

**PRODUCT IDENTIFICATION**

**Chemical Name and Synonyms:** Sodium phosphate, dibasic; Disodium orthophosphate, anhydrous, Disodium hydrogen phosphate, anhydrous, OR Sodium phosphate dibasic, heptahydrate; Sodium orthophosphate dibasic; Disodium hydrogen phosphate heptahydrate

**Chemical Family:** Inorganic salt

**Chemical Formula:** Na<sub>2</sub>HPO<sub>4</sub>

**Product Use:** Laboratory reagent

**Manufacturers Name and Address:** Caledon Laboratories Ltd. 40 Armstrong Avenue Georgetown, Ontario L7G 4R9

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**HAZARDOUS INGREDIENTS OF MATERIALS**

**Ingredients, %, TLV Units, CAS No:** Sodium phosphate, dibasic, anhydrous, > 98, Not established, 7558-79-4 OR Sodium phosphate, dibasic, heptahydrate, > 98, Not established, 7782-85-6

**PHYSICAL DATA**

**Physical State:** Solid

**Odour and Appearance:** Crystals or granular powder, odourless

**Odour Threshold (ppm):** Not applicable.

**Vapour Pressure (mm Hg):** Not applicable (does not form vapour)

**Vapour Density (Air = 1):** Not applicable.

**Evaporation Rate:** Not applicable.

**Boiling Point (degrees C):** Anhydrous form is converted to pyrophosphate at 240 °C

**Melting Point (degrees C):** Not available.

**pH:** 9.1 (1 %, aqueous, 25 °C)

**Specific Gravity:** 1.679 (heptahydrate)

**Coefficient of Water/Oil distribution:** Not available.

**SHIPPING DESCRIPTION**

**UN:** Not regulated.

**T.D.G. Class:** Not regulated.

**Pkg. Group:** Not regulated.

**REACTIVITY DATA**

**Chemical Stability:** Anhydrous form is hygroscopic.

**Incompatibility with other substances:** May react violently with strong acids. May be mildly corrosive to steel and aluminum.

**Reactivity:** Hygroscopic. Protect from moisture. Avoid heat, incompatible materials, and generation of dust.

**FIRE AND EXPLOSION DATA**

**Flammability:** Non combustible. Will not burn.

**Extinguishing Media:** Use extinguisher appropriate to the surrounding fire conditions. Fight fire from a safe distance and from upwind. Because of release of toxic products, firefighters must wear protective equipment (self-contained breathing apparatus) and clothing sufficient to prevent inhalation and contact with skin and eyes. Bunker gear may not be adequate.

**Flash Point (Method Used):** Not applicable.

**Autoignition Temperature:** Not applicable.

**Upper Flammable Limit (% by volume):** Not applicable.

**Lower Flammable Limit (% by volume):** Not applicable.

**Hazardous Combustion Products:** Phosphorous oxides may be released in fire.

**Sensitivity to Impact:** None identified.

**TOXICOLOGICAL PROPERTIES AND HEALTH DATA**

**Toxicological Data:**

**LD50:** (oral, rat) 12,930 mg/kg (heptahydrate)

**LC50:** Not available.

**Irritation:** (eye, rabbit) 500 mg/24h, mild; (skin, rabbit) 500 mg/24h, mild

**Effects of Acute Exposure to Product:**

**Inhaled:** Dust or mists may have a slightly acidic irritating effect on the nasal and respiratory passages. High concentrations of dust may cause coughing, temporary irritation. No human or animal information available.

**In contact with skin:** Prolonged skin contact may cause irritation. No effects expected if rinsed immediately. No human information available.

**In contact with eyes:** May cause mild irritation based on animal studies. No human information available.

**Ingested:** Not considered toxic, but ingestion of large amounts may cause diarrhea, nausea, vomiting and cramps.

**Effects of Chronic Exposure to Product:** Dermatitis may develop from repeated or prolonged skin exposure. Prolonged or repeated exposure to high concentrations of dust may cause increased mucous flow in upper respiratory tract which disappears when exposure is stopped. May contribute to development of chronic bronchitis, but air pollution and smoking are more important. High oral doses (1% in the diet) of inorganic phosphates have produced toxic effects on the bones, kidneys and parathyroid glands. This is not considered relevant to occupational settings. Long term ingestion of >1% of diet caused kidney damage in rats; no effects were observed after administration of 0.5% of diet over a three-year period.

**Carcinogenicity:** Not listed as a carcinogen by NTP, IARC or OSHA.

**Teratogenicity:** No information available. Not expected to be teratogenic.

**Reproductive Effects:** No human information available. Fertility was reduced in rats receiving large doses over three generations; the amount was also toxic to the parents. Not expected to be a hazard in normal workplace usage.

**Mutagenicity:** No information available. Not expected to be mutagenic.

**Synergistic Products:** None known.

**PREVENTIVE MEASURES**

**Engineering Controls:** Local exhaust ventilation recommended.

**Respiratory Protection:** Dust/mist mask. For conditions where dust or mist is present, to the maximum use specified by the respirator supplier, NIOSH/MSHA approved half-face high-efficiency dust/mist filter respirator, or NIOSH/MSHA approved full face-piece high-efficiency dust/mist filter respirator. Higher or unknown concentrations, or for fire or spill conditions, self-contained breathing apparatus, or full face-piece, positive-pressure supplied-air respirator.

**Skin Protection:** Wear protective gloves and clean body-covering clothing sufficient to limit contact.

**Other Personal Protective Equipment:** Safety shower and eye wash fountain readily available in work area.

**Leak and Spill Procedure:** Ventilate area of spill. If spill is large, and dust is present, clean-up personnel should be trained in the handling of hazardous materials, and should wear protective equipment and clothing sufficient to prevent inhalation of dust or fumes, and contact with skin and eyes. Dampen material and collect into suitable containers for disposal. Wash area of spill thoroughly with water.

**Waste Disposal:** Follow all federal, provincial and local regulations.

**Handling Procedures and Equipment:** Workers using this chemical should be properly trained in its hazards and its safe use, and should wear appropriate protective equipment and clothing. Keep work areas free of incompatible materials. Use the smallest amount possible for the purpose in a designated area with adequate ventilation. Avoid generating dusts. AVOID ALL CONTACT AND INHALATION. Wash thoroughly after working with this chemical. Keep containers closed when not in use.

**Storage Requirements:** Store in a suitable, labelled containers, in a cool, dry, well-ventilated place out of direct sunlight and away from incompatible materials. Keep containers tightly closed.

#### FIRST AID MEASURES

**Specific Measures:**

**Eyes:** Flush eyes thoroughly with running water for five to ten (5 to 10) minutes, or until no trace of chemical remains, holding eyelids open while flushing. Get medical advice if irritation persists.

**Skin:** Brush or wipe off dry material. Flush skin thoroughly with running water until no trace of chemical remains. Get medical attention if irritation develops.

**Inhalation:** Remove to fresh air. Give oxygen and get medical attention for breathing difficulty.

**Ingestion:** If victim is alert and not convulsing, give 2 to 4 glasses of water to dilute material. If vomiting occurs, rinse mouth and give more water to drink. If victim feels unwell, or if a large amount has been ingested, get medical attention.

#### REFERENCES USED

**Budavari:** The Merck Index, 12th ed., 1997

**CCINFO disc:** MSDSs, April 2007

**Royal Society of Chemistry:** Chemical Safety Data Sheets, Vol. 2, 1989

**Sax, Lewis:** Hawleys Condensed Chemical Dictionary, 11th ed., 1987

**Suppliers Material Safety Data Sheets:**

#### ADDITIONAL INFORMATION

**Date Issued:** 31-Aug-92

**Revision:** Apr 2013

**Proposed WHMIS Designation:** D2B (irr)

**Prepared by:** Caledon Laboratories Ltd. (905) 877-0101