sensation, coughing, wheezing, laryngitis, shortness of breath, headache, nausea, vomiting and gastrointestinal disturbances.</p> <p>3.3 Treatment of Exposure: INHALATION: CALL FOR MEDICAL AID. Remove victim to fresh air. If not breathing, give artificial respiration. If breathing is difficult, give oxygen. EYES: Flush with copious amounts of water for at least 15 minutes. Assure adequate flushing of the eyes by separating eyelids with fingers. SKIN: Flush with copious amounts of water for at least 15 minutes while removing contaminated clothing and shoes.</p> <p>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 = 1.29 g/kg (rat) 3.8 Toxicity by Inhalation: Currently not available. 3.9 Chronic Toxicity: Causes damage to the liver and kidney. 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 exposure 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</p>	

4. FIRE HAZARDS

- 4.1 **Flash Point:** 134°F C.C.
 4.2 **Flammable Limits in Air:** Currently not available
 4.3 **Fire Extinguishing Agents:** Carbon dioxide, dry chemical, alcohol foam.
 4.4 **Fire Extinguishing Agents Not to Be Used:** Water may be ineffective.
 4.5 **Special Hazards of Combustion Products:** Emits toxic fumes under fire conditions. Forms explosive mixture in air.
 4.6 **Behavior in Fire:** Currently not available
 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:** No reaction.
 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):** Currently not available
 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. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** 99%
 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:** 2
 7.7 **Barge Hull Type:** Currently not available

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:** 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:** 93.13
 9.3 **Boiling Point at 1 atm:** 293°F = 145°C = 418.2°K
 9.4 **Freezing Point:** 36.3°F = 2.4°C = 275.6°K
 9.5 **Critical Temperature:** Currently not available
 9.6 **Critical Pressure:** Currently not available
 9.7 **Specific Gravity:** 0.957
 9.8 **Liquid Surface Tension:** Currently not available
 9.9 **Liquid Water Interfacial Tension:** Currently not available
 9.10 **Vapor (Gas) Specific Gravity:** 3.2
 9.11 **Ratio of Specific Heats of Vapor (Gas):** Currently not available
 9.12 **Latent Heat of Vaporization:** Currently not available
 9.13 **Heat of Combustion:** Currently not available
 9.14 **Heat of Decomposition:** Currently not available
 9.15 **Heat of Solution:** Currently not available
 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:** 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
	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		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	68	0.077		C U R R E N T L Y N O T A V A I L A B L E	0 25 50 75 100 125 150 175 200 225 250 275 300 325 350 375 400 425 450 475 500 525 550 575 600	0.233 0.246 0.259 0.271 0.283 0.295 0.307 0.319 0.330 0.341 0.352 0.363 0.374 0.384 0.394 0.404 0.414 0.424 0.433 0.443 0.452 0.461 0.469 0.478 0.486