

MATERIAL SAFETY DATA SHEET

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Revised 6/24/03
Replaces 3/19/01
As of 10/13/03

TRISODIUM PHOSPHATE CRYSTAL TECH

MSDS ID: PO2021

1. PRODUCT AND COMPANY IDENTIFICATION

PRODUCT NAME : TRISODIUM PHOSPHATE CRYSTAL TECH
MSDS ID : PO2021
CHEMICAL NAME SYNONYMS : TSP Crystals; Trisodium Phosphate Dodecahydrate;
Phosphoric Acid, trisodium salt dodecahydrate
CAS NUMBER : 10101-89-0
CHEMICAL FAMILY : Phosphate Salts
FORMULA : H3O4P.3Na

DISTRIBUTED BY:
Hydrite Chemical Co.
300 N. Patrick Blvd.
Brookfield, WI 53008-0948
(262) 792-1450

EMERGENCY RESPONSE NUMBERS:
24 Hour Emergency # - (414) 277-1311
CHEMTREC Emergency # - (800) 424-9300

MANUFACTURED BY: Astaris LLC; Kaltron-Pettibone

2. COMPOSITION/INFORMATION ON INGREDIENTS

| COMPONENT | CAS NUMBER | OSHA HAZARD | % BY WT. |
|-----------------------------------|------------|-------------|-----------|
| Trisodium phosphate dodecahydrate | 10101-89-0 | YES | 98 - 100% |
| Sodium Hydroxide | 1310-73-2 | YES | 0 - 2 % |

3. HAZARDS IDENTIFICATION

PHYSICAL STATE: Crystalline powder or granules.

COLOR : White.
ODOR : No odor.

EMERGENCY OVERVIEW: DANGER!; Causes eye burns. May cause skin irritation. May be harmful or fatal if swallowed. May be harmful if inhaled.

POTENTIAL HEALTH EFFECTS

ROUTES OF EXPOSURE:

Eyes. Ingestion. Inhalation. Skin.

TARGET ORGANS:

Eyes. Skin. Respiratory System. Digestive Tract.

EYE CONTACT:

May be corrosive to the eyes. Severe irritation and burns may result.
Permanent eye damage may result from contact with this product.

SKIN CONTACT:

May cause moderate irritation.
Prolonged contact may be more severe. Contact may cause: pain. redness.
swelling. blistering.

SKIN ABSORPTION:

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3. HAZARDS IDENTIFICATION (Cont.)

No absorption hazard expected under normal use.

INHALATION:

May cause severe irritation.
May irritate or burn: nose. throat. upper respiratory tract.

INGESTION:

May cause severe irritation.
May irritate or burn: mouth. throat. gastrointestinal tract. May cause:
nausea. vomiting.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE TO PRODUCT:

Eye disorders. Respiratory system disorders. Skin disorders.

OTHER:

None known.

CANCER INFORMATION:

This product does not contain greater than 0.1% of the known or potential carcinogens listed in NTP, IARC, or OSHA.

POTENTIAL ENVIRONMENTAL EFFECTS:

See Section 12.

4. FIRST AID MEASURES

EYE CONTACT:

Immediately flush eyes with plenty of water for at least 15 minutes while holding eyelids open. Tilt head to avoid contaminating unaffected eye. Get immediate medical attention.
Remove contact lens if easy to do.

SKIN CONTACT:

Immediately flush skin with plenty of water while removing contaminated clothing and shoes. Do not reuse clothing or shoes until cleaned. If irritation develops or persists, get medical attention.
Wash with soap and water.

INHALATION:

Remove to fresh air. If breathing is difficult, administer oxygen. If not breathing, give artificial respiration, preferably mouth-to-mouth. GET MEDICAL ATTENTION IMMEDIATELY.

INGESTION:

If swallowed, call a physician immediately. DO NOT induce vomiting unless directed to do so by a physician. Never give anything by mouth to an unconscious person. If vomiting occurs spontaneously, keep head below hips to prevent aspiration of liquid into the lungs.
Give several glasses of water to drink to dilute.

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4. FIRST AID MEASURES (Cont.)

NOTE TO PHYSICIANS: Strongly alkaline, may remove sebaceous oils leaving skin unprotected and may cause chemical burns. Exposed tissues should be flushed thoroughly with water, and eye exposure warrants consultation with an ophthalmologist. Attempts to neutralize ingested material with acids is not recommended. This may cause excess heat and gas production which can increase the risk of perforation. Dilution may do likewise, but when the dry material is ingested, adherence of the particles to the esophageal mucosa may assure perforation so that immediate drinking of cold water or milk is advised. Burns of the esophagus and/or stomach sufficient to lead to perforation and/or stricture formation may occur without oropharyngeal burns. Limited esophagoscopy is recommended to determine if deep and/or circumferential burns are present, because they are most likely to result in esophageal stenosis. Prevention of the latter is controversial; many authorities favor early corticosteroid and/or dilation therapy.

5. FIRE FIGHTING MEASURES

FLASH POINT: None.

FLAMMABILITY LIMITS: LEL: N.A.

UEL: N.A.

AUTOIGNITION TEMPERATURE: No Data

EXTINGUISHING MEDIA:

For fires in area use appropriate media. For example: Alcohol foam. Carbon dioxide. Dry chemical. Water spray.

FIRE FIGHTING METHODS:

Evacuate area of unprotected personnel. Wear protective clothing including NIOSH-Approved self-contained breathing apparatus.

FIRE AND EXPLOSION HAZARDS:

Material will not ignite or burn.

HAZARDOUS COMBUSTION PRODUCTS:

Phosphorous oxides. Sodium oxides.

6. ACCIDENTAL RELEASE MEASURES

SPILL CLEAN-UP PROCEDURES:

Maintain adequate ventilation. Follow personal protective equipment recommendations found in Section 8.

Sweep up material into containers and dispose of properly. Flush remaining area with water to remove trace residue and dispose of properly. Soak up residue with inert absorbent material. Place in non-leaking containers for immediate disposal. Avoid direct discharge to sewers and surface waters. Notify authorities if entry occurs.

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7. HANDLING AND STORAGE

STORAGE:

Store in a cool, well ventilated area, out of direct sunlight. Store in a dry location away from heat. Keep away from incompatible materials. Keep containers tightly closed. Do not store in unlabeled or mislabeled containers.

Protect from moisture.

HANDLING:

Avoid contact with eyes, skin, and clothing. Use with adequate ventilation. Do not swallow. Avoid breathing vapors, mists, or dust. Do not eat, drink, or smoke in work area. Wash thoroughly after handling.

Avoid dust or mist formation.

8. EXPOSURE CONTROLS/PERSONAL PROTECTION

ENGINEERING CONTROLS:

General room ventilation is required.

To keep exposure below established limits, local exhaust may be necessary. Avoid creating dust or mist. Maintain adequate ventilation. Do not use in closed or confined spaces. Keep levels below exposure limits. To determine exposure levels, monitoring should be performed regularly.

RESPIRATORY PROTECTION:

Respiratory protection must be worn when handling this product.

If dust or mist is present, wear: NIOSH-Approved respirator for dusts and mists. NIOSH-Approved self-contained breathing apparatus. DO NOT exceed limits established by the respirator manufacturer. All respiratory protection programs must comply with OSHA 29 CFR 1910.134 and ANSI Z88.2 requirements and must be followed whenever workplace conditions require a respirator's use.

EYE/FACE PROTECTION:

Wear chemical safety goggles while handling this product.

SKIN PROTECTION:

Prevent contact with this product. Wear gloves and protective clothing depending on condition of use.

Protective gloves: Impervious. Chemical-resistant.

OTHER PROTECTIVE EQUIPMENT:

Eye-wash station. Safety shower. Rubber apron. Chemical safety shoes. Rubber boots. Protective clothing.

GENERAL HYGIENE CONSIDERATIONS:

Wash with soap and water before meal times and at the end of each work shift. Good manufacturing practices require gross amounts of any chemical be removed from skin as soon as practical, especially before eating or smoking.

EXPOSURE GUIDELINES:

COMPONENT

-----OSHA----- -----ACGIH-----
PEL STEL/C TWA STEL/C

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8. EXPOSURE CONTROLS/PERSONAL PROTECTION (Cont.)

| | | | | |
|-----------------------------------|------------|------------|------------|------------|
| Trisodium phosphate dodecahydrate | Not Estab. | Not Estab. | Not Estab. | Not Estab. |
| Sodium Hydroxide | 2 mg/m3 | Not Estab. | Not Estab. | C 2 mg/m3 |
| | Not Estab. | C 2 mg/m3+ | | |

NOTE: C = Denotes Ceiling Limit. + Vacated 1989 OSHA PEL(s).

9. PHYSICAL AND CHEMICAL PROPERTIES

| | |
|-----------------------------------|---|
| BOILING POINT (DEG. F) : N.A. | SPECIFIC GRAVITY: 0.9 g/mL (bulk density) |
| FREEZING POINT (DEG. F): N.A. | % VOLATILE (WT%): 0% |
| MELTING POINT (DEG. F) : 167 | EVAPORATION RATE: N.A. |
| VAPOR PRESSURE (MM HG) : N.A. | (nBuAc=1) |
| VAPOR DENSITY (AIR=1) : N.A. | VOC (WT%) : 0 |
| SOLUBILITY IN WATER : Appreciable | VOC (LBS/GAL) : 0 |
| pH : 12 (1% Sol'n) | |

10. STABILITY AND REACTIVITY

STABILITY:

Stable under normal conditions.

CONDITIONS TO AVOID:

Avoid contact with moisture.

INCOMPATIBILITY:

Moisture. Aluminum. Food sugars. Deadly carbon monoxide gas can form in enclosed or poorly ventilated areas or tanks when alkaline products contact food, beverage, or dairy products. Do not enter such areas until they have been well ventilated and carbon monoxide and oxygen levels have been determined to be within OSHA acceptable limits. If carbon monoxide and oxygen levels cannot be measured, wear NIOSH-approved, self-contained breathing apparatus.

HAZARDOUS DECOMPOSITION PRODUCTS:

Phosphorous oxides. Sodium oxides.

HAZARDOUS POLYMERIZATION:

No data.

11. TOXICOLOGICAL INFORMATION

LD50 ORAL : Rat: 20% aqueous solution - 6500 mg/kg
LD50 SKIN : Rabbit: > 300 mg/kg (trisodium phosphate, anhydrous)
LC50 INHALATION: No Data

For detailed toxicological information on this product, contact the address in Section 1 of this MSDS.

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12. ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION:

Extensive data, call for information.

CHEMICAL FATE INFORMATION:

Extensive data, call for information.

13. DISPOSAL CONSIDERATIONS

HAZARDOUS WASTE NUMBER: N.A.

DISPOSAL METHOD:

Dispose of in a permitted hazardous waste management facility following all local, state and federal regulations.

Reclaim. Incinerate or bury in a licensed facility. DO NOT pressurize, cut, weld, solder, drill, grind or expose empty containers to heat, flame, sparks or other sources of ignition. Since emptied containers retain product residue, follow label warnings even after container is emptied. Disposal methods identified are for the product as sold. For proper disposal of used material, an assessment must be completed to determine the proper and permissible waste management options permitted under applicable rules, regulations and/or laws governing your location.

14. TRANSPORT INFORMATION (Not meant to be all inclusive)

DOT (Department of Transportation):

Proper Shipping Name : Not regulated by the DOT.

Identification Number : N.A.

Packing Group : N.A.

Reportable Quantity (RQ): 5000# (Sodium phosphate, tribasic)

Note: This material is not DOT regulated in shipments of less than 5000#.

15. REGULATORY INFORMATION

FEDERAL REGULATIONS:**TSCA INVENTORY STATUS:**

Trisodium phosphate dodecahydrate appears on the U.S. EPA TSCA Inventory under the cas# representing the anhydrous form of this material (7601-54-9 trisodium phosphate, crystalline).

SARA TITLE III SECTION 311/312 CATEGORY:

IMMEDIATE (ACUTE) HEALTH HAZARD : YES

DELAYED (CHRONIC) HEALTH HAZARD : NO

FIRE HAZARD : NO

SUDDEN RELEASE OF PRESSURE HAZARD: NO

REACTIVE HAZARD : NO

SARA SECTION 302/304/313/HAP:

COMPONENT

| RQ (LBS) (*1) | RQ (LBS) (*2) | TPQ (LBS) (*3) | SEC 313 (*4) | HAP (*5) |
|------------------|------------------|-------------------|-----------------|-------------|
|------------------|------------------|-------------------|-----------------|-------------|

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15. REGULATORY INFORMATION (Cont.)

| | | | | | |
|--------------------------------------|-------|------|------|----|----|
| Trisodium phosphate dodecahydrate | *5000 | N.A. | N.A. | NO | NO |
| Sodium Hydroxide | 1000 | N.A. | N.A. | NO | NO |

NOTE: * Reportable as sodium phosphate, tribasic.

-----FOOTNOTES-----

| | |
|---------------------------------|---|
| *1 = CERCLA Reportable Quantity | *3 = SARA EHS Threshold Planning Quantity |
| *2 = SARA Reportable Quantity | *4 = SARA 313 Toxic Chemical/Category |
| | *5 = U.S. EPA Hazardous Air Pollutant |

STATE REGULATIONS:

CALIFORNIA--The following components are listed under Prop 65:
None known.

WISCONSIN--The following components are listed as a Wisconsin HAP:
None.

16. OTHER INFORMATION

HMIS RATING SYSTEM

Health : 3
Flammability: 0
Reactivity : 0
* = Chronic Health Hazard

NFPA RATING SYSTEM

Health : 3
Flammability : 0
Reactivity : 0
Special Hazard: None

MSDS ABBREVIATIONS: N.A. = Not Applicable
N.D. = Not Determined
HAP = Hazardous Air Pollutant
VOC = Volatile Organic Compound
C = Ceiling Limit
N.E./Not Estab. = Not Established

MSDS PREPARED BY: KJV

REASON FOR REVISION: Change(s) made in Section 1,2,3,5,8,10,12 and 15.

The data in this Material Safety Data Sheet relates only to the specific material designated and does not relate to its use in combination with any other material or process. The data contained is believed to be correct. However, since conditions of use are outside our control it should not be taken as a warranty or representation for which HYDRITE CHEMICAL CO. assumes legal responsibility. This information is provided solely for your consideration, investigation, and verification.
