

AMMONIUM PENTABORATE

APB

CAUTIONARY RESPONSE INFORMATION			
Common Synonyms Ammonium decaborate octahydrate Ammonium pentaborate tetrahydrate	Solid	White	Odorless
<p>Sinks and mixes slowly with water.</p> <p>Stop discharge if possible. Keep people away. Avoid contact with solid and dust. Isolate and remove discharged material. Notify local health and pollution control agencies. Protect water intakes.</p>			
Fire	<p>Not flammable. POISONOUS GASES MAY BE PRODUCED IN FIRE. Wear goggles and self-contained breathing apparatus.</p>		
Exposure	<p>CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. If inhaled will cause coughing or difficult breathing. 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.</p> <p>SOLID 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.</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	2. CHEMICAL DESIGNATIONS
Dilute and disperse Stop discharge	<p>2.1 CG Compatibility Group: Not listed</p> <p>2.2 Formula: $\text{NH}_4\text{B}_5\text{O}_9 \cdot 4\text{H}_2\text{O}$ or $(\text{NH}_4)_2\text{B}_9\text{O}_{10} \cdot 8\text{H}_2\text{O}$</p> <p>2.3 IMO/UN Designation: Not listed</p> <p>2.4 DOT ID No.: Not listed</p> <p>2.5 CAS Registry No.: Currently not available</p> <p>2.6 NAERG Guide No.: Not listed</p> <p>2.7 Standard Industrial Trade Classification: 51481</p>
3. HEALTH HAZARDS	
<p>3.1 Personal Protective Equipment: Disposable-type respirator; side-shield safety spectacles; full-brimmed hard hat; goggles; ammonia gas mask</p> <p>3.2 Symptoms Following Exposure: Inhalation of dust may result in non-specific irritation of upper respiratory tract. Ingestion of large quantities may produce symptoms of non-specific irritation of the gastrointestinal tract, nausea, vomiting, cramps, diarrhea. Contact with dust causes moderate eye irritation and minor skin irritation.</p> <p>3.3 Treatment of Exposure: INHALATION: move from contaminated atmosphere; if respiratory discomfort persists, see a physician. INGESTION: give large amounts of water or warm salty water to induce vomiting and continue until vomitus is clear; obtain medical attention if abdominal discomfort persists. EYES: flush with large quantities of running water for a minimum of 15 min.; obtain medical help if irritation persists. SKIN: immediately flush affected areas with water; obtain medical help if irritation persists.</p> <p>3.4 TLV-TWA: Not listed.</p> <p>3.5 TLV-STEL: Not listed.</p> <p>3.6 TLV-Ceiling: Not listed.</p> <p>3.7 Toxicity by Ingestion: Currently not available</p> <p>3.8 Toxicity by Inhalation: Currently not available.</p> <p>3.9 Chronic Toxicity: Currently not available</p> <p>3.10 Vapor (Gas) Irritant Characteristics: Currently not available</p> <p>3.11 Liquid or Solid Characteristics: Currently not available</p> <p>3.12 Odor Threshold: Currently not available</p> <p>3.13 IDLH Value: Not listed.</p> <p>3.14 OSHA PEL-TWA: Not listed.</p> <p>3.15 OSHA PEL-STEL: Not listed.</p> <p>3.16 OSHA PEL-Ceiling: Not listed.</p> <p>3.17 EPA A EGL: Not listed</p>	
NOTES	

4. FIRE HAZARDS	7. SHIPPING INFORMATION
4.1 Flash Point: Not flammable	7.1 Grades of Purity: Pure, 99%; Radio, 99.98%; Technical, 99.8%
4.2 Flammable Limits in Air: Not flammable	7.2 Storage Temperature: Ambient
4.3 Fire Extinguishing Agents: Not pertinent	7.3 Inert Atmosphere: No requirement
4.4 Fire Extinguishing Agents Not to Be Used: Not pertinent	7.4 Venting: Open
4.5 Special Hazards of Combustion Products: Toxic oxides of nitrogen may form in fire.	7.5 IMO Pollution Category: Currently not available
4.6 Behavior in Fire: Not pertinent	7.6 Ship Type: Currently not available
4.7 Auto Ignition Temperature: Not pertinent	7.7 Barge Hull Type: Currently not available
4.8 Electrical Hazards: Not pertinent	
4.9 Burning Rate: Not pertinent	
4.10 Adiabatic Flame Temperature: Not pertinent	
4.11 Stoichiometric Air to Fuel Ratio: Not pertinent	
4.12 Flame Temperature: Not pertinent	
4.13 Combustion Molar Ratio (Reactant to Product): Currently not available	
4.14 Minimum Oxygen Concentration for Combustion (MOCC): Not listed	
8. HAZARD CLASSIFICATIONS	9. PHYSICAL & CHEMICAL PROPERTIES
8.1 49 CFR Category: Not listed	9.1 Physical State at 15°C and 1 atm: Solid
8.2 49 CFR Class: Not pertinent	9.2 Molecular Weight: 272.20
8.3 49 CFR Package Group: Not listed	9.3 Boiling Point at 1 atm: Not pertinent
8.4 Marine Pollutant: No	9.4 Freezing Point: Not pertinent
8.5 NFPA Hazard Classification: Not listed	9.5 Critical Temperature: Not pertinent
8.6 EPA Reportable Quantity: Not listed	9.6 Critical Pressure: Not pertinent
8.7 EPA Pollution Category: Not listed	9.7 Specific Gravity: 1.58 at 15°C (solid)
8.8 RCRA Waste Number: Not listed	9.8 Liquid Surface Tension: Not pertinent
8.9 EPA FWPCA List: Not listed	9.9 Liquid Water Interfacial Tension: Not pertinent
5. CHEMICAL REACTIVITY	9.10 Vapor (Gas) Specific Gravity: Not pertinent
5.1 Reactivity with Water: No reaction	9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
5.2 Reactivity with Common Materials: Currently not available	9.12 Latent Heat of Vaporization: Not pertinent
5.3 Stability During Transport: Stable	9.13 Heat of Combustion: Not pertinent
5.4 Neutralizing Agents for Acids and Caustics: Not pertinent	9.14 Heat of Decomposition: Not pertinent
5.5 Polymerization: Not pertinent	9.15 Heat of Solution: Currently not available
5.6 Inhibitor of Polymerization: Not pertinent	9.16 Heat of Polymerization: Not pertinent
6. WATER POLLUTION	9.17 Heat of Fusion: Currently not available
6.1 Aquatic Toxicity: Currently not available	9.18 Limiting Value: Currently not available
6.2 Waterfowl Toxicity: Currently not available	9.19 Reid Vapor Pressure: Currently not available
6.3 Biological Oxygen Demand (BOD): Currently not available	
6.4 Food Chain Concentration Potential: None	
6.5 GESAMP Hazard Profile: Not listed	

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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
	NOT PERTINENT		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT

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
68	10.600		NOT PERTINENT		NOT PERTINENT		NOT PERTINENT