

# AMMONIUM PERSULFATE

APE

## CAUTIONARY RESPONSE INFORMATION

<b>Common Synonyms</b> Ammonium peroxydisulfate Peroxydisulfuric acid, diammonium salt		Solid  Light straw to colorless  Mild unpleasant odor
Sinks and mixes with water.		
Stop discharge if possible. <b>Keep people away.</b> Call fire department. Avoid contact with solid and dust. Isolate and remove discharged material. Notify local health and pollution control agencies.		
<b>Fire</b>	Not flammable. Will increase the intensity of a fire. <b>POISONOUS GASES MAY BE PRODUCED IN FIRE.</b> Wear goggles and self-contained breathing apparatus. Flood discharge area with water.	
<b>Exposure</b>	CALL FOR MEDICAL AID. DUST Irritating to eyes, nose and throat. Harmful if inhaled. 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.  SOLID Irritating to skin and eyes. Harmful if swallowed. 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. IF SWALLOWED and victim is UNCONSCIOUS OR HAVING CONVULSIONS, do nothing except keep victim warm.	
<b>Water Pollution</b>	Dangerous to aquatic life in high concentrations. 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:  $(\text{NH}_4)_2\text{S}_2\text{O}_8$
- 2.3 IMO/UN Designation: 5.1/1444
- 2.4 DOT ID No.: 1444
- 2.5 CAS Registry No.: 7727-54-0
- 2.6 NAERG Guide No.: 140
- 2.7 Standard Industrial Trade Classification: 51481

### 3. HEALTH HAZARDS

- 3.1 Personal Protective Equipment: U.S. Bu. Mines approved toxic dust mask; chemical goggles; rubber gloves; neoprene-coated shoes
- 3.2 Symptoms Following Exposure: Inhalation produces slight toxic effects. Contact with dust irritates eyes and causes skin rash.
- 3.3 Treatment of Exposure: INHALATION: remove to fresh air. EYES: wash with water for 20 min.; call a physician. SKIN: wash with water.
- 3.4 TLV-TWA: 0.1 mg/m<sup>3</sup>
- 3.5 TLV-STEL: Not listed.
- 3.6 TLV-Ceiling: Not listed.
- 3.7 Toxicity by Ingestion: Grade 2; oral rat LD<sub>50</sub> = 820 mg/kg
- 3.8 Toxicity by Inhalation: Currently not available.
- 3.9 Chronic Toxicity: Currently not available
- 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: Not flammable
- 4.2 Flammable Limits in Air: Not pertinent
- 4.3 Fire Extinguishing Agents: Water
- 4.4 Fire Extinguishing Agents Not to Be Used: Currently not available
- 4.5 Special Hazards of Combustion  
 Products: Toxic oxides of nitrogen and sulfuric acid fumes may form in fire.
- 4.6 Behavior in Fire: Decomposes with loss of oxygen that increases intensity of fire
- 4.7 Auto Ignition Temperature: Not pertinent
- 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

### 5. CHEMICAL REACTIVITY

- 5.1 Reactivity with Water: No reaction
- 5.2 Reactivity with Common Materials: Contact with grease, wood, and other combustibles may result in a fire.
- 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:  
 76.3 ppm/96 hr/rainbow trout/TL<sub>m</sub>  
 391 ppm/96 hr/grass shrimp/TL<sub>m</sub>  
 103 ppm/96 hr/bluegill sunfish/TL<sub>m</sub>  
 120 ppm/48 hr/daphnia/TL<sub>m</sub>/fresh water
- 6.2 Waterfowl Toxicity: Currently not available
- 6.3 Biological Oxygen Demand (BOD): None
- 6.4 Food Chain Concentration Potential: None
- 6.5 GESAMP Hazard Profile:  
 Bioaccumulation: O  
 Damage to living resources: 1  
 Human Oral hazard: 1  
 Human Contact hazard: II  
 Reduction of amenities: XXX

### 7. SHIPPING INFORMATION

- 7.1 Grades of Purity: Reagent; pure
- 7.2 Storage Temperature: Ambient
- 7.3 Inert Atmosphere: No requirement
- 7.4 Venting: Open
- 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: Oxidizer
- 8.2 49 CFR Class: 5.1
- 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).....	1
Instability (Yellow).....	1
- 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: Solid
- 9.2 Molecular Weight: 228.20
- 9.3 Boiling Point at 1 atm: Not pertinent (decomposes at 120°C)
- 9.4 Freezing Point: Not pertinent (decomposes at 120°C)
- 9.5 Critical Temperature: Not pertinent
- 9.6 Critical Pressure: Not pertinent
- 9.7 Specific Gravity: 1.98 at 20°C (solid)
- 9.8 Liquid Surface Tension: Not pertinent
- 9.9 Liquid Water Interfacial Tension: Not pertinent
- 9.10 Vapor (Gas) Specific Gravity: Not pertinent
- 9.11 Ratio of Specific Heats of Vapor (Gas): Not pertinent
- 9.12 Latent Heat of Vaporization: Not pertinent
- 9.13 Heat of Combustion: Not pertinent
- 9.14 Heat of Decomposition: Currently not available
- 9.15 Heat of Solution: 77 Btu/lb = 43 cal/g = 1.8 X 10<sup>5</sup> J/kg
- 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
	N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T		N O T  P E R T I N E N T

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
34	59.700		N		N		N
36	60.700		O		O		O
38	61.700		T		T		T
40	62.700		P		P		P
42	63.700		E		E		E
44	64.700		R		R		R
46	65.700		T		T		T
48	66.700		I		I		I
50	67.700		N		N		N
52	68.700		E		E		E
54	69.700		N		N		N
56	70.700		E		E		E
58	71.700		N		N		N
60	72.700		T		T		T
62	73.700						
64	74.700						
66	75.700						
68	76.700						
70	77.700						
72	78.700						
74	79.700						
76	80.700						
78	81.700						
80	82.700						
82	83.700						
84	84.700						