



Arch Chemicals, Inc.

**MATERIAL  
SAFETY DATA**

FOR ANY EMERGENCY, CALL 24 HOURS/7 DAYS:	1-800-654-6911
FOR ALL TRANSPORTATION ACCIDENTS, CALL CHEMTREC@:	1-800-424-9300
MSDS QUESTIONS & REQUESTS, CALL MSDS CONSULTATION LINE:	1-800-511-MSDS

**PRODUCT NAME: HTH® SPA METAL CONTROL**

**SECTION 1 PRODUCT AND COMPANY IDENTIFICATION**

REVISION DATE: 03-09-2005 SUPERCEDES: 07-21-2004  
MSDS NO: 05138-0001 - 86213

**Manufacturer: Arch Chemicals, Inc. 501 Merritt 7 PO Box 5204 Norwalk, CT 06856-5204**

SYNONYMS: None  
CHEMICAL FAMILY: Phosphonate  
FORMULA: Not Applicable/Mixture  
DESCRIPTION: Control of metals in spa water (Sequestering Agent)  
OSHA HAZARD CLASSIFICATION: Respiratory irritant, corrosive to eyes, eye hazard

SECTION 2 COMPONENT DATA

PRODUCT COMPOSITION

CAS or CHEMICAL NAME: 1-Hydroxyethane-1,1-diphosphonic acid  
CAS NUMBER: 2809-21-4  
PERCENTAGE RANGE: 5-10%  
HAZARDOUS PER 29 CFR 1910.1200: Yes  
EXPOSURE STANDARDS: None Established

CAS or CHEMICAL NAME: Water  
CAS NUMBER: 7732-18-5  
PERCENTAGE RANGE: 90-95%  
HAZARDOUS PER 29 CFR 1910.1200: No  
EXPOSURE STANDARDS: None Established

SECTION 3 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: Store in a cool, dry, well ventilated area.

PRODUCT STABILITY AND COMPATIBILITY

SHELF LIFE LIMITATIONS: No Data

INCOMPATIBLE MATERIALS FOR STORAGE OR TRANSPORT: Oxidizers, bases, amines

SECTION 4 PHYSICAL DATA

APPEARANCE: Clear, light pink liquid  
FREEZING POINT: Approximately 0 Deg.C (32 Deg.F)  
BOILING POINT: > 100 Deg.C (> 212 Deg.F)

DECOMPOSITION TEMPERATURE: Not known  
SPECIFIC GRAVITY: 1.12 - 1.14 @ 20 Deg.C  
BULK DENSITY: Not Applicable  
pH @ 25 Deg.C: 0.5 -2.0  
VAPOR PRESSURE @: No Data  
SOLUBILITY IN WATER: Completely Miscible  
VOLATILES, PERCENT BY VOLUME: Assumed to be approximately 90%  
EVAPORATION RATE: No Data  
VAPOR DENSITY: No Data  
MOLECULAR WEIGHT: Not Applicable/Mixture  
ODOR: Slight  
COEFFICIENT OF OIL/WATER DISTRIBUTION: No Data

#### SECTION 5 PERSONAL PROTECTIVE EQUIPMENT REQUIREMENTS

##### PERSONAL PROTECTION FOR ROUTINE USE OF PRODUCT:

RESPIRATORY PROTECTION: Wear a NIOSH approved respirator when used in confined areas or when mists or vapors are created.

VENTILATION: Ensure adequate ventilation through use of mechanical exhaust in enclosed areas, otherwise provide for good general room ventilation for non-industrial type application.

SKIN AND EYE PROTECTIVE EQUIPMENT: Wear gloves and safety goggles to avoid skin and eye contact. Where industrial use occurs, face shield or full impermeable suit may also be required.

##### EQUIPMENT SPECIFICATIONS:

RESPIRATOR TYPE: Full or half face mask NIOSH approved respirator, depending on the application, equipped with organic vapor acid cartridges.

PROTECTIVE CLOTHING TYPE (This includes: gloves, boots, apron, protective suit): Butyl rubber

#### SECTION 6 FIRE AND EXPLOSION HAZARD INFORMATION

##### FLAMMABILITY DATA:

FLAMMABLE: No  
COMBUSTIBLE: No (Will burn in presence of strong ignition source after water has been removed.)

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: None Established

##### HMIS RATINGS:

Health: 3  
Flammability: 1  
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. Phosphines may be formed after all water has been removed. See Section 11 for protective equipment for fire fighting.

#### SECTION 7 REACTIVITY INFORMATION

CONDITIONS UNDER WHICH THIS PRODUCT MAY BE UNSTABLE:

TEMPERATURES ABOVE: If evaporated to dryness, phosphines may be formed at temperatures above 200 Deg.C  
MECHANICAL SHOCK OR IMPACT: No  
ELECTRICAL (STATIC) DISCHARGE: No  
HAZARDOUS POLYMERIZATION: Will not occur  
INCOMPATIBLE MATERIALS: Strong alkalis, metal salts of sulfides and sulfites, strong oxidizers, amines  
HAZARDOUS DECOMPOSITION PRODUCTS: Phosphines may form after all water has been removed. Carbon monoxide, carbon dioxide and oxides of phosphorus may be formed on combustion.

SUMMARY OF REACTIVITY:

OXIDIZER: No  
PYROPHORIC: No  
ORGANIC PEROXIDE: No  
WATER REACTIVE: No

SECTION 8 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 water to dilute. Consult a physician if symptoms develop.

INHALATION:

Remove person to fresh air. If respiratory irritation develops, call a physician.

SECTION 9 TOXICOLOGY AND HEALTH INFORMATION

ROUTES OF ABSORPTION

Ingestion, skin and eye contact, inhalation

WARNING STATEMENTS AND WARNING PROPERTIES

DO NOT TAKE INTERNALLY. MAY CAUSE EYE BURNS. MAY CAUSE SLIGHT TO MILD SKIN IRRITATION. MAY CAUSE RESPIRATORY TRACT IRRITATION.

HUMAN THRESHOLD RESPONSE DATA

ODOR THRESHOLD: No Data

IRRITATION THRESHOLD: No Data

IMMEDIATELY DANGEROUS TO LIFE OR HEALTH: The IDLH concentration has not been established for this product.

SIGNS, SYMPTOMS, AND EFFECTS OF EXPOSURE

INHALATION

ACUTE:

Inhalation of spray, mist or vapors may cause irritation to the throat, mucous membranes and upper respiratory tract. Any irritation would be expected to be transient with no permanent damage expected.

CHRONIC:

There are no known or reported effects from chronic exposure.

SKIN

ACUTE:

This product is not considered to be a primary skin irritant. However,

it may cause slight to mild irritation from dermal contact. This irritant effect would not be expected to result in permanent damage.

CHRONIC:

There are no known or reported effects from chronic exposure.

EYE

Severe irritation and/or burns consisting of redness, swelling, and mucous discharge to the conjunctiva may occur following eye exposure. Contact may cause impairment of vision and corneal damage.

INGESTION

ACUTE:

Ingestion may cause gastrointestinal discomfort with any or all of the following symptoms: nausea, vomiting, lethargy or diarrhea.

CHRONIC:

There are no known or reported effects from chronic exposure.

MEDICAL CONDITIONS AGGRAVATED BY EXPOSURE

None known or reported

INTERACTIONS WITH OTHER CHEMICALS WHICH ENHANCE TOXICITY

None known or reported

ANIMAL TOXICOLOGY

ACUTE TOXICITY:

Inhalation LC 50: No Data

Dermal LD 50: > 2 g/kg. (rabbit)

Oral LD 50: Believed to be > 5 g/kg. (rat)

Irritation: May cause respiratory irritation.

May cause burns to the eyes.

ACUTE TARGET ORGAN TOXICITY:

May cause burns to eyes. May cause respiratory irritation. This product is not considered to be a primary skin irritant. However, it may cause slight to mild transient irritation.

CHRONIC TARGET ORGAN TOXICITY:

High oral exposure of a similar chemical to laboratory rodents has been shown to alter red and white cell count, decrease hemoglobin concentration and decrease the hematocrit value. This effect to blood occurred when fed a diet containing 3% HEDP-A. No effect was observed at a dietary concentration of 1%.

The hematological effects observed in laboratory studies using rodents would be unlikely to occur in humans because of the high dose required.

REPRODUCTIVE AND DEVELOPMENTAL TOXICITY:

Rats and rabbits were given Hydroxyethylidene-1,1-diphosphonic acid orally during pregnancy. No birth defects were noted in either species. In a study where Hydroxyethylidene-1,1-diphosphonic acid was given to male and female rats in their diet for 2 successive generations, no effects were seen on the ability of the male and female rats to reproduce.

CARCINOGENICITY:

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

MUTAGENICITY:

The active ingredient in this product has been shown to be non-mutagenic in a bacterial mutagenicity assay and in the mouse

lymphoma mutagenicity assay.

AQUATIC TOXICITY:

No data for product. However, the following data is available for the active ingredient (HEDP-A) when it was tested as a 60% concentration:

Daphnia magna, 48 hr. EC50: 527 mg/l  
Bluegill, 96 hr. LC50: 868 mg/l  
Rainbow trout, 96 hr. LC50: 368 mg/l  
Sheepshead minnow, 96 hr. LC50: 2,180 mg/l  
Channel catfish, 96 hr. LC50: 695 mg/l  
Grass Shrimp, 96 hr. LC50: 1,770 mg/l  
Oyster shell deposition, 96 hr. EC50: 89 mg/l  
Mallard Duck, Oral LD50: > 2,510 mg/kg.  
Bobwhite Quail, Oral LD50: > 2,510 mg/kg.

SECTION 10 TRANSPORTATION INFORMATION

This product is regulated as a hazardous material under U.S. DOT 49 CFR 172.101.

Product is not corrosive to skin as defined under 49 CFR 173.137, it is only corrosive to steel or aluminum and is shipping by ground within U.S. as not regulated in transport as permitted under 49 CFR 173.154(d) Exceptions for Class 8 - Materials Corrosive to Aluminum or Steel Only.

U.S. GROUND: Not Regulated in Transport

ICAO/IATA AIR: Corrosive Liquid, Acidic, Organic, N.O.S. (Contains 1-Hydroxyethane-1, 1-Diphosphonic Acid), 8, UN3265, III

IMDG OCEAN: Same As ICAO/IATA Air  
Not a Listed Marine Pollutant

Labels/Placards: LAND - NONE  
AIR/ WATER - CORROSIVE CLASS 8

SECTION 11 SPILL AND LEAKAGE PROCEDURES

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

REPORTABLE QUANTITY: Not Applicable (Per 40 CFR 302.4)

SPILL MITIGATION PROCEDURES:

Evacuate all non-essential personnel. Hazardous concentrations in air may be found in local spill area. 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 and/or disposal as a (potential) hazardous waste.

WATER RELEASE: This material is soluble in water. Notify all downstream users of possible contamination.

LAND SPILL: Create a dike or trench to contain materials. Spill materials may be absorbed using non-flammable materials. Do not place spill materials back in their original containers. Containerize and label all spill materials properly. Decontaminate all clothing and the spill area using detergent and flush with large amounts of water.

SPILL RESIDUES:

Dispose of per guidelines under Section 12, WASTE DISPOSAL.

PERSONAL PROTECTION FOR EMERGENCY SPILL AND FIRE-FIGHTING SITUATIONS:

Response to this material requires the use of a full encapsulated suit and a NIOSH/MSHA approved self-contained breathing apparatus (SCBA).

SECTION 12 WASTE DISPOSAL

If this product becomes a waste, it meets the criteria of a hazardous waste as defined under 40 CFR 261 and would have the following EPA hazardous waste number: D002.

If this product becomes a hazardous waste, it will be a hazardous waste which is subject to the Land Disposal Restrictions under 40 CFR 268 and must be managed accordingly.

As a hazardous liquid waste, it must be disposed of in accordance with local, state and federal regulations in a permitted hazardous waste treatment, storage and disposal facility by treatment.

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.

SECTION 13 ADDITIONAL REGULATORY STATUS INFORMATION

TOXIC SUBSTANCES CONTROL ACT:

The components of this product are listed on the Toxic Substance Control Act inventory.

SUPERFUND AMENDMENT AND REAUTHORIZATION ACT TITLE III:

HAZARD CATEGORIES, PER 40 CFR 370.2:

HEALTH:

Immediate (Acute)

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

SECTION 14 ADDITIONAL INFORMATION

MSDS REVISION STATUS: Section 10 revised

SECTION 15 MAJOR REFERENCES

1. Olin Unpublished Report: Primary Dermal Irritation in Albino Rabbits, Wayplex HEDP-A. MB Research Laboratories, Inc., Spinnerstown, PA., January 28, 1986.
2. Olin Unpublished Report: Eye Irritation in Rabbits, Wayplex HEDP-A. MB Research Laboratories, Inc., Spinnerstown, PA., January 28, 1986.

Additional references are available upon request.

THIS MATERIAL SAFETY DATA SHEET (MSDS) HAS BEEN PREPARED IN COMPLIANCE WITH THE FEDERAL OSHA HAZARD COMMUNICATION STANDARD, 29 CFR 1910.1200. THE INFORMATION IN THIS MSDS 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. ARCH CHEMICALS 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 MSDS IS MORE THAN THREE YEARS OLD, YOU SHOULD CONTACT ARCH CHEMICALS MSDS CONTROL AT THE PHONE NUMBER ON THE FRONT PAGE TO MAKE CERTAIN THAT THIS DOCUMENT IS CURRENT.

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