







Safety Data Sheet

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



SECTION 1: PRODUCT AND COMPANY IDENTIFICATION											
<h2>IR-AA/MA</h2>		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  Gloves		DOT Proper Shipping Name: Not regulated as a hazardous material	<table border="1"> <tr><td>HEALTH</td><td style="text-align: center;">1</td></tr> <tr><td>FLAMMABILITY</td><td style="text-align: center;">0</td></tr> <tr><td>PHYSICAL HAZARD</td><td style="text-align: center;">0</td></tr> <tr><td>PERSONAL PROTECTION</td><td style="text-align: center;">B</td></tr> </table>	HEALTH	1	FLAMMABILITY	0	PHYSICAL HAZARD	0	PERSONAL PROTECTION	B
HEALTH	1										
FLAMMABILITY	0										
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PERSONAL PROTECTION	B										

SECTION 2: HAZARDS IDENTIFICATION	
EMERGENCY OVERVIEW	
<p>GHS CLASSIFICATION Signal Word Warning: DANGER</p> <div style="text-align: center;">  </div> <p>IRRITANT</p> <p>GHS Hazard Statements H290: May be corrosive to metals. H303: May be harmful if swallowed. H319: Causes serious eye irritation</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 P305+351+338: IF IN EYES: Rinse cautiously with water for several minutes. Remove contact lenses, if present and easy to do. Continue rinsing. P337+313: If eye irritation persists, get medical advice/attention.</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 %
Acrylic acid maleic anhydride copolymer, aka: 2-propenoic acid, polymer with 2,5, furandione (cis-butenedioic anhydride)	52255-49-9 26677-99-6	48 % minimum
Water	7732-18-5	Balance

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: Non-flammable aqueous solution

Extinguishing Media: Use water spray, dry chemical, carbon dioxide, or alcohol-resistant foam. Use extinguishing agent suitable for type of surrounding fire.

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.



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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.

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:

Brown transparent

Density:

1.18 minimum

pH : (1% solution)

pH 2.0-3.0

Free monomer

5.0% maximum

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: strong oxidizing agents

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 oxidizing agents

SECTION 11: TOXICOLOGICAL INFORMATION

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

Primary routes of exposure

Routes of entry for solids and liquids are ingestion and inhalation, but may include eye or skin contact. Routes of entry for gases include inhalation and eye contact. Skin contact may be a route of entry for liquefied gases.

Acute Toxicity/Effects

Oral

Type of value: LD50

Species: rat

Value: > 2,000 mg/kg

Skin

Species: rabbit

Result: non-irritant

Method: OECD Guideline 404

Eye

Species: rabbit

Result: non-irritant

Sensitization

Guinea pig maximization test

Species: guinea pig

Result: Non-sensitizing.

Chronic Toxicity/Effects

Genetic toxicity

Assessment of mutagenicity: The substance was not mutagenic in bacteria. The substance was not mutagenic in mammalian cell culture. The substance was not mutagenic in a test with mammals. The product has not been tested. The statement has been derived from substances/products of a similar structure or composition.

Symptoms of Exposure

No significant symptoms are expected due to the non-classification of the product

ACUTE

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

DERMAL LD50: No data available for this product.



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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.

SECTION 12: ECOLOGICAL INFORMATION

Toxicity

Toxicity to fish

LC50 (96 h) > 500 mg/l, *Leuciscus idus*

Aquatic invertebrates

EC50 (48 h) > 100 mg/l, *Daphnia magna*

Aquatic plants

EC50 (96 h) > 100 mg/l

Microorganisms/Effect on activated sludge

Toxicity to microorganisms

DIN 38412 Part 8 EC10 (18 h): 180 mg/l

The inhibition of the degradation activity of activated sludge is not anticipated when introduced to biological treatment plants in appropriate low concentrations.

Persistence and degradability

Assessment biodegradation and elimination (H₂O): The product can be virtually eliminated from water by abiotic processes e.g. adsorption onto activated sludge.

Elimination information: > 90 % DOC reduction (OECD 303A; ISO 11733; 92/69 EEC,V, C.10)
Easily eliminated from water.

Bioaccumulation potential: Based on its structural properties, the polymer is not biologically available. Accumulation in organisms is not to be expected.

Mobility in soil

Assessment transport between environmental compartments: The substance will not evaporate into the atmosphere from the water surface. Adsorption to solid soil phase is possible.



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Additional information

Sum parameter: Chemical oxygen demand (COD): approx. 850 mg/g.
Other ecotoxicological advice: Do not release untreated into natural waters

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.

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

LAND TRANSPORT (US DOT):

DOT Proper Shipping Name: Not regulated as a hazardous material

MARINE TRANSPORT (IMDG/IMO):

IMDG/IMO Shipping Name: Not regulated as a hazardous material.

SECTION 15: REGULATORY INFORMATION

We are unable to verify that all of the ingredients in this product are compliant with NICNAS regulations. There are several possible reasons why this may occur. If you have any reason to be concerned about this, we suggest you call us on the number above.

This material meets the EPA 'Hazard Categories' defined for SARA Title III Sections 311/312

- Yes No Chronic (delayed) Health Hazard
- Yes No Fire Hazard
- Yes No Sudden Release of Pressure Hazard
- Yes No Reactive Hazard

Regulatory information provided in this SDS was prepared for this product and is to be used only for the product in its present form, if this material is used as a component in another material or altered in any way, the information in this SDS may no longer be applicable. This document was generated for the purpose of distributing health, safety and environmental data.

China. Inventory of Existing Chemical Substances in China (IECSC):

All intentional components are listed on the inventory, are exempt, or are supplier certified



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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 anhydride monomer (CAS # 108-31-6), 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 anhydride free monomer, 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 – Not a hazardous material - 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 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



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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 SDS's, we are not and cannot be responsible for SDS's 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: 5/09/2016:

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 Full Suit	t Earplugs	J	
u Vapor Respirator	w Dust & Vapor Filter	K	
y Full Face Respirator	z Yellow Hood or Mask	X	Consult your supervisor or S.O.P. for "SPECIAL" handling directions