

P-TOLUIDINE

TOD

CAUTIONARY RESPONSE INFORMATION

Common Synonyms 4-Amino-1-methylbenzene 4-Aminotoluene 4-Methylaniline p-Methylaniline 4-Methylbenzenamine Naphtol as-kg		Solid Colorless Sinks and mixes with water.
Keep people away. Avoid contact with liquid. Shut off ignition sources. Call fire department. Notify local health and pollution control agencies. Protect water intakes.		
Fire	Combustible. POISONOUS GASES MAY BE PRODUCED IN FIRE. Water may be ineffective on fire. Wear goggles and self-contained breathing apparatus. Extinguish with dry chemicals, foam, water, or carbon dioxide. Cool exposed containers with water.	
Exposure	CALL FOR MEDICAL AID. LIQUID Irritating to skin and eyes. If swallowed will cause nausea, vomiting or loss of consciousness. 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 induce vomiting. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.	
Water Pollution	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.	

1. CORRECTIVE RESPONSE ACTIONS

Stop discharge
 Collection Systems: Skim; Pump
 Do not burn

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.
 2.2 **Formula:** 4-CH₃C₆H₄NH₂
 2.3 **IMO/UN Designation:** 6.1/1708
 2.4 **DOT ID No.:** 1708
 2.5 **CAS Registry No.:** 106-49-0
 2.6 **NAERG Guide No.:** 153
 2.7 **Standard Industrial Trade Classification:** 51454

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Chemical safety goggles; face shield; approved respirator; leather or rubber safety shoes; butyl rubber gloves
- 3.2 **Symptoms Following Exposure:** Absorption of toxic quantities by any route causes cyanosis (blue discoloration of lips, nails, skin); nausea, vomiting, and coma may follow. Repeated inhalation of low concentrations may cause pallor, low-grade secondary anemia, fatigability, and loss of appetite. Contact with eyes causes irritation.
- 3.3 **Treatment of Exposure:** Get medical attention following all exposures to this compound.
 INHALATION: move to fresh air. INGESTION: if victim is conscious, promptly induce vomiting
 EYES: flush with copious amounts of water for at least 15 min., holding lids apart. SKIN: remove all contaminated clothing; wash affected areas immediately and thoroughly with plenty of warm water and soap.
- 3.4 **TLV-TWA:** 2 ppm (skin)
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 3; LD₅₀ = 330 mg/kg (mouse)
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** Suspected Carcinogen
 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:** Causes smarting of the skin and first-degree burns on short exposure; may cause second-degree burns on long exposure.
 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:** 188°F C.C.
 4.2 **Flammable Limits in Air:** 1.1 - 6.6%
 4.3 **Fire Extinguishing Agents:** Foam, dry chemical, or carbon dioxide
 4.4 **Fire Extinguishing Agents Not to Be Used:** Currently not available
 4.5 **Special Hazards of Combustion Products:** Toxic and flammable vapors may form in fire.
 4.6 **Behavior in Fire:** Currently not available
 4.7 **Auto Ignition Temperature:** 899°F
 4.8 **Electrical Hazards:** I, D
 4.9 **Burning Rate:** Currently not available
 4.10 **Adiabatic Flame Temperature:** Currently not available
 4.11 **Stoichiometric Air to Fuel Ratio:** 48.8 (calc.)
 4.12 **Flame Temperature:** Currently not available
 4.13 **Combustion Molar Ratio (Reactant to Product):** 12.5 (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:** Will not occur
 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:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** Commercial, 99.5 + %
 7.2 **Storage Temperature:** Ambient
 7.3 **Inert Atmosphere:** Not Listed
 7.4 **Venting:** Not Listed
 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:** Poison
 8.2 **49 CFR Class:** 6.1
 8.3 **49 CFR Package Group:** II
 8.4 **Marine Pollutant:** No
 8.5 **NFPA Hazard Classification:**
- | Category | Classification |
|----------------------|----------------|
| Health Hazard (Blue) | 3 |
| Flammability (Red) | 2 |
| Instability (Yellow) | 0 |
- 8.6 **EPA Reportable Quantity:** 100 pounds
 8.7 **EPA Pollution Category:** B
 8.8 **RCRA Waste Number:** U353
 8.9 **EPA FWPCA List:** Not listed

9. PHYSICAL & CHEMICAL PROPERTIES

- 9.1 **Physical State at 15° C and 1 atm:** Solid
 9.2 **Molecular Weight:** 107.2
 9.3 **Boiling Point at 1 atm:** 393°F = 200.6°C = 473.6°K
 9.4 **Freezing Point:** 112.1°F = 44.5°C = 317.7°K
 9.5 **Critical Temperature:** Currently not available
 9.6 **Critical Pressure:** Currently not available
 9.7 **Specific Gravity:** 1.0 at 20°C
 9.8 **Liquid Surface Tension:** 34.6 dyne/cm = .035 N/m at 50°C
 9.9 **Liquid Water Interfacial Tension:** Not Pertinent
 9.10 **Vapor (Gas) Specific Gravity:** 3.9
 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:** -15883 Btu/lb = -8824 cal/g = -369 x 10³ J/kg
 9.14 **Heat of Decomposition:** Not pertinent
 9.15 **Heat of Solution:** Not pertinent
 9.16 **Heat of Polymerization:** Not pertinent
 9.17 **Heat of Fusion:** 71.8 Btu/lb = 39.9 cal/g = 1.7 x 10⁵ J/kg
 9.18 **Limiting Value:** Currently not available
 9.19 **Reid Vapor Pressure:** Very Low

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	60.030		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	122 124 126 128 130 132 134 136 138 140	1.800 1.773 1.746 1.719 1.692 1.665 1.638 1.611 1.584 1.557

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
70	0.744	120	0.029		C	0	0.259
72	0.780	140	0.065		U	25	0.270
74	0.816	160	0.129		R	50	0.281
76	0.853	180	0.236		R	75	0.292
78	0.889	200	0.406		E	100	0.304
80	0.925	220	0.662		N	125	0.315
82	0.962	240	1.035		T	150	0.326
84	0.998	260	1.563		L	175	0.338
86	1.035	280	2.287		Y	200	0.349
88	1.071	300	3.260			225	0.360
		320	4.543		N	250	0.371
		340	6.204		O	275	0.383
		360	8.322		T	300	0.394
		380	10.989			325	0.405
					A	350	0.417
					V	375	0.428
					A	400	0.439
					I	425	0.450
					L	450	0.462
					A	475	0.473
					B	500	0.484
					L	525	0.495
					E	550	0.507
						575	0.518
						600	0.529