



WTS | First Defense
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WTSCT-318

MATERIAL SAFETY DATA SHEET

SECTION 1: PRODUCT IDENTIFICATION

PRODUCT NAME: **WTSCT-318**

CHEMICAL DESCRIPTION: Aqueous alkaline blend of dispersant, phosphate,
 phosphonate, and azole

PRODUCT CLASS: Cooling Water

VERSION: 10-30-07

SECTION 2: INFORMATION ON INGREDIENTS

Chemical Name	CAS #	Weight %	OSHA PEL	ACGIH TLV
Anionic copolymer*	-----	1-10	None established	None established
Tetrapotassium pyrophosphate (TKPP)	7320-34-5	1-10	None established	None established
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)*	2809-21-4	1-10	None established	None established
Sodium tolyltriazole	64665-57-2	1-10	None established	None established

*present as potassium/sodium salt in formulation

SECTION 3: HAZARDS IDENTIFICATION

*****EMERGENCY OVERVIEW*****

Clear yellow liquid.
 Warning!
 May cause eye irritation and burns.
 May cause skin irritation.
 May be harmful if ingested.
 Mist may cause respiratory tract irritation.

PRIMARY ROUTES OF ENTRY: Eye contact, skin contact, ingestion, and inhalation

TARGET ORGANS: Eye, skin, and mucous membranes

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE: Unknown

POTENTIAL HEALTH EFFECTS:

EYE CONTACT: This product may cause irritation and burns upon contact with the eye with blinking, tearing, redness, swelling, and pain.

SKIN CONTACT: This product may cause irritation upon contact with the skin with redness and pain.

INGESTION: Ingestion of this product may cause irritation of the mucous membranes of the mouth, throat, esophagus, and stomach. This product would be expected to be practically non-toxic if ingested in small quantities (less than a mouthful).

This product contains tetrapotassium pyrophosphate ($K_4P_2O_7$). Ingestion of large quantities of phosphate salts (over 1.0 g pure salt for an adult) may cause an osmotic catharsis resulting in diarrhea and probable abdominal cramps. Larger doses such as 4-8 g pure salt will almost certainly cause these effects in everyone. In healthy individuals, most of the ingested salt will be excreted in the feces with the diarrhea and, thus does not cause any systemic toxicity. Doses greater than 10 g pure salt (82 g product) hypothetically may cause systemic toxicity. Treatment should take into consideration both the anionic and cationic portion of the molecule.

All phosphate salts, except calcium salts, have a hypothetical risk of hypocalcemia, so calcium levels should be monitored. Potassium salts have a hypothetical risk of hyperkalemia which can cause cardiac arrhythmia. In addition to calcium levels, potassium and phosphate levels should be monitored. Also consider continuous EKG monitoring to detect hyperkalemia.

INHALATION: This product is not expected to present an inhalation hazard unless mists are generated and inhaled. Inhalation of product mist may be irritating to the respiratory tract.

SUBCHRONIC, CHRONIC: No information was found for this product. Available information on components follows:

Following repeated exposure (13 weeks) of rats to the product component tetrapotassium pyrophosphate in their food, the following effects were observed at high dose levels: kidney damage with changes in body weight, food consumption, clinical parameters, and organ weights.

Some blood effects have been produced by the product component, HEDP, in chronic feeding studies with rats. A product containing 60% HEDP was administered to beagle dogs at dietary concentrations as high as 10,000 ppm for 90 days with no adverse hematological, biochemical, or histopathological effects.

Numerous publications in the scientific literature discuss the effects of HEDP related to bone resorption in tissue and cell culture, and in animals. The effects of HEDP related to bone mineralization, calcium absorption, and metabolism of calcium and phosphate have also been evaluated.

CARCINOGENICITY:

NTP: No ingredients listed in this section

IARC: No ingredients listed in this section

OSHA: No ingredients listed in this section

SECTION 4: FIRST AID MEASURES

EYE CONTACT: Immediately flush eyes with plenty of water for at least 15 minutes, lifting upper and lower eyelids occasionally to ensure complete rinsing. Seek medical aid immediately.

SKIN CONTACT: Immediately remove contaminated clothing and wash the affected area thoroughly with plenty of soap and water. Seek medical aid if irritation persists.

INGESTION: If swallowed, do NOT induce vomiting. If victim is conscious and alert, give large quantities of water. Seek medical aid immediately. Never give anything by mouth to an unconscious person.

INHALATION: If inhalation occurs, remove victim to fresh air. If breathing stops, give artificial respiration. If breathing is difficult, have a trained medical person administer oxygen. Seek medical aid.

SECTION 5: FIRE-FIGHTING MEASURES

FLASHPOINT: None

This product is not by definition a "flammable liquid" or a "combustible liquid".

LOWER FLAMMABLE LIMIT: Not applicable

UPPER FLAMMABLE LIMIT: Not applicable

AUTO-IGNITION TEMPERATURE: Not available

EXTINGUISHING MEDIA: Use extinguishing media appropriate for the surrounding fire.

FIRE-FIGHTING INSTRUCTIONS: Exercise caution when fighting any chemical fire. A self-contained breathing apparatus and protective clothing are essential.

FIRE & EXPLOSION HAZARDS: Product may emit toxic gases or fumes under fire conditions.

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of potassium, phosphorus, carbon, sodium, nitrogen, and sulfur.

NFPA CODES:

Health = 2

Flammability = 0

Reactivity = 0

Special Hazard = None

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

SECTION 6: ACCIDENTAL RELEASE MEASURES

STEPS TO BE TAKEN IF MATERIAL IS RELEASED OR SPILLED: Wear appropriate personal protective equipment, ventilate the area of the spill, keep unnecessary and unprotected people away, contain the spill, recover as much liquid as possible, collect the residue on an inert absorbent, and place the used absorbent into suitable container. Avoid discharge of liquid to natural waters. Dispose of used absorbent and recovered liquid, if unusable, according to Federal, State, and Local regulations.

SECTION 7: HANDLING AND STORAGE

HANDLING:

Avoid contact with eyes, skin, and clothing.

Avoid breathing vapor or mist.

Use with adequate ventilation.

Wash thoroughly after handling.

Do not take internally.

Keep containers closed when not in use.

Have emergency equipment (for fires, spills, leaks, etc.) readily available.

STORAGE:

Store product in a cool, dry, well-ventilated area away from incompatibles

SECTION 8: EXPOSURE CONTROLS / PERSONAL PROTECTION

EYE/FACE PROTECTION: Chemical splash goggles

SKIN PROTECTION: Chemical resistant gloves and body covering clothing

RESPIRATORY PROTECTION: Respiratory protection is not normally needed. If mists, vapors, or aerosols are generated, an approved respirator is recommended. If respiratory protection is required, institute a complete respiratory protection program including selection, fit testing, training, and maintenance and inspection in accordance with OSHA respiratory protection requirements (29 CFR 1910.134).

ENGINEERING CONTROLS: Use local and/or general exhaust ventilation to maintain airborne concentrations below irritating levels or airborne exposure limits, whichever is lower. Local exhaust is generally preferred because it can control the emission of the contaminant at its source, preventing dispersion of it into the general work area. Please refer to the ACGIH document, *Industrial Ventilation, A Manual of Recommended Practices*, the most recent edition, for details.

WORK PRACTICES: An eye wash station and safety shower should be accessible in the immediate area of use.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

pH: 11.5-12.3

SPECIFIC GRAVITY: 1.135-1.195 g/mL

SOLUBILITY IN WATER: Complete

BOILING POINT: Not available

FREEZING POINT: Not available

VAPOR PRESSURE: Not available

VAPOR DENSITY: Not available

APPEARANCE AND ODOR: Clear, yellow liquid with no odor

SECTION 10: STABILITY AND REACTIVITY

CHEMICAL STABILITY: Stable

HAZARDOUS POLYMERIZATION: Will not occur.

CONDITIONS TO AVOID: Temperature extremes and incompatibles

INCOMPATIBILITIES: Strong oxidizers and acids

DECOMPOSITION PRODUCTS: Thermal decomposition or combustion may produce oxides of potassium, phosphorus, carbon, sodium, nitrogen, and sulfur.

SECTION 11: TOXOLOGICAL INFORMATION

ON INGREDIENTS:

Test Material	Oral LD50 (rat)	Dermal LD50 (rabbit)	Inhalation LC50 (rat)
Anionic copolymer	>1,400 mg/Kg	>560 mg/Kg	Not available
Tetrapotassium pyrophosphate (TKPP)	2,440 mg/Kg	>2,000 mg/Kg	Not available
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)	2,400 mg/Kg (60% solution)	>7,940 mg/Kg (60% solution)	Not available
Sodium tolyltriazole	640-920 mg/Kg (50% solution)	>2,000 mg/Kg	>1,700 mg/L (tolyltriazole)

SECTION 12: ECOLOGICAL INFORMATION

ON PRODUCT:

Environmental Data:

Although the principal problem of phosphates in the environment is not directly related to human health, there is considerable concern about the effects of phosphorus from various sources on water quality. Phosphate is a major cause of the eutrophication process in lakes and ponds.

ON INGREDIENTS:

Test Material	Aquatic Toxicity Data
Anionic copolymer	48 hr LC50 (Daphnia magna): 2,800 mg/L 96 hr LC50 (Rainbow trout): 4,900 mg/L 96 hr LC50 (Bluegill sunfish): >10,000 mg/L
Tetrapotassium pyrophosphate (TKPP)	48 hr EC50 (Daphnia magna): >100 mg/L 96 hr LC50 (Rainbow trout): >100 mg/L
1-Hydroxyethylidene-1,1-diphosphonic acid (HEDP)	48 hr LC50 (Daphnia magna): 527 mg/L 96 hr LC50 (Rainbow trout): 368 mg/L 96 hr LC50 (Bluegill sunfish): 868 mg/L
Sodium tolyltriazole, 50% solution	14 day LC50 (Daphnia magna): 13 mg/L 21 day LC50 (Daphnia magna): 6 mg/L 48 hr LC50 (Daphnia magna): 246 mg/L 96 hr LC50 (Rainbow trout): 24 mg/L 96 hr LC50 (Bluegill sunfish): 191 mg/L

SECTION 13: DISPOSAL

RCRA STATUS: Discarded product, as sold, would not be considered a RCRA Hazardous Waste.

DISPOSAL: Dispose of in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORTATION

DOT CLASSIFICATION:

Proper Shipping Name: Not applicable

Primary Hazard Class/Division: Not restricted

UN Number: Not applicable

Packing Group: Not applicable

Label: None

SECTION 15: REGULATORY INFORMATION

OSHA Hazard Communication Status: Hazardous

TSCA: The ingredients of this product are listed on the Toxic Substances Control Act (TSCA) Chemical Substances Inventory.

CERCLA: EPA Hazardous Substances (40 CFR 302):

Chemical Name

CERCLA Reportable Quantity (RQ)

None

SARA TITLE III (Sections 302, 311, 312, and 313):

Section 302 Extremely Hazardous Substances (40 CFR 355):

Chemical Name

CAS#

RQ

TPQ

None

Section 311 and 312 Health and Physical Hazards:

Immediate

Delayed

Fire

Pressure

Reactivity

yes

no

no

no

no

Section 313 Toxic Chemicals (40 CFR 372):

Chemical Name

CAS Number

Percent by Weight

None

SECTION 16: OTHER INFORMATION

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

Hazard Rating Scale: 0=Minimal; 1=Slight; 2=Moderate; 3=Serious; 4=Severe

The preceding information is accurate to the best of our knowledge. However, since data, safety standards, and government regulations are subject to change, and the conditions of handling and use or misuse are beyond our control, WTS | First Defense makes no warranty, either express or implied, with respect to the completeness or continuing accuracy of the information contained herein, and disclaims all liability for reliance thereon. User should satisfy himself that he has all current data relevant to his particular use.