







Safety Data Sheet



24 hour Emergency Response No. **+86-532-8027466**

SECTION 1: PRODUCT AND COMPANY IDENTIFICATION											
IR-HPMA		Shandong IRO Water Treatment Co.,Ltd Mushi Town, Tengzhou, Zaozhuang, China IRO phone: +86-532-8027466									
PRODUCT USE: Water Treatment Application Formulation											
Personal Protection Equipment	GHS Pictograph	DOT Symbol(s)	HMIS (See last page for guide to HMIS)								
 Safety Glasses  Protective Apron		IMO/IMDG Class : 8 UN 3265 Pack Grp : III DOT Label: Corrosive	<table border="1"> <tr> <td>HEALTH</td> <td>2</td> </tr> <tr> <td>FLAMMABILITY</td> <td>0</td> </tr> <tr> <td>PHYSICAL HAZARD</td> <td>1</td> </tr> <tr> <td>PERSONAL PROTECTION</td> <td>C</td> </tr> </table>	HEALTH	2	FLAMMABILITY	0	PHYSICAL HAZARD	1	PERSONAL PROTECTION	C
HEALTH	2										
FLAMMABILITY	0										
PHYSICAL HAZARD	1										
PERSONAL PROTECTION	C										

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.	
<p>GHS CLASSIFICATION Signal Word Warning: DANGER</p>  <p>IRRITANT CORROSIVE TO METALS</p> <p>GHS Hazard Statements H290: May be corrosive to metals. H303: May be harmful if swallowed. H314: Causes severe skin burns and eye damage.</p>	<p>Prevention Precautionary Statements P234: Keep only in original container. P260: Do not breathe. P264: Wash hands thoroughly after handling. P280: Wear protective gloves/eye protection/face protection.</p> <p>Response Precautionary Statements 301+P330+P331: IF SWALLOWED: rinse mouth. Do NOT induce vomiting. P303+P361+P353: IF ON SKIN (or hair): Remove/Take off immediately all contaminated clothing. Rinse skin with water/shower. P304+P340: IF INHALED: Remove victim to fresh air and keep at rest in a position comfortable for breathing. P305+P351+P338: IF IN EYES: Rinse cautiously with water for several mins. Remove contact lenses, if present and easy to do. Continue rinsing. P501: Dispose of contents/container through a waste management company authorized by the local government.</p>
<p>RESPONSE: See section 4: FIRST AID MEASURES. Also, see below:</p> <ul style="list-style-type: none"> Do not handle until all safety precautions have been read and understood. Wear gloves, eye protection and face protection (as needed to prevent skin and eye contact) Wash hands or liquid-contacted skin thoroughly after handling. Do not eat, drink or smoke when using this product. 	
<p>STORAGE: Store in a well ventilated place. Keep cool. Store locked up. Keep container tightly closed. Use only approved containers.</p>	
<p>DISPOSAL: Dispose of contents/containers to approved disposal site in accordance with local, regional, and/or international regulations.</p>	



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SECTION 3: COMPOSITION/INFORMATION ON INGREDIENTS

COMPONENT	CAS No.	WEIGHT %
Hydrolyzed Polymaleic Acid	26099-09-02	49-50%
Maleic Acid	110-16-7	<2%
Water	7732-18-5	49-50%

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.

Extinguishing Media: Regular dry chemical, carbon dioxide, water, and regular foam.

Large fires: Use regular foam or flood with fine water spray.

Fire Fighting: Move container from fire area if it can be done without risk. Cool containers with water spray until well after the fire is out. Stay away from the ends of tanks. Use extinguishing agents appropriate for surrounding fire. Do not get water directly on material.

Large Fires: Flood with fine water spray. Reduce vapors with water spray. Cool containers with water spray until well after the fire is out. Apply water from a protected location or from a safe distance. Avoid inhalation of material or combustion by-products. Stay upwind and keep out of low areas.

SECTION 6: ACCIDENTAL RELEASE MEASURES

Occupational Spill: Do not touch spilled material. Stop leak if possible without personal risk.

Small Spills: Absorb with sand or other non-combustible material. Collect spilled material in appropriate container for disposal.

Small Dry Spills: Move containers away from spill to a safe area.

Large Spills: Dike for later disposal. Keep unnecessary people away, isolate hazard area and deny entry.

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: Store in cool, dry, well ventilated area above 0oC. Product is stable under normal conditions of handling and storage.



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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 prohibited and any reuse must be in consideration of the data provided in this material safety data sheet.

Suitable Materials Of Construction: Glass lining, PVC, polypropylene, glass reinforced plastic, and polyethylene.

Unsuitable Materials Of Construction: Mild steel, carbon steel, aluminum, and other metals.

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

Exposure limit(s): Exposure limits are listed below, if they exist.

Exposure Limits: No occupational exposure limits established.

Ventilation: Provide local exhaust ventilation system. Ventilation equipment should be explosion-resistant if explosive concentrations of material are present. Ensure compliance with applicable exposure limits.

Eye Protection: Wear splash resistant safety goggles. Provide an emergency eye wash fountain and quick drench shower in the immediate work area.

Clothing: Wear appropriate chemical resistant clothing.

Protective Material Types: Rubber

Respirator: Under conditions of frequent use or heavy exposure, respiratory protection may be needed. Respiratory protection is ranked in order from minimum to maximum. Consider warning properties before use. Any dust, mist and fume respirator. Any air-purifying respirator with a high-efficiency particulate filter. Any powered, air purifying respirator with a dust, mist and fume filter. Any powered, air-purifying respirator with a high-efficiency particulate filter.

For unknown concentrations or immediately dangerous to life or health: Any supplied-air respirator with full face-piece and operated in a pressure-demand or other positive-pressure mode in combination with a separate escape supply, or any self-contained breathing apparatus with a full face-piece.

SECTION 9: PHYSICAL AND CHEMICAL PROPERTIES

Physical State:	Liquid
Appearance:	Clear, amber
Odor:	Slight
Boiling Point:	212°F, 100°C
Melting point:	< 30°F, < -1°C
Specific gravity:	1.16-1.18
pH :	<2
Vapor Pressure:	23.8 @ 77°F
Vapor Density:	0.8
Decomposition Temperature:	Unknown
Water solubility:	Complete
Viscosity:	Unknown
Corrosion Rate (MPY):	Unknown

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



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SECTION 10: STABILITY AND REACTIVITY

CONDITIONS TO AVOID: None known.

STABILITY: This product is stable under normal conditions.

POLYMERIZATION: Hazardous polymerization will not occur under normal conditions.

HAZARDOUS DECOMPOSITION PRODUCTS: Carbon dioxide, carbon monoxide.

INCOMPATIBLE MATERIALS: Strong alkali materials. Acid reactive salts such as nitrites and sulfites, oxidizing agents.

SECTION 11: TOXICOLOGICAL INFORMATION

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

ACUTE

EYES: Toxicological studies indicate this product to be severely irritating to eyes.

DERMAL LD50: No data available for this product.

ORAL LD50: 15000 mg/kg of body weight in rats (neutralized) (similar product)

INHALATION LC50: No data available for this product

ACUTE EFFECTS FROM OVEREXPOSURE: Product will cause severe irritation of the mucus membranes and skin. Eye damage may include conjunctivitis, swelling and fluid discharge, permanent corneal damage and blindness. Skin and mucous membrane irritation may include severe swelling, redness and scar formation. Overexposure to mists or vapors will cause difficulty in breathing due to irritation and fluid in the lungs, which can result in severe tissue damage or even death.

EYE EFFECTS: This product is expected to be a severe eye irritant based on available toxicological information.

SKIN EFFECTS: This product is moderately irritating to skin.

SENSITIZATION: This product is not expected to be a skin sensitizer.

CHRONIC / SUBCHRONIC:

No significant adverse chronic or subchronic health effects expected. Results from subchronic studies in laboratory animals did not produce any adverse effects.

CARCINOGENICITY:

The components of this product are not listed as a carcinogen by IARC.

The components of this product are not listed as a carcinogen by NTP.

The components of this product are not listed as a carcinogen by OSHA.

MUTAGENICITY: Mutagenicity studies were negative.

REPRODUCTIVE EFFECTS: This product is not expected to have any effect on fertility or reproduction.

TERATOGENIC EFFECTS: This product is not expected to be teratogenic.



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SECTION 12: ECOLOGICAL INFORMATION

ECOTOXICOLOGICAL INFORMATION: This product is expected to have low toxicity to fish ($LC_{50} > 100$ ppm), and aquatic invertebrates ($LC_{50} > 580$ ppm). Suggested ambient pH values for domestic water supplies range between 5.0 - 9.0, for freshwater aquatic life between 6.5 - 9.0, and for marine life between 6.5 - 8.5 (but not more than 0.2 units outside the normally occurring range.)

CHEMICAL FATE INFORMATION: This product is not expected to bioaccumulate in fish or plants. It may accumulate in activated sludge, and to a lesser degree, algae. It is not expected to significantly undergo biodegradation but may undergo photolysis. This product may cause a decrease in the pH values for domestic water supplies.

SECTION 13: DISPOSAL

Environmental precautions: CAUTION: Keep spills and cleaning runoff out of municipal sewers and open bodies of water.

Disposal/Waste Classification: When a decision is made to discard this material as supplied, it does not meet RCRA's characteristic definition of ignitability, corrosivity, or reactivity, and is not listed in 40 CFR 261.33. The toxicity characteristic (TC), however, has not been evaluated by the Toxicity Characteristic Leaching Procedure (TCLP).

For disposal, incinerate or landfill at a permitted facility in accordance with local, state, and federal regulations.

SECTION 14: TRANSPORT INFORMATION

US DOT (DEPARTMENT OF TRANSPORTATION)

PROPER SHIPPING NAME: Corrosive Liquid, Acidic, Organic, N.O.S. (contains Polymaleic acid)

PRIMARY HAZARD CLASS/DIVISION: 8 (Corrosive)

UN/NA NUMBER: UN3265

PACKING GROUP: III

PLACARDS: Corrosive

LABEL: Corrosive

OTHER SHIPPING INFORMATION: DOT Marking: Corrosive liquid, acidic, organic, N.O.S. (contains polymaleic acid) UN3265 Hazardous Substance/RQ: Not applicable

49 STCC Number: No rail shipments of this product.

CANADA TRANSPORT OF DANGEROUS GOODS

PROPER SHIPPING NAME: Corrosive Liquid, Acidic, Organic, N.O.S. (contains Polymaleic acid)

PRIMARY HAZARD CLASS/DIVISION: 8 (Corrosive)

UN/NA NUMBER: UN3265

PACKING GROUP: III

AIR (ICAO/IATA)

PROPER SHIPPING NAME: Corrosive Liquid, Acidic, Organic, N.O.S. (contains Polymaleic acid)

INTERNATIONAL

PROPER SHIPPING NAME: Corrosive Liquid, Acidic, Organic, N.O.S. (contains Polymaleic acid)

Transportation classifications may vary by container volume and may be influenced by regional or country variations in regulations.



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SECTION 15: REGULATORY INFORMATION

UNITED STATES

SARA TITLE III (SUPERFUND AMENDMENTS AND REAUTHORIZATION ACT)

311/312 HAZARD CATEGORIES:

FIRE: NO **PRESSURE GENERATING:** NO **REACTIVITY:** NO **ACUTE:** YES **CHRONIC:** NO

313 REPORTABLE INGREDIENTS: This product or its components are not listed.

302/304 EMERGENCY PLANNING

EMERGENCY PLAN: This product or its components are not listed.

CERCLA (COMPREHENSIVE RESPONSE, COMPENSATION, AND LIABILITY ACT)

CERCLA REGULATORY: Maleic acid (CAS # 110-16-7), a component of this product, has a CERCLA RQ of 5,000 lbs.

TSCA (TOXIC SUBSTANCE CONTROL ACT)

TSCA REGULATORY: TSCA (Toxic Substances Control Act): This product or its components are listed on the TSCA Inventory. This product or its components are not subject to export notification.

OSHA HAZARD COMM. RULE: Product is hazardous by definition of the Hazardous Communication Standard.

CLEAN WATER ACT: This product contains maleic acid, which is listed as a Clean Water Act Section 311 Hazardous Substance and has an RQ of 5,000 lbs.

FIFRA (FEDERAL INSECTICIDE, FUNGICIDE, AND RODENTICIDE ACT): This product is not a US EPA registered pesticide.

CLEAN AIR ACT

40 CFR PART 68---RISK MANAGEMENT FOR CHEMICAL ACCIDENT RELEASE PREVENTION: This product maleic acid, which is listed on the Clean Air Act Section 111 Volatile Organic Compounds list.

CANADA

WHMIS CLASS: E - Corrosive Material; D2B - Skin and respiratory irritant.

CANADA INGREDIENT DISCLOSURE LIST: Maleic acid (CAS# 110-16-4) is listed on Canadian Ingredient Disclosure List.

DOMESTIC SUBSTANCE LIST (INVENTORY): Product intended active ingredients are listed on DSL.

CALIFORNIA PROPOSITION 65: This product does not contain any substance(s) which are defined by the state of California to cause cancer, birth defects, or other reproductive effects.

COMMENTS: This product has been classified in accordance with the hazard criteria of the Controlled Products Regulations and this MSDS

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



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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: 7/06/2015:**

Author: CFrayne

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