



U.S. ENVIRONMENTAL PROTECTION AGENCY
 Office of Pesticide Programs
 Antimicrobials Division (7510P)
 1200 Pennsylvania Ave., N.W.
 Washington, D.C. 20460

EPA Reg. Number:

86829-1

Date of Issuance:

10/4/21

NOTICE OF PESTICIDE:

Registration
 Reregistration
 (under FIFRA, as amended)

Term of Issuance:

Unconditional

Name of Pesticide Product:

“MacroTech™ Copper Ion Generator”

Name and Address of Registrant (include ZIP Code):

Julie Ownbey
 Senior Regulatory Consultant
 Agent for MacroTech, Inc.
 MacroTech Industries, Inc.
 d/b/a MacroTech, Inc.
 732 NYS Route 9P
 Saratoga Springs, NY 12866

Note: Changes in labeling differing in substance from that accepted in connection with this registration must be submitted to and accepted by the Antimicrobials Division prior to use of the label in commerce. In any correspondence on this product always refer to the above EPA registration number.

On the basis of information furnished by the registrant, the above named pesticide is hereby registered under the Federal Insecticide, Fungicide and Rodenticide Act (FIFRA).

Registration is in no way to be construed as an endorsement or recommendation of this product by the Agency. In order to protect health and the environment, the Administrator, on his motion, may at any time suspend or cancel the registration of a pesticide in accordance with the Act. The acceptance of any name in connection with the registration of a product under this Act is not to be construed as giving the registrant a right to exclusive use of the name or to its use if it has been covered by others.

This product is conditionally registered in accordance with FIFRA section 3(c)(7)(A) provided that you:

1. Submit and/or cite all data required for registration/reregistration/registration review of your product when the Agency requires all registrants of similar products to submit such data.

Signature of Approving Official:

E. Miederhoff
 Eric Miederhoff, Product Manager 31
 Regulatory Management Branch I
 Antimicrobials Division (7510P)
 Office of Pesticide Programs

Date:

10/4/21

You are required to comply with the data requirements described in the DCIs identified below:

a. Copper GDCI-025501-1258

You must comply with all of the data requirements within the established deadlines. If you have questions about the Generic DCI listed above, you may contact the Reevaluation Team Leader (Team 36): <http://www2.epa.gov/pesticide-contacts/contacts-office-pesticide-programsantimicrobial-division>

2. Make the following label changes before you release the product for shipment:

- Revise the EPA Registration Number to read, “EPA Reg. No. 86829-1.”

3. Submit one copy of the revised final printed label for the record before you release the product for shipment.

Should you wish to add/retain a reference to the company’s website on your label, then please be aware that the website becomes labeling under FIFRA and is subject to review by the Agency. See FIFRA section 2(p)(2). If the website is false or misleading, the product would be misbranded and unlawful to sell or distribute under FIFRA section 12(a)(1)(E). 40 CFR 156.10(a)(5) lists examples of statements EPA may consider false or misleading. In addition, regardless of whether a website is referenced on your product’s label, claims made on the website may not substantially differ from those claims approved through the registration process, FIFRA section 12(a)(1)(B). Therefore, should the Agency find or if it is brought to our attention that a website contains false or misleading statements or claims substantially differing from the EPA approved registration, the website will be referred to the EPA’s Office of Enforcement and Assurance.

If these conditions are not complied with, the registration will be subject to cancellation in accordance with FIFRA section 6. Your release for shipment of the product constitutes acceptance of these conditions. A stamped copy of the label is enclosed for your records. Please also note that the record for this product currently contains the following CSFs:

- Basic CSF dated 08/24/2021

If you have any questions, please contact Michael Varco by phone at 703-347-0403, or via email at Varco.Michael@epa.gov.

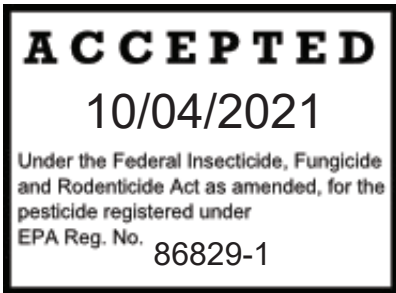
Enclosure: Product Label

MacroTech™ Copper Ion Generator

Copper ions are an effective means for controlling/preventing macrofouling due to mussels, clams, bryozoan and mollusks in general. This product is for use in controlling and preventing Zebra Mussels, Quagga Mussels, Blue Mussels, Barnacles, Asiatic Clams and Bryozoa colonization (fouling) within water conveying equipment and structures (infrastructure) for transporting water to municipal water treatment facilities.

Treated water for use as drinking water must receive additional and separate potable water treatment.

This product is **not** acceptable for treating or disinfecting potable, sewage or grey water.



Active Ingredient:

Copper (as metallic) 99.8%

Other Ingredients 0.2%

Total 100.0%

Treated Water May Contain 2-900 ppb Free Metallic Copper Ions

Keep Out of Reach of Children

CAUTION

See back panel [below] for additional Precautionary Statements.

Net Weight: _____ lb

EPA Reg. No. 86829-R

EPA Est. No.

Distributed by:

MacroTech, Inc.

732 NYS Route 9P

Saratoga Springs, NY 12866

DIRECTIONS FOR USE

It is a violation of Federal law to use this product in a manner inconsistent with its labeling.

When used as directed MacroTech™ Copper Ion Generators provide effective control of zebra mussels, quagga mussels, Blue Mussels, Barnacles, Asiatic clams and Bryozoa in raw water intake systems. Before using this product, refer to your site's engineering, technical and site plans; and read the entire label and MacroTech™ Copper Ion Generator Systems' Installation and Operations Manual.

MacroTech™ Copper Ion Generators have been engineered with an industrial grade electrolytic process for on-site generation of an ionized copper solution (up to 900 ppb copper ions) using only water and electricity. The copper rich solution is injected as near the raw water intake as possible to achieve final dilution to the desired treatment level. **Do not exceed 1 ppm of free metallic copper (ambient plus applied) in treated water.** See Installation and Operations Manual for additional information

MacroTech™ Copper Ion Generators may be used proactively to protect infrastructure from colonization when the presence of foulants (adults, larvae, juvenile or mussel DNA) has been detected. MacroTech™ Copper Ion Generators may be used reactively to treat a colonized infrastructure when the adult/juvenile mussels are present. If a colony is already established, continuously treat raw water with the MacroTech™ Copper Ion Generator to maintain 5-10 ppb treatment level of ionic copper. **Do not exceed 1.0 ppm (1000 ppb) free metallic copper (ambient + applied) in treated water.** After decolonization maintain a continuous preventative dose of approximately 50 ppb in treated water

Storage and Disposal

Do not contaminate potable water, food or feed by storage or disposal.

Storage: Store anode assembly in a cool, dry place away from children.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Pesticide wastes may be hazardous. Improper disposal of excess pesticide, or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.”

Container Handling: Non-refillable container, do not reuse or refill container. Offer (spent electrode assembly) for recycling if available, reconditioning if appropriate, or by other procedures approved by state or local authorities.

Precautionary Statements

Environmental Hazards

This copper product is toxic to fish and aquatic organisms. Unlike most organic pesticides, copper is an element and will not break down in the environment and will therefore accumulate in sediment with repeated applications. Copper is a micronutrient, but its pesticidal application rate exceeds the amount of copper needed as a nutrient.

(Marketing claims may be selected from the following:)

- MacroTech™ Copper Ion Generators are engineered to proactively protect your raw water intake and piping system from macrofouling due to colonization of Zebra Mussels, Quagga Mussels, Blue Mussels, Barnacles, Asiatic Clams and Bryozoa.
- MacroTech Copper Ion Generators use an industrial-grade electrolytic process for on-site generation of an ionic solution utilizing only water and electricity
- MacroTech™ Copper Ion Generators' treatment process does not involve use of liquid chemicals, thereby reducing/ eliminating risks of chemical exposure.
- MacroTech™ Copper Ion Generators do not require modification of your existing water treatment system.
- MacroTech™ Copper Ion Generators' treatment process does not require detoxification of treated water.
- MacroTech™ Copper Ion Generators' treatment process does not involve liquid chemical use in your raw water or negatively impact your existing treatment train.
- MacroTech™ Copper Ion Generators generate bio-available copper ions – Cu⁺² (Cupric Copper) [on site and on demand, thereby eliminating the cost associated with acquiring, transporting, storing and mixing of liquid chemicals].
- MacroTech™ Copper Ion Generators are compact allowing installation in tightly spaced pump houses.
- MacroTech™ Copper Ion Generators' copper ions are an effective molluscicide.
- MacroTech™ Copper Ion Generators' copper ionization treatment process is a cost-effective method for controlling/ preventing/reducing fouling due to mussels, clams, bryozoan, and other macrofouling organisms.
- MacroTech™ Copper Ion Generators' copper ions are effective and control macrofouling organisms at all crucial life growth stages: larvae, veligers, juvenile and adults.
- MacroTech™ Copper Ion Generators' copper ions injected at the intake prevent/alleviate fouling at the intake and downstream of the injection point. Continuous injection of MacroTech™ Copper Ion Generators' copper ions (5-10ppb) results in death and exfoliation of adherent mussels at the injection point and downstream of the injection point.
- MacroTech™ Copper Ion Generators' copper ions interfere with growth and development of biological fouling organisms at all life stages.

- Mussels (foulants) detect the presence of MacroTech™ Copper Ion Generators' copper ions in water and stop feeding, leading to starvation.
- MacroTech™ Copper Ion Generators' copper ions injected at the intake are below EPA's Copper MCL of 1300 ppb.
- The ionized solution injected at the entrance of raw water intake results in up to 900 ppb Cu ions in raw water, enhancing control of algae in subsequent water treatment processes.
- The ionized solution generated by electrolysis and injected into raw water does not interfere with subsequent water treatment processes.
- do not require modification to existing water treatment train.
- MacroTech™ Copper Ion Generators' treatment process is fully compatible with existing water treatment processes.
- Unlike with many liquid chemicals, MacroTech™ Copper Ion Generators have a lower infrastructure cost; no need for storage tanks, liquid chemical mixing apparatus, special piping, metering pumps, fumes hoods and exhausts, among other risk- and safety-mitigation requirements.
- MacroTech™ Copper Ion Generators are PLC (Programmable Logic Controller) automated, constantly and automatically monitoring treatment.
- Molluscicide action is attributed to the ionic copper.
- MacroTech™ Copper Ion Generators dose pace treatment to seamlessly and automatically match treatment level to your raw water flow rate to eliminate the risk of over/under treatment.
- MacroTech™ Copper Ion Generators are a cost-effective antifouling process.
- MacroTech™ Copper Ion Generators: No Liquid Chemicals, No Hassles, No Detox needed.
- MacroTech™ Copper Ion Generators provide protection against mollusk colonization of raw water intakes, piping and infrastructure.

Limited Warranty and Disclaimer

The directions for use of this product are believed to be adequate and must be followed carefully, but it is impossible to eliminate all risks inherently associated with the use of this product. Ineffectiveness or other unintended consequences may result due to factors such as power or utility interruption, incorrect use or application or water stagnation or flow issues resulting from an error in the configuration of the plumbing system, all of which are beyond the control of MacroTech, Inc. To the extent consistent with applicable law, MacroTech, Inc. the manufacturer, or seller of this product shall not be liable for consequential, special or indirect damages resulting from the use, handling, application, storage or disposal of this product or damages in the nature of penalties and the buyer and user waive any right that they may have to such damages. No agent or employee of MacroTech, Inc. or seller is authorized to amend the terms of this warranty disclaimer or product's label or to make presentations or recommendations different from, or inconsistent with, the approved product label. MacroTech™ Copper Ion Generators are warranted for 1 year against defects in manufacturing, workmanship and materials when installed, commissioned and maintained in accordance with the manufacturer's recommendations. Only approved MacroTech™ Copper Ion Generators parts can be used in order not to void both MacroTech™ Copper Ion Generator Systems' Warranty and EPA product registration.

MacroTech™ Copper Ion Generator

Installation and Operations Manual



Treated water for use as drinking water must receive additional and separate potable water treatment.

This product is **not** acceptable for treating or disinfecting potable, sewage or grey water.

Active Ingredient:

Copper (as metallic) 99.8%

Other Ingredients 0.2%

Total 100.0%

Treated Water May Contain 2-900 ppb Free Metallic Copper Ions

Keep Out of Reach of Children

CAUTION

See inside for additional Precautionary Statements.

EPA Reg. No. 86829-R EPA Est. No.

Distributed By:

MacroTech, Inc.

732 NYS Route 9P

Saratoga Springs, New York 12866

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DIRECTIONS FOR USE

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When used as directed, MacroTech™ Copper Ion Generators provide effective control of zebra mussels, quagga mussels, Blue Mussels, Barnacles, Asiatic clams and Bryozoan in raw water intake systems. Before using this product, refer to your site's engineering, technical and site plans; and read the entire label and MacroTech™ Copper Ion Generator System Installation and Operations Manual.

MacroTech™ Copper Ion Generators have been engineered with an industrial-grade electrolysis process for on-site generation of an ionized copper ions solution using only water, salt and electricity. The ionized solution is injected at the entrance of the intake resulting in up to 900 ppb copper ions in raw water. Do not exceed 1 ppm of free metallic copper (ambient plus applied) in treated water, prohibiting mussel, clam and bryozoan fouling. See Installation and Operations Manual for additional information.

MacroTech™ Copper Ion Generators may be used proactively to protect infrastructure from colonization when foulants' presence (adults, larvae, juvenile or mussel DNA) has been detected. MacroTech™ Copper Ion Generators may be used reactively to cure a colonized infrastructure when the adult/juvenile mussels are present. If a colony is already established, continuously treat raw water with the MacroTech™ Copper Ion Generator to maintain 500-900 ppb free metallic copper **Do not exceed 1.0 ppm (1000 ppb) free metallic copper (ambient + applied) in treated water.** After decolonization maintain a continuous preventative dose of approximately 50 ppb in treated water

Storage and Disposal

Do not contaminate potable water, food or feed by storage or disposal.

Storage: Store anode assembly in a cool, dry place away from children.

Pesticide Disposal: Wastes resulting from the use of this product may be disposed of on site or at an approved waste disposal facility. Pesticide wastes may be hazardous. Improper disposal of excess pesticide, spray mixture or rinsate is a violation of Federal Law. If these wastes cannot be disposed of by use according to label instructions, contact your State Pesticide or Environmental Control Agency, or the Hazardous Waste Representative at the nearest EPA Regional Office for guidance.

Container Handling: Non-refillable container, do not reuse or refill container. Offer (spent electrode assembly) for recycling if available, reconditioning if appropriate, or by other procedures approved by state or local authorities.

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Device Components

MacroTech™ Copper Ion Generators consist of two major components:



MacroTech™ Copper Ion Generators (Anode Assembly)

- a. Each MacroTech™ Copper Ion Generator ZMA-R2™ Anode Assembly consists of at least 99.98% pure ETP Copper anodes.
- b. Each MacroTech™ Copper Ion Generator ZMA-R2™ Anode Assembly is designed to optimize water flow for precise and consistent ion generation, eliminate fouling and prolonging anode life, while greatly reducing maintenance requirements.
- c. Each MacroTech™ Copper Ion Generator ZMA-R2™ Anode Assembly can treat up to 15 MGD raw water.
- d. MacroTech™ Copper Ion Generators are compact and have a small footprint
- e. A non-contacting Digital Flow Meter withstands wear and tear due to solids in raw water.
- f. Features 150# ANSI Inlet/Outlet flange connection for easy and fast plumbing connection.

MacroTech ZMatic™ Copper Ion Generator Controller



- a. MacroTech™ Copper Ion Generators' ZMatic™ Controller can be skid- or wall-mounted and is housed in a NEMA-rated corrosion-proof enclosure.
- b. MacroTech™ Copper Ion Generators' ZMatic™ Controller has a Password Protected HMI/PLC with Bright-Lit easy-to-read screen.
- c. MacroTech™ Copper Ion Generators' ZMatic™ Controller allows an operator to input and read parameters, displays operation status and alarms with optional local or remote monitoring, management and communication features.
- d. MacroTech™ Copper Ion Generators' ZMatic™ controllers provide indication of POWER ON and FAULT conditions using LED, NEMA rated indicators.
- e. 'ON/OFF' button prominently located for easy accessibility and will not allow cabinet door to open unless in the 'OFF' position.

Electrical and Plumbing Installation

- a. MacroTech™ Copper Ion Generators are compatible with most plant management systems; refer to your site-specific engineering design document, P&ID drawing, technical specifications and installation instructions accompanying your MacroTech™ Copper Ion Generator.
- b. Install the controller/skid-mounted unit in an indoor, sheltered area away from direct sources of heat, sunlight, moisture, freezing temperatures and/or chemical fumes.
- c. Supply power to the controller using an electrical circuit with sufficient amperage to accommodate the system peak current draw.
- d. Install all electrical power and plumbing in accordance with all local, state and national codes.

Copper Monitoring

- a. Site Copper Testing
After commissioning, perform site copper testing on a weekly basis and in accordance with your site's NPDES permit. Collect sample at the farthest possible location away from the injection point.
- b. Lab Testing for Copper
Lab testing for copper is the only way to accurately measure copper and reveal whether ion levels are within optimal ranges and determine whether system adjustments are needed.
- c. Suggested Copper Target Ranges
Copper levels are not to exceed 900 ppb (900 µg/L) or site-specified level.

MacroTech™ Copper Ion Generator LOG SHEET

	Test Date	Initials	Raw Water flow	Total Amps	Copper Test Taken	Notes / Remarks
1						
2						
3						
4						
5						
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7						
8						
9						
10						
11						
12						
13						
14						
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