



# Safety Data Sheet





24 hour Emergency Response No. **+1-800-424-9300**



## SECTION 1: PRODUCT AND COMPANY IDENTIFICATION

<h1>IR-HMDTMPA</h1>	Shandong IRO Water Treatment Co.,Ltd Mushi Town, Tengzhou, Zaozhuang, China IRO phone: +86-532-8027466
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**PRODUCT USE:** Water Treatment Application Formulation

Personal Protection Equipment	GHS Pictograph	DOT Symbol(s)	HMIS (See last page for guide to HMIS)								
 Safety Glasses  Gloves  Dust Respirator		IMO/IMDG Class : 8 UN 3261 Pack Grp : III DOT Label: Corrosive	<table border="1"> <tr><td style="background-color: #000080; color: white;">HEALTH</td><td style="background-color: #000080; color: white;">3</td></tr> <tr><td style="background-color: #FF0000; color: white;">FLAMMABILITY</td><td style="background-color: #FF0000; color: white;">0</td></tr> <tr><td style="background-color: #FFA500; color: white;">PHYSICAL HAZARD</td><td style="background-color: #FFA500; color: white;">1</td></tr> <tr><td style="background-color: #FFFFFF; color: black;">PERSONAL PROTECTION</td><td style="background-color: #FFFFFF; color: black;">E</td></tr> </table>	HEALTH	3	FLAMMABILITY	0	PHYSICAL HAZARD	1	PERSONAL PROTECTION	E
HEALTH	3										
FLAMMABILITY	0										
PHYSICAL HAZARD	1										
PERSONAL PROTECTION	E										

## SECTION 2: HAZARDS IDENTIFICATION

### EMERGENCY OVERVIEW

**WARNING! CAUSES IRRITATION TO SKIN, EYES AND RESPIRATORY TRACT; BURNS IN RESPIRATORY TRACT AND MUCOUS MEMBRANE. HARMFUL IF SWALLOWED OR INHALED.**

GHS CLASSIFICATION Signal Word <b>Warning: CORROSIVE</b>	<u>Prevention Precautionary Statements</u>
	<p><b>P234:</b> Keep only in original container.</p> <p><b>P260:</b> Do not breathe dust.</p> <p><b>P264:</b> Wash hands thoroughly after handling.</p> <p><b>P271</b> - Use only outdoors or in a well-ventilated area.</p> <p><b>P280:</b> Wear protective gloves/eye protection/face protection.</p> <p><b>P301+P330+P331:</b> IF SWALLOWED: rinse mouth. Do NOT induce vomiting.</p> <p><b>P303+P361+P353:</b> IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/ shower.</p> <p><b>P304+P340:</b> IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing.</p> <p><b>P305+P351+P338:</b> IF IN EYES: Rinse cautiously with water for several minutes.</p> <p>Remove contact lenses, if present and easy to do. Continue rinsing.</p> <p><b>P501:</b> Dispose of contents/container through a waste management company authorized by the local government.</p>
<u>GHS Hazard Statements</u>	
<p><b>H290:</b> May be corrosive to metals.</p> <p><b>H303:</b> May be harmful if swallowed.</p> <p><b>H314</b> - Causes severe skin burns and eye damage.</p> <p><b>H332</b> - Harmful if inhaled.</p> <p><b>H334</b> - May cause allergy or asthma symptoms or breathing difficulties if inhaled</p>	

**RESPONSE:** See section 4: **FIRST AID MEASURES**. Also, see below:

- **P202:** Do not handle until all safety precautions have been read and understood.
- **P270:** Do not eat, drink or smoke when using this product.
- **P280:** Wear gloves, eye protection and face protection (as needed to prevent skin and eye contact Wash hands or liquid-contacted skin thoroughly after handling.

**STORAGE:** **P403+235:** Store in a well ventilated place. Keep cool. **P404:** Keep container tightly closed. Use only approved containers. **P405:** Store locked up.

**DISPOSAL:** Dispose of contents/containers to approved disposal site in accordance with local, regional, and/or international regulations.



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## SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS No.	WEIGHT %
HexaMethyleneDiamineTetra (MethylenePhosphonic Acid) (HMDTMPA)	23605-74-5	≥97%

## SECTION 4: FIRST-AID MEASURES

**Inhalation:** When safe to enter area, remove from exposure. Use a bag valve mask or similar device to perform artificial respiration (rescue breathing) if needed. Get medical attention.

**Skin Contact:** Remove contaminated clothing, jewelry and shoes immediately. Wash with soap or mild detergent and large amounts of water until no evidence of chemical remains (at least 15 – 20 minutes). Get medical attention, if needed.

**Eye Contact:** Wash eyes immediately with large amounts of water or normal saline, occasionally lifting upper and lower lids, until no evidence of chemical remains. Get medical attention immediately.

**Ingestion:** Never make an unconscious person vomit or drink fluids. Give water or milk. If vomiting occurs, keep head lower than hips to help prevent aspiration. If person is unconscious, turn head to side. Get medical attention immediately.

## SECTION 5: FIRE-FIGHTING MEASURES

**Fire And Explosion Hazard:** Slight fire hazard. Dust/air mixtures may ignite or explode.

**Hazardous Products of Combustion:** carbon monoxide (CO); carbon dioxide; nitrogen oxides (NO<sub>x</sub>); phosphorus oxides (P<sub>x</sub>O<sub>y</sub>)

**Extinguishing Media:** Regular dry chemical, water spray, foam, or carbon dioxide

**Unusual Fire and Explosion Hazards:** None known

**Fire Fighting Equipment:** Firefighters, and others exposed, wear self-contained breathing apparatus. Equipment should be thoroughly decontaminated after use.

## SECTION 6: ACCIDENTAL RELEASE MEASURES

**Personal Precautions:** Use personal protection recommended in section 8. Specifically a dust mask.

**Environmental Precautions:** Keep out of drains and water courses.

**Methods for Cleaning Up:** Contain large spills with dikes and transfer the material to appropriate containers for reclamation or disposal. Absorb remaining material or small spills with an inert material and then place in a chemical waste container. Flush spill area with large amounts of water.

Refer to Section 13 for disposal information and Sections 14 and 15 for reportable quantity information.

## SECTION 7: HANDLING AND STORAGE

**Handling:** Do not get into eyes, on skin, or on clothing. Avoid breathing vapor or mist. Keep container closed. Use with adequate ventilation. Wash thoroughly after handling.

**Storage:** Product is stable under normal conditions of handling and storage. Emptied containers retain vapor and product residue. Observe all recommended safety precautions until container is cleaned, reconditioned, or destroyed. The reuse of this material's container for non-industrial purposes is



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prohibited and any reuse must be in consideration of the data provided in this safety data sheet.  
**Suitable materials of construction:** glass lining; PVC; polypropylene; glass reinforced plastic (GIP); polyethylene  
**Unsuitable materials of construction:** mild steel; carbon steel; aluminum; other metals  
**General:** Keep in a cool, well-ventilated place.  
Stable under normal conditions of handling and storage.

## SECTION 8: EXPOSURE CONTROLS/PERSONAL PROTECTION EQUIPMENT (PPE)

No specific occupational exposure limit has been established.  
**Eye Protection:** Cause significant eye irritation. Use good industrial practice to avoid eye contact.  
**Body Protection:** Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.  
**Respiratory Protection:** Avoid breathing vapor or mist.  
**Ventilation:** Provide natural or mechanical ventilation to minimize exposure. If practical, use local mechanical exhaust ventilation at sources of air contamination such as processing equipment.

## SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

<b>Physical State:</b>	Solid
<b>Appearance:</b>	White crystalline powder.
<b>Molecular weight</b>	492 (as solid), 720 (as K <sub>6</sub> salt)
<b>pH : (1% solution)</b>	Approximately 2.0
<b>Water solubility:</b>	Slightly soluble at room temperature (<5.0%) Requires warming to improve solubility. Typically diluted to approx. 35% as a K <sub>6</sub> salt

NOTE: the physical data above are typical values and should not be construed as a specification.

## SECTION 10: STABILITY AND REACTIVITY

**Conditions to avoid:** Do not expose to extreme temperatures.  
**Reactivity/Materials to avoid:** Avoid contact with strong oxidizing agents and/or contact with strong acid solution. Attacks many metals.  
**Hazardous decomposition products:** carbon monoxide (CO); carbon dioxide; nitrogen oxides (NO<sub>x</sub>); phosphorus oxides (P<sub>x</sub>O<sub>y</sub>); phosphines

## SECTION 11: TOXICOLOGICAL INFORMATION

*Toxicological information on this product or its components appears in this section when such data is available.*

This product has been tested for toxicity. The assessment below is based on data obtained on this product and on a related product of similar composition.

**Toxicity Data:** 1800 mg/kg oral-mouse LD50

**Local Effects:** Irritant skin, eye corrosive, inhalation ingestion.



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**Acute Toxicity Level:** Moderately toxic: ingestion

**REPRODUCTIVE EFFECTS DATA:**

40 mg/kg intraperitoneal-mouse: TDLo 7 day/s pregnant female continuous;  
200 mg/kg intraperitoneal-mouse: TDLo 7 day/s pregnant female continuous;  
200 mg/kg intraperitoneal-mouse: TDLo 7 day/s pregnant female continuous  
200 mg/kg intraperitoneal-mouse: TDLo 8 day/s pregnant female continuous;  
200 mg/kg subcutaneous-mouse: TDLo 13 day/s pregnant female continuous;  
1,400 mg/kg subcutaneous-mouse: TDLo 11-17 day/s pregnant female continuous;

**Health Effects:**

**Inhalation:** Acute Exposure: Aqueous solutions have been reported to be corrosive to all mucous membranes. Chronic Exposure: No data available.

**Skin Contact:** Acute Exposure: Aqueous solutions may cause burning and itching. Chronic Exposure: Repeated or prolonged exposure to irritants may cause dermatitis.

**Eye Contact:** Acute Exposure: Aqueous solutions may cause burning and itching. Chronic Exposure: Repeated or prolonged exposure to irritants may cause conjunctivitis.

**Ingestion:** Acute Exposure: Aqueous solutions have been reported to be corrosive to all mucous membranes. Chronic Exposure: Administration of 50, 150 or 500 mg/kg/day for 24 months resulted in reduced body weights and changes in liver, spleen and kidney weights or weight ratios in the high dose group. The no-effect level was considered to be 150 mg/kg/day.

## SECTION 12: ECOLOGICAL INFORMATION

**Environmental Toxicity:**

Invertebrates: 48 h, EC50 Water flea (*Daphnia magna*) 527 mg/l  
Fish: 96 h, LC50 Rainbow trout (*Oncorhynchus mykiss*) 368 mg/l  
96 h, LC50 Bluegill sunfish (*Lepomis macrochirus*) 868 mg/l  
Algae: 96 h, EC50 Algae (*Selenastrum capricornutum*) 3 mg/l  
Algal growth inhibition is due to ability of this product to complex materials not to toxicity per se.

**Environmental Fate**

**Biodegradation:** Zahn-Wellens Dissolved Organic Carbon removed 33 % @28 d  
Modified OECD Screening theoretical CO<sub>2</sub> evolution 2 % @70 d  
Modified SCAS Dissolved Organic Carbon removed 90 %  
Closed Bottle BOD 30% /COD 5 % Degrades after acclimatization  
**Bioconcentration Factor (BCF):** Not expected to bioaccumulate.

## SECTION 13: DISPOSAL

**Miscellaneous advice:**

Local, state, provincial, and national disposal regulations may be more or less stringent. Consult your attorney or appropriate regulatory officials for information on such disposal. This product should not be dumped, spilled, rinsed or washed into sewers or public waterways.



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## SECTION 14: TRANSPORT INFORMATION

**United States of America: US DOT**

**Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.  
HexaMethyleneDiamineTetra (MethylenePhosphonic Acid)

**Class 8 Corrosive Substances**

**Subsidiary Risk(s):** No Data Available

**UN Number:** 3261

**Hazchem:** No Data Available

**Pack Group:** III

**Special Provision:** No Data Available

**IMDG Code**

**Proper Shipping Name:** CORROSIVE SOLID, ACIDIC, ORGANIC, N.O.S.  
HexaMethyleneDiamineTetra (MethylenePhosphonic Acid)

**Class 8 Corrosive Substances**

**Subsidiary Risk(s)** No Data Available

**UN Number 3261**

**Hazchem:** No Data Available

**Pack Group:** III

**Special Provision:** No Data Available

**Marine Pollutant:** No

## SECTION 15: REGULATORY INFORMATION

### UNITED STATES

(TSCA 8b): Listed

SECTION 302: No chemicals in this material are subject to reporting requirements of SARA Title III, Section 302.

SECTION 311/312: Acute Health.

SECTION 313: None

CERCLA RQ: None

- California Proposition 65: No
- Chronic Hazard : No
- Fire Hazard : No
- Reactivity Hazard : No
- Sudden Release Hazard : No
- WHMIS Classification : No

### CANADA

WHMIS (Canada): Class E, Corrosive material

HMIS Rating:

Health: 1 (Slight)

Flammability: 0 (Minimal)

Physical Hazard: 1 (Slight)

Personal Protection: B



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## EUROPEAN/INTERNATIONAL REGULATIONS European Labeling in Accordance with EC Directives

EINECS EC Code: 252-156-6

H315: Causes skin irritation.

H318: Causes serious eye damage

H412: Harmful to aquatic life with long lasting effects.

C Corrosive

N Dangerous for the environment

R34 Causes burns

R36 Irritating to eyes

**CALIFORNIA PROPOSITION 65:** This product or its components are not listed on any Proposition 65 lists of carcinogens or reproductive toxicants.

**COMMENTS:** This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and this SDS contains all the information required by the Controlled Products Regulations

## SECTION 16: OTHER INFORMATION

**Further information:** The information provided in this Safety Data Sheet is correct to the best of our knowledge, information and belief at the date of its publication. The information given is designed only as guidance for safe handling, use, processing, storage, transportation, disposal and release and is not to be considered a warranty or quality specification. The information relates only to the specific material designated and may not be valid for such material used in combination with any other materials or in any process, unless specified in the text.

**Information Source and References:** This SDS is prepared by IRO Specialty Chem. USA, Inc. from information supplied by internal references within our company

**Shandong IRO Water Treatment Co. Ltd., Shandong Province, China:** Urges each customer or recipient of this SDS to study it carefully and consult appropriate expertise, as necessary or appropriate, to become aware of and understand the data contained in this SDS and any hazards associated with the product. The information herein is provided in good faith and believed to be accurate as of the effective date shown above. However, no warranty, express or implied, is given.

**Regulatory requirements:** These are subject to change and may differ between various locations. It is the buyer's/user's responsibility to ensure that his activities comply with all federal, state, provincial or local laws. The information presented here pertains only to the product as shipped. Since conditions for use of the product are not under the control of the manufacturer, it is the buyer's/user's duty to determine the conditions necessary for the safe use of this product. Due to the proliferation of sources for information such as manufacturer, specific SDSs, we are not and cannot be responsible for SDSs obtained from any source other than ourselves. If you have obtained an SDS from another source or if you are not sure that the SDS you have is current, please contact us (<https://www.irowater.com>) for the most current version.

**Date of production of SDS: 6/24/2016:**

**Author: CFrayne**





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HAZARDOUS MATERIALS IDENTIFICATION SYSTEM			
<b>HAZARD INDEX</b> 4 = SEVERE HAZARD 3 = SERIOUS HAZARD 2 = MODERATE HAZARD 1 = SLIGHT HAZARD 0 = MINIMAL HAZARD		An asterisk(*) or other designation corresponds to additional information on a data sheet or separate chronic effects notification. Additional Information	
<b>PERSONAL PROTECTION EQUIPMENT</b>			
A Safety Glasses	n Splash Goggles	o Face Shield & Eye Protection	p Gloves
q Boots	r Synthetic Apron	s Full Suit	t Eating Respirator
u Masks (Filter)	w Chemical Vapor Respirator	y Full Face Respirator	z Airline Hood or Mask
<b>PERSONAL PROTECTION INDEX</b>		<b>PERSONAL PROTECTION INDEX</b>	
A		A	
B		B	
C		C	
D		D	
E		E	
F		F	
G		G	
H		H	
I		I	
J		J	
K		K	
X		X Consult your supervisor or S.O.P. for "SPECIAL" handling directions	

Shandong IRO Water Co., Ltd.