PHOSPHORUS PENTASULFIDE

1. CORRECTIVE RESPONSE ACTIONS
   - Dilute and disperse dissolved material
   - Neutralize
   - Do not add water to undissolved material

2. CHEMICAL DESIGNATIONS
   - 2.1 CG Compatibility Group: Not listed
   - 2.2 Formula: P5S10
   - 2.3 IMO/UN Designation: 4.1/1340
   - 2.4 DOT ID No.: 1340
   - 2.5 CAS Registry No.: 1314-80-3
   - 2.6 NAERSI Guide No.: 139
   - 2.7 Standard Industrial Trade Classification: 52242

3. HEALTH HAZARDS
   - 3.1 Personal Protective Equipment: Chemical safety goggles; plastic face shield; self-contained or air-line respirator
   - 3.2 Symptoms Following Exposure: Hydrogen sulfide gas formed by reaction with moisture can cause death by respiratory failure. The gas also irritates eyes and respiratory system. The solid irritates skin and eyes; the symptoms may be delayed several hours.
   - 3.3 Treatment of Exposure: ILLAVALATION: remove victim from contaminated area; if breathing has stopped, give artificial respiration. INGESTION: induce vomiting; call physician. SKIN: remove skin and eyes; the symptoms may be delayed several hours.
   - 3.4 TLV-TWA: 1 mg/m³
   - 3.5 TLV-STEL: Not listed
   - 3.6 TLV-Ceiling: 3 mg/m³
   - 3.7 Toxicity by Ingestion: Currently not available
   - 3.8 Toxicity by Inhalation: Currently not available.
   - 3.9 Chronic Toxicity: Currently not available
   - 3.10 Vapor (Gas) Irritant Characteristics: Hydrogen sulfide gas, formed by reaction with moisture, causes severe irritation of eyes and throat and can cause eye and lung injury. It cannot be tolerated even at low concentrations.
   - 3.11 Liquid or Solid Characteristics: Minimum hazard. If spilled on clothing and allowed to remain, may cause smarting and reddening of the skin.
   - 3.12 Odor Threshold: 0.0047 ppm (hydrogen sulfide). High (lethal) concentrations can paralyze the sense of smell.
   - 3.13IDLH Value: 250 mg/m³
   - 3.14 OSHA PEL-TWA: 1 mg/m³
   - 3.15 OSHA PEL-STEL: Not listed
   - 3.16 OSHA PEL-Ceiling: Not listed
   - 3.17 EPA AEGTL: Not listed

4. FIRE HAZARDS
   - 4.1 Flash Point: Flammable solid
   - 4.2 Flammable Limits in Air: Not pertinent
   - 4.3 Fire Extinguishing Agents: Sand and carbon dioxide
   - 4.4 Fire Extinguishing Agents Not to Be Used: Water
   - 4.5 Special Hazards of Combustion Products: Products of combustion include sulfur dioxide and phosphorus pentoxide, which are irritating, toxic and corrosive.
   - 4.6 Behavior in Fire: Not pertinent
   - 4.7 Auto Ignition Temperature: 288°F
   - 4.8 Electrical Hazards: Not pertinent
   - 4.9 Burning Rate: Not pertinent
   - 4.10 Atiabatic Flame Temperature: Currently not available
   - 4.11 Stoichiometric Air to Fuel Ratio: 107.1 (calc.)
   - 4.12 Flame Temperature: Currently not available
   - 4.13 Combustion Molar Ratio (Reactant to Product): 18.0 (calc.)
   - 4.14 Minimum Oxygen Concentration for Combustion (MOCC): %: diurnal: 9.3%; CO₂: diurnal: 12.0%

5. CHEMICAL REACTIVITY
   - 5.1 Reactivity with Water: Reacts with liquid water or atmospheric moisture to liberate toxic hydrogen sulfide gas.
   - 5.2 Reactivity with Common Materials: No reaction
   - 5.3 Stability During Transport: Can be ignited by friction.
   - 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: Not listed

7. SHIPPING INFORMATION
   - 7.1 Grades of Purity: "Regular" (low reactivity), "reactive" (high reactivity), distilled, undistilled all 95%
   - 7.2 Storage Temperature: Ambient
   - 7.3 Inert Atmosphere: No requirement
   - 7.4 Venting: Sealed containers must be stored in a well-ventilated area
   - 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 Class: 4.3
   - 8.2 49 CFR Class: 18
   - 8.3 49 CFR Package Group: II
   - 8.4 Marine Pollutant: No
   - 8.5 NFPA Hazard Classification:
     - Category Classification
       - Health Hazard (Red): 2
       - Flammability (Red): 7
       - Instability (Yellow): 2
     - Special White: 1
     - 8.6 EPA Reportable Quantity: 100 pounds
     - 8.7 EPA Pollution Category: B
     - 8.8 RCRA Waste Number: U169
     - 8.9 EPA FWPCA List: Yes

9. PHYSICAL & CHEMICAL PROPERTIES
   - 9.1 Physical State at 15°C and 1 atm: Solid
   - 9.2 Molecular Weight: 255.227
   - 9.3 Boiling Point at 1 atm: 95°F = 514°K = 787°C
   - 9.4 Freezing Point: 52°F = 275°C = 548°F
   - 9.5 Critical Temperature: Not pertinent
   - 9.6 Critical Pressure: Not pertinent
   - 9.7 Specific Gravity: 2.03 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: 184 Btu/lb = 102 cal/g = 4.27 X 10⁶ J/kg
   - 9.13 Heat of Combustion: -10,890 Btu/lb = -4,600 cal/g = -253.3 X 10⁶ J/kg
   - 9.14 Heat of Decomposition: Not pertinent
   - 9.15 Heat of Solution (s).....-20 Btu/lb = -12 cal/g = -0.5 X 10⁶ 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 Refractive Index: Not pertinent

NOTES

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