

SODIUM PHOSPHATE

SPP

CAUTIONARY RESPONSE INFORMATION

Common Synonyms Disodium dihydrogen pyrophosphate Sodium acid pyrophosphate Sodium phosphate dibasic Sodium phosphate, monobasic Sodium phosphate, tribasic	Solid (powder or granules) White Odorless
Sinks and mixes with water.	
<p>Restrict access. Keep people away. Avoid contact with solid and dust. Notify local health and pollution control agencies. Protect water intakes.</p>	
Fire	Not flammable.
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	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:** (1) NaH_2PO_4 ; (2) Na_2HPO_4 ; (3) $\text{Na}_2\text{P}_2\text{O}_7$; (4) $\text{Na}_2\text{H}_2\text{P}_2\text{O}_7$; (5) $\text{Na}_2\text{P}_2\text{O}_7$; (6) $(\text{NaPO}_3)_n$; (7) $(\text{NaPO}_3)_n$; (8) $(\text{NaPO}_3)_n \cdot \text{NaO}$; (9) $\text{Na}_2\text{P}_2\text{O}_7$
2.3 **IMO/UN Designation:** Not listed
2.4 **DOT ID No.:** Not listed.
2.5 **CAS Registry No.:** Currently not available
2.6 **NAERG Guide No.:** Not listed
2.7 **Standard Industrial Trade Classification:** 52363

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** U.S. Bu. Mines toxic dust mask; protective gloves; chemical-type goggles; full-cover clothing
- 3.2 **Symptoms Following Exposure:** Inhalation of heavy dust may irritate nose and throat. Ingestion may injure mouth, throat, and gastrointestinal tract, resulting in nausea, vomiting, cramps and diarrhea; pain and burning in mouth may occur. Contact with eyes produces local irritation; can lead to chronic damage. Contact with skin produces local irritation; repeated or prolonged contact can lead to dermatitis.
- 3.3 **Treatment of Exposure:** If the following measures do not eliminate the symptoms, see a physician. **INHALATION:** give large amounts of water or warm salty water to induce vomiting; repeat until vomitus is clear; milk, eggs, or olive oil may then be given to soothe the stomach. **EYES:** immediately flush with large amounts of water for at least 15 min., holding eyelids apart to ensure flushing of entire surface; avoid chemical neutralizers. **SKIN:** flush with water; avoid chemical neutralizers.
- 3.4 **TLV-TWA:** Not listed.
3.5 **TLV-STEL:** Not listed.
3.6 **TLV-Ceiling:** Not listed.
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:** 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 flammable
4.3 **Fire Extinguishing Agents:** Not pertinent
4.4 **Fire Extinguishing Agents Not to Be Used:** Not pertinent
4.5 **Special Hazards of Combustion Products:** Not pertinent
4.6 **Behavior in Fire:** May melt with loss of steam
4.7 **Auto Ignition Temperature:** Not pertinent
4.8 **Electrical Hazards:** Not pertinent
4.9 **Burning Rate:** Not pertinent
4.10 **Adiabatic Flame Temperature:** Currently not available
4.11 **Stoichiometric Air to Fuel Ratio:** Not pertinent.
4.12 **Flame Temperature:** Currently not available
4.13 **Combustion Molar Ratio (Reactant to Product):** Not pertinent.
4.14 **Minimum Oxygen Concentration for Combustion (MOCC):** Not listed

5. CHEMICAL REACTIVITY

- 5.1 **Reactivity with Water:** All dissolve readily. MSP and ASPP form weakly acidic solutions; TSP forms strong caustic solution, similar to soda lye; TSPP forms weakly alkaline solution.
5.2 **Reactivity with Common Materials:** When wet, mild steel or brass may be corroded by MSP, ASPP, and TSP. The others are not considered corrosive.
5.3 **Stability During Transport:** All forms of sodium phosphate are stable. TSP tends to pick up moisture from air and form a hard cake.
5.4 **Neutralizing Agents for Acids and Caustics:** For those sodium phosphates that form acidic or basic solutions, dilution with water removes hazard.
5.5 **Polymerization:** Not pertinent
5.6 **Inhibitor of Polymerization:** Not pertinent

6. WATER POLLUTION

- 6.1 **Aquatic Toxicity:** 126 ppm/72 hr/daphnia magna/TL₅₀/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:** Not listed

7. SHIPPING INFORMATION

- 7.1 **Grades of Purity:** All are available in Technical Grade, some in Food Grade and Reagent Grade. Some are available as hydrates as well as anhydrous forms.
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:** 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:** Not listed
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:** Values for anhydrous salts run from 120 to high polymer values.
9.3 **Boiling Point at 1 atm:** Not pertinent
9.4 **Freezing Point:** Not pertinent
9.5 **Critical Temperature:** Not pertinent
9.6 **Critical Pressure:** Not pertinent
9.7 **Specific Gravity:** 1.8–2.5 at 25°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:** Not pertinent
9.15 **Heat of Solution:** +83 to –81 Btu/lb = +46 to –45 cal/g = +1.93 to –1.88 X 10⁵ J/kg
9.16 **Heat of Polymerization:** Not pertinent
9.17 **Heat of Fusion:** 84.4 cal/g
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
77	50.000		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