

1-METHYLPYRROLIDONE

MPY

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 1-Methyl-2-pyrrolidinone N-Methylpyrrolidinone N-Methylpyrrolidone N-Methyl-alpha-pyrrolidone		Liquid	White	Mild Fishy odor
May float or sink in water.				
<p>Keep people away. Avoid contact with liquid. Call fire department. Notify local health and pollution control agencies.</p>				
Fire	Combustible. POISONOUS GASES MAY BE PRODUCED WHEN HEATED. Wear goggles and self-contained breathing apparatus. 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 Irritating to 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 and have victim induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.			
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: C₄H₇NO
- 2.3 IMO/UN Designation: Not listed
- 2.4 DOT ID No.: Not listed
- 2.5 CAS Registry No.: 872-50-4
- 2.6 NAERG Guide No.: Not listed
- 2.7 Standard Industrial Trade Classification: 51628

3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: Goggles or face shield; rubber gloves
- 3.2 Symptoms Following Exposure: Inhalation of hot vapors can irritate nose and throat. Ingestion causes irritation of mouth and stomach. Contact with eyes causes irritation. Repeated and prolonged skin contact produces a mild, transient irritation.
- 3.3 Treatment of Exposure: INHALATION: move to fresh air. INGESTION: give large amount of water and induce vomiting. EYES: flush with water for at least 15 min. SKIN: remove from skin and eyes by flooding the affected tissues with water; wash with soap and 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 LD₅₀ = 3.5 mg/kg (rabbit)
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Causes blood abnormalities in rats
- 3.10 Vapor (Gas) Irritant Characteristics: Currently not available
- 3.11 Liquid or Solid Characteristics: Currently not available
- 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: 204°F O.C.
- 4.2 Flammable Limits in Air: Currently not available
- 4.3 Fire Extinguishing Agents: Dry chemical, "alcohol" foam, carbon dioxide
- 4.4 Fire Extinguishing Agents Not to Be Used: Water may be ineffective.
- 4.5 Special Hazards of Combustion Products: Toxic oxides of nitrogen may be formed in fire.
- 4.6 Behavior in Fire: Currently not available
- 4.7 Auto Ignition Temperature: Currently not available
- 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: 36.9 (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: Currently not available
- 5.3 Stability During Transport: Stable
- 5.4 Neutralizing Agents for Acids and Caustics: Not pertinent
- 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: None
- 6.5 GESAMP Hazard Profile:
Bioaccumulation: 0
Damage to living resources: 1
Human Oral hazard: 0
Human Contact hazard: 0
Reduction of amenities: 0

7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Technical
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Open (flame arrester)
- 7.5 IMO Pollution Category: Currently not available
- 7.6 Ship Type: Currently not available
- 7.7 Barge Hull Type: Currently not available

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:

Category	Classification
Health Hazard (Blue).....	2
Flammability (Red).....	1
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: 99
- 9.3 Boiling Point at 1 atm: 396°F = 202°C = 475°K
- 9.4 Freezing Point: 1°F = -17°C = 256°K
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 1.03 at 25°C (liquid)
- 9.8 Liquid Surface Tension: Currently not available
- 9.9 Liquid Water Interfacial Tension: Not pertinent
- 9.10 Vapor (Gas) Specific Gravity: 3.4
- 9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
- 9.12 Latent Heat of Vaporization: Currently not available
- 9.13 Heat of Combustion: -13,000 Btu/lb = -7,220 cal/g = -302 X 10³ 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
52	64.849		N O T		N O T		N O T
54	64.780						
56	64.709						
58	64.639						
60	64.570		P		P		P
62	64.500		E		E		E
64	64.429		R		R		R
66	64.360		T		T		T
68	64.290		I		I		I
70	64.230		N		N		N
72	64.160		E		E		E
74	64.089		N		N		N
76	64.020		E		E		E
78	63.950		T		T		T
80	63.880						
82	63.810						
84	63.740						
86	63.670						

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 I S C I B L E		N O T		N O T		N O T
			P		P		P
			E		E		E
			R		R		R
			T		T		T
			I		I		I
			N		N		N
			E		E		E
			N		N		N
			E		E		E
			T		T		T