Olin

MATERIAL SAFETY DATA

OCEAN NETWORK EMERGENCY PHONE 1-800-OLIN-911

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD,29 CFR 1910.1200.THIS PRODUCT MAY BE CONSIDERED TO BE A HAZARDOUS CHEMICAL UNDER THAT STANDARD.(REFER TO THE OSHA CLASSIFICATION IN SEC.I.)THIS INFORMATION IS REQUIRED TO BE DISCLOSED FOR SAFETY IN THE WORKPLACE.THE EXPOSURE TO THE COMMUNITY,IF ANY,IS QUITE DIFFERENT.

I. PRODUCT IDENTIFICATION

REVISION NO : 7
REVISION DATE : 10/31/90
PRODUCT CODE : CPE897049
FILE NUMBER : CPE00396.0001

PRODUCT NAME: TRISODIUM PHOSPHATE, ANHYDROUS, GRANULAR

SYNONYMS: TSP-A, trisodium orthophosphate
CHEMICAL FAMILY: Inorganic phosphate
FORMULA: Na_3PO_4
USE DESCRIPTION: Water softening, washing compounds, food processing
OSHA HAZARD CLASSIFICATION: Corrosive, eye and skin hazard, lung toxin

II. COMPONENT DATA

PRODUCT COMPOSITION

CAS or CHEMICAL NAME: Sodium phosphate, tribasic
CAS NUMBER: 7601-54-9
PERCENTAGE RANGE: 98-100%
HAZARDOUS PER 29 CFR 1910.1200: Yes
EXPOSURE STANDARDS: None Established

CAS or CHEMICAL NAME: Water
CAS NUMBER: 7732-18-5
PERCENTAGE RANGE: 0-2%
HAZARDOUS PER 29 CFR 1910.1200: No
EXPOSURE STANDARDS: None Established

III. PRECAUTIONS FOR SAFE HANDLING AND STORAGE

DO NOT TAKE INTERNALLY. AVOID CONTACT WITH SKIN, EYES AND CLOTHING. UPON CONTACT WITH SKIN OR EYES, WASH OFF WITH WATER.

STORAGE CONDITIONS:
DO NOT STORE AT TEMPERATURES ABOVE: 52 Deg.C (125 Deg.F)
OTHER: Hazardous carbon monoxide can form upon contact with food and beverage products in enclosed spaces, and can cause death.
PRODUCT STABILITY AND COMPATIBILITY
SHELF LIFE LIMITATIONS: 2 years.
INCOMPATIBLE MATERIALS FOR PACKAGING: Aluminum
INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Aluminum

IV. PHYSICAL DATA

APPEARANCE: White, crystalline solid
MELTING POINT: 1340 Deg.C (2444 Deg.F)
BOILING POINT: Not Applicable
DECOMPOSITION TEMPERATURE: No Data
SPECIFIC GRAVITY: 2.577
BULK DENSITY: 28 lbs./cu.ft.
pH @ 25 DEG.C: 12.0 (1% Solution)
VAPOR PRESSURE @ 25 DEG.C: Not Applicable
SOLUBILITY IN WATER: 13.8% at 23.9 Deg.C (75 Deg.F)
VOLATILES, PERCENT BY VOLUME: Not Applicable
EVAPORATION RATE: Not Applicable
VAPOR DENSITY: Not Applicable
MOLECULAR WEIGHT: 163.94
ODOR: None
COEFFICIENT OF OIL/WATER DISTRIBUTION: No Data

V. PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:
RESPIRATORY PROTECTION: Respiratory protection not normally needed. If significant dusting occurs, wear a NIOSH/MSHA approved dust respirator.

VENTILATION: Use local exhaust ventilation.

SKIN PROTECTIVE EQUIPMENT: Wear gloves, boots, chemical goggles, aprons or impermeable suit to avoid skin and eye contact.

OTHER: Emergency eye wash and safety showers must be provided in the immediate work area.

EQUIPMENT SPECIFICATIONS (WHEN APPLICABLE):
RESPIRATOR TYPE: NIOSH/MSHA approved dust/mist respirator
PROTECTIVE CLOTHING TYPE (This includes: gloves, boots, apron, protective suit): Impervious

VI. FIRE AND EXPLOSION HAZARD INFORMATION

FLAMMABILITY DATA:
- FLAMMABLE: No
- COMBUSTIBLE: No
- PYROPHORIC: No
- FLASH POINT: Not Applicable
- AUTOIGNITION TEMPERATURE: Not Applicable
- FLAMMABLE LIMITS AT NORMAL ATMOSPHERIC TEMPERATURE AND PRESSURE (PERCENT VOLUME IN AIR): LEL - Not Applicable UEL - Not Applicable

NFPA RATINGS: Not Established

HMIS RATINGS:
- Health: 2
- Flammability: 0
- Reactivity: 0

EXTINGUISHING MEDIA: Not Applicable-Choose extinguishing media suitable for surrounding materials.

FIRE FIGHTING TECHNIQUES AND COMMENTS:
Use water to cool containers exposed to fire. Contact with reactive metals, e.g., aluminum may result in the generation of flammable hydrogen gas. See Section XI for protective equipment for fire fighting.

VII. REACTIVITY INFORMATION

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:
- TEMPERATURES ABOVE: Product is stable at normal temperatures.
- MECHANICAL SHOCK OR IMPACT: No
- ELECTRICAL (STATIC) DISCHARGE: No
- OTHER: None known
- HAZARDOUS POLYMERIZATION: Will not occur
- INCOMPATIBLE MATERIALS: Aluminum
- HAZARDOUS DECOMPOSITION PRODUCTS: None known; contact with aluminum may produce hydrogen which may explode under certain conditions.

SUMMARY OF REACTIVITY:
- OXIDIZER: No
- PYROPHORIC: No
- ORGANIC PEROXIDE: No
- WATER REACTIVE: No

VIII. FIRST AID

EYES: Immediately flush with large amounts of water for at least 15 minutes, occasionally lifting the upper and lower eyelids. Call a physician at once.

SKIN: Immediately flush with water for 15 minutes. Wash the contaminated skin with soap and water. If irritation develops, call a physician. If clothing comes in contact with the product, the clothing should be laundered before re-use.

INGESTION: Immediately drink large quantities of water. DO NOT Induce vomiting. Call a physician at once. DO NOT give anything by mouth if the person is unconscious or if having convulsions.

INHALATION: If person experiences nausea, headache or dizziness, person should stop work immediately and move to fresh air until these symptoms disappear. If breathing is difficult, administer oxygen, keep the person warm and at rest. Call a physician. In the event that an individual inhales enough vapor to lose consciousness, person should be moved to fresh air at once and a physician should be called immediately. If breathing has stopped, artificial respiration should be given immediately. In all cases, ensure adequate ventilation and provide respiratory protection before the person returns to work.

IX. TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION
Skin and eye contact, inhalation, ingestion

WARNING STATEMENTS AND WARNING PROPERTIES
CORROSIVE TO SKIN, EYES, MUCOUS MEMBRANES AND RESPIRATORY TRACT.
HARMFUL IF INHALED OR SWALLOWED. HARMFUL IF EXPOSED TO SKIN.
HARMFUL IF EXPOSED TO EYES.

HUMAN THRESHOLD RESPONSE DATA
ODOR THRESHOLD: No Data
IRRITATION THRESHOLD: No Data
IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: No IDLH level has been established for this product.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE

INHALATION

ACUTE:

Inhalation of this material is irritating to the nose, mouth, throat, and lungs. It may also cause burns to the respiratory tract which can result in symptoms which may include coughing, wheezing, choking, shortness of breath, chest pain and impairment of lung function. Inhalation of high concentrations can result in permanent lung damage.

CHRONIC:

Exposure may cause similar respiratory tract symptoms as described under acute inhalation effects. In extreme exposure situations, from repeated overexposure to the product, impairment of lung function and lung damage may occur from the potential corrosive action of the product.

SKIN

ACUTE:

Exposure may cause moderate to severe irritation and burns to the area contacted. Symptoms may include redness, swelling (edema), scab formation and destruction of tissue.

CHRONIC:

Repeated dermal exposure may cause severe irritation, dryness and flaking of the skin, and tissue destruction due to the corrosive nature of the product.

EYE

Direct contact with the product causes severe irritation and burns to the eyes potentially resulting in permanent eye damage and impairment of vision.

INGESTION

ACUTE:

Ingestion may result in severe irritation and/or burns of the mouth, throat and stomach and gastroenteritis with any or all of the following symptoms: nausea, vomiting, lethargy, diarrhea, abdominal pain, bleeding or ulceration. Ingestion causes severe damage to the gastrointestinal tract with the potential to cause perforation.

CHRONIC:

No data is available on the chronic ingestion of this product. It would be expected that repeated ingestion would cause tissue damage to the mouth, throat and stomach from the corrosive action of the product.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE:
Respiratory disease, such as asthma or emphysema

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY:
None known or reported

ANIMAL TOXICOLOGY

ACUTE TOXICITY:
Inhalation LC 50: No available data
Dermal LD 50: > 2 g/kg (rabbit)
Oral LD 50: 4.5 g/kg (rat)
Irritation: Causes burns to the skin and eyes.

ACUTE AND CHRONIC TARGET ORGAN TOXICITY:
There are no data available on the acute and chronic toxicity of this product. Based on their irritant and corrosive properties it would be expected to affect those organs directly contacted; i.e., skin, eyes and mucous membranes.

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY:
There are no known or reported effects on reproductive capacity or on development of the fetus from dermal or inhalation exposure.

CARCINOGENICITY:
This product is not known or reported to be carcinogenic by any reference source including IARC, OSHA, NTP, or EPA.

MUTAGENICITY:
This product is not known or reported to be mutagenic. Trisodium phosphate has not been tested in any of the standard mutagenicity assays currently accepted.

AQUATIC TOXICITY:
EPA criterion for phosphates in water is that they should not exceed 50 ug/L in any stream where it enters any lake or reservoir, nor should it exceed 25 ug/L within the lake or reservoir. This is to prevent eutrophication (oxygen and other nutrient deficiency) of the water. The threshold concentration of trisodium phosphate for the immobilization of Daphnia magna in Lake Erie water at 25 degrees Celsius has been found to be lower than 52 mg/1. Toward fish, sodium phosphates are not strongly toxic, the principal effect being a change in pH value. Using turbid water and the mosquito-fish (Gambusia affinis) as a test animal, and a temperature range of 17-22 degrees Celsius and a pH range of 7.4-10.3 the following data has been reported for trisodium phosphate:
TLm in mg/1. 467 (24 hrs.), 467 (48 hrs.), and 151 (96 hrs.)

X. TRANSPORTATION INFORMATION

THIS MATERIAL IS REGULATED AS A DOT HAZARDOUS MATERIAL.

DOT DESCRIPTION FROM THE HAZARDOUS MATERIALS TABLE 49 CFR 172.101:
HAZARDOUS SUBSTANCE SOLID N.O.S. ORM-E SOLID (Sodium phosphate tribasic)
NA 9188

REPORTABLE QUANTITY: 5000 lbs. (Per 49 CFR 172.101, Appendix)

The material described above is subject to the U.S. DOT HAZARDOUS MATERIALS REGULATIONS via the modes and packaging quantities indicated below with the letter "x":

MODE	PACKAGING QUANTITIES	
_x_ Rail	_x_ Bulk	N/A Non-Bulk
_x_ Motor	_x_ Bulk	N/A Non-Bulk
_x_ Water	_x_ Bulk	N/A Non-Bulk
_x_ Air	_x_ Bulk	N/A Non-Bulk

The applicable packaging sections in 49 CFR is 173.1300.

XI. SPILL AND LEAKAGE PROCEDURES

FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC AT 800-424-9300.

REPORTABLE QUANTITY: Per 40 CFR 302.4 as sodium phosphate, tribasic
5000 lbs.

SPILL MITIGATION PROCEDURES:
Evacuate all non-essential personnel. Hazardous concentrations in air may be found in local spill area and immediately downwind. Utilize emergency response personal protective equipment prior to the start of any response. This product may represent an explosion hazard when in contact with aluminum due to the fornation of hydrogen gas. Remove all sources of ignition. Stop source of spill as soon as possible and notify appropriate personnel.

AIR RELEASE: Vapors may be suppressed by the use of water fog. Contain all liquid for treatment or neutralization.

WATER RELEASE: This material is heavier than and soluble in water. Notify all downstream water users of possible contamination. Divert water flow around spill if possible and safe to do so. If unable to divert, cerate an overflow dam to contain material. Remove with a vacuum system or pumping device for treatment and/or disposal. Continue to handle as described in land spill.

LAND SPILL: Create a dike or trench to contain materials. Do not place spill materials back in their original container. Containerize and label all spill materials properly. Decontaminate all clothing and the spill area using strong detergent and flush with large amounts of water. Material may be removed using a vacuum system or network of pumps.

SPILL RESIDUES:

This material may be neutralized for disposal; you are requested to contact OCEAN at 800-OLIN-911 before beginning any such operation.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:

Additional respiratory protection is necessary when a spill or fire involving this product occurs. You are recommended to use a cartridge type NIOSH approved respirator with dust/mist cartridges or a self-contained breathing apparatus (SCBA) positive pressure unit.

Additional protective clothing must be worn to prevent personal contact with this material. Those items include but are not limited to boots, gloves, hard hat, splash-proof goggles, full face shield and impervious clothing, i.e., chemically impermeable suit.

Compatible materials for response to this material are neoprene, chlorinated polyethylene, polyvinyl chloride, butyl rubber, viton, polyvinyl alcohol and saranex.

XII. WASTE DISPOSAL

If this product becomes a waste, it DOES NOT meet the criteria of a hazardous waste as defined under 40 CFR 261, in that it does not exhibit the characteristics of hazardous waste of Subpart C, nor is it listed as a hazardous waste under Subpart D.

As a nonhazardous solid waste it should be disposed of in accordance with local, state, and federal regulations by disposal in a secure chemical landfill.

CARE MUST BE TAKEN TO PREVENT ENVIRONMENTAL CONTAMINATION FROM THE USE OF THIS MATERIAL. THE USER OF THIS MATERIAL HAS THE RESPONSIBILITY TO DISPOSE OF UNUSED MATERIAL, RESIDUES AND CONTAINERS IN COMPLIANCE WITH ALL RELEVANT LOCAL, STATE AND FEDERAL LAWS AND REGULATIONS REGARDING TREATMENT, STORAGE AND DISPOSAL FOR HAZARDOUS AND NONHAZARDOUS WASTES.

XIII. ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:
This substance is listed on the Toxic Substances Control Act inventory.

SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT TITLE III:
HAZARD CATEGORIES, PER 40 CFR 370.2:
HEALTH:
Immediate (Acute)
Delayed (Chronic)
PHYSICAL:
None

EMERGENCY PLANNING AND COMMUNITY RIGHT TO KNOW, PER 40 CFR 355, APP.A:
EXTREMELY HAZARDOUS SUBSTANCE - THRESHOLD PLANNING QUANTITY:
None Established
SUPPLIER NOTIFICATION REQUIREMENTS, PER 40 CFR 372.45:
None Established

XIV. ADDITIONAL INFORMATION

No Additional Information

XV. MAJOR REFERENCES

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5. Casarett, L. and J. Doull, Eds., Toxicology: The Basic Science of Poisons, 3rd Ed., New York: Macmillan Publishing Co., Inc. 1986.

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7. Chemical Degradation and Permeation Database and Selection Guide for Resistant Protective Materials. Austin, TX.
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10. Fire Protection Guide on Hazardous Materials, 9th Ed., National Fire Protection Association, Batterymarch Park, Quincy, MA, 1986.
11. Gosselin, R., et al., Gosselin-Clinical Toxicology of Commercial Products, 5th Ed., Baltimore: Williams and Wilkins, 1984.
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13. Hazardline, Occupational Health Services Inc., New York, NY.
14. IARC Monogram on the Evaluation of Carcinogenic Risk of Chemicals to Man., Geneva: World Health Organization, International Agency for Research on Cancer.
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17. Medline, U.S. National Library of Medicine, Bethesda, MD.
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19. NIOSH Pocket Guide to Chemical Hazards. Washington, DC: U.S. Government Printing Office, 1985.
20. Olin Respiratory Protection Manual.
21. Sax, N. Irving, Dangerous Properties of Hazardous Materials 6th Ed., New York: Van Nostrand Reinhold Company, 1984.
22. Threshold Limit Values and Biological Exposure Indices for 1989-90. Cincinnati, OH: American Conference of Government Industrial Hygienists, 1989.
23. Toxic Substances Control Act Inventory, Washington, DC: U.S. Government Printing Office, 1986.
24. Trisodium Phosphate, Crystalline, Oral LD 50 in Male Wistar Rats, Sperling Laboratories, Arlington, VA, Project # Code: BOM-1, March 14, 1960.

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MATERIAL SAFETY DATA

THE INFORMATION IN THIS MATERIAL SAFETY DATA SHEET SHOULD BE PROVIDED TO ALL WHO WILL USE, HANDLE, STORE, TRANSPORT, OR OTHERWISE BE EXPOSED TO THIS PRODUCT. THIS INFORMATION HAS BEEN PREPARED FOR THE GUIDANCE OF PLANT ENGINEERING, OPERATIONS AND MANAGEMENT AND FOR PERSONS WORKING WITH OR HANDLING THIS PRODUCT. OLIN BELIEVES THIS INFORMATION TO BE RELIABLE AND UP TO DATE AS OF THE DATE OF PUBLICATION, BUT MAKES NO WARRANTY THAT IT IS. ADDITIONALLY, IF THIS MATERIAL SAFETY DATA SHEET IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT OLIN AT THE PHONE NUMBER LISTED BELOW TO MAKE CERTAIN THAT THIS SHEET IS CURRENT.

OLIN MSDS CONTROL GROUP
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Stamford, CT 06904

Phone Number: (203) 356-3449

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