

SODIUM PHOSPHATE, TRIBASIC

SPH

CAUTIONARY RESPONSE INFORMATION

Common Synonyms		Solid, crystals	Colorless or white	Odorless
Dri-tri Trisodium orthophosphate Trisodium phosphate		Sinks and mixes with water.		
<p>Restrict access. Keep people away. AVOID CONTACT WITH SOLID AND DUST. Wear goggles, self-contained breathing apparatus, and rubber overclothing (including gloves). 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, throat and skin. Move to fresh air. If breathing has stopped, give artificial respiration. If breathing is difficult, give oxygen. IF IN EYES, hold eyelids open and flush with plenty of water.</p> <p>SOLID. Will burn skin and eyes. Harmful if swallowed. Remove contaminated clothing or 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.</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
 Chemical and Physical Treatment:
 Neutralize

2. CHEMICAL DESIGNATIONS

2.1 **CG Compatibility Group:** Not listed.
 2.2 **Formula:** Na₃PO₄
 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.:** 171
 2.7 **Standard Industrial Trade Classification:** 52363

3. HEALTH HAZARDS

- 3.1 **Personal Protective Equipment:** Rubber gloves and boots, safety goggles or face mask, hooded suit, and respirator with approved canister, or a self-contained breathing apparatus.
- 3.2 **Symptoms Following Exposure:** INHALATION: Will produce local irritation in the respiratory tract. A burning sensation in the nose and throat, as well as coughing (and in high concentrations, choking) may be noted. May cause lung irritation. EYES: Immediate and severe pain followed by conjunctival edema and corneal clouding. Cataracts may form. SKIN: Immediate local reactions, including reddening, itching and irritation, followed by loss of surface layers of the skin. INGESTION: Severe tissue damage to all portions of the gastrointestinal tract. Symptoms include pain and burning wherever contact is made. Nausea, vomiting, cramps, and diarrhea may occur. Tissue corrosion and ulceration may result if untreated.
- 3.3 **Treatment of Exposure:** Get medical aid. INHALATION: Remove from exposure. If needed, give artificial respiration. EYES: Wash with running water for 15 min. Continue irrigation for additional 15 min. if physician is not available. SKIN: Wash with running water. Remove contaminated clothing. INGESTION: Induce vomiting by giving large amounts of water or warm salty water. If this doesn't cause vomiting, induce. Continue until vomitus is clear. Milk, eggs or olive oil may be given for their soothing effect.
- 3.4 **TLV-TWA:** Not listed.
 3.5 **TLV-STEL:** Not listed.
 3.6 **TLV-Ceiling:** Not listed.
 3.7 **Toxicity by Ingestion:** Grade 1; LD₅₀ = 0-15 g/kg.
 3.8 **Toxicity by Inhalation:** Currently not available.
 3.9 **Chronic Toxicity:** None
 3.10 **Vapor (Gas) Irritant Characteristics:** Not pertinent
 3.11 **Liquid or Solid Characteristics:** Severe skin irritant. Causes second and third-degree burns on short contact and is very injurious to the eyes.
 3.12 **Odor Threshold:** Odorless
 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 pertinent
 4.2 **Flammable Limits in Air:** Not flammable
 4.3 **Fire Extinguishing Agents:** Use appropriate extinguishing media for suppression of exposure fire.
 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:** At fire temperature decomposes to emit highly toxic and irritating phosphorus oxides.
 4.7 **Auto Ignition Temperature:** Not pertinent
 4.8 **Electrical Hazards:** Not pertinent
 4.9 **Burning Rate:** Not flammable
 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:** No reaction
 5.2 **Reactivity with Common Materials:** No reaction
 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:**
 151 ppm/96 hr/mosquito fish/TL_m/Turbid water
 126 ppm/96 hr/daphnia magna/TL_m.
 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:** Technical grade-92% min. Food grade. Reagent Grade. Hydrated. Anhydrous.
 7.2 **Storage Temperature:** Ambient
 7.3 **Inert Atmosphere:** Currently not available
 7.4 **Venting:** Currently not available
 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:** 5000 pounds
 8.7 **EPA Pollution Category:** D
 8.8 **RCRA Waste Number:** Not listed
 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:** 163.95 (anhydrous); 380.16 (Hydrate, 12H₂O)
 9.3 **Boiling Point at 1 atm:** The hydrate loses 11 moles of water at 100°C, 212°F, 373.2°K.
 9.4 **Freezing Point:** 163.94–170.06°F = 73.3–76.7°C = 346.45–349.85°K.
 9.5 **Critical Temperature:** Not pertinent
 9.6 **Critical Pressure:** Not pertinent
 9.7 **Specific Gravity:** 1.62 at 20°C (Hydrate) 2.52 anhydrous
 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:** hydrate absorbs heat. 75.2 Btu/lb = 40.3 cal/g = 1.69 X 10⁵ 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
50	8.835		N		N		N
55	9.674		O		O		O
60	10.593		T		T		T
65	11.599		P		P		P
70	12.701		E		E		E
75	13.907		R		R		R
80	15.228		T		T		T
85	16.675		I		I		I
90	18.259		N		N		N
95	19.993		E		E		E
100	21.892		N		N		N
105	23.971		E		E		E
110	26.248		N		N		N
115	28.742		T		T		T
120	31.472						