



UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
WASHINGTON, DC 20460

OFFICE OF CHEMICAL SAFETY
AND POLLUTION PREVENTION

May 23, 2017

Megan P. Priest
Regulatory Consultant
Enrich Products, Inc.
1018 Penn Avenue
Pittsburgh, PA 15221

Subject: Notification per PRN 98-10 – Clarifying the Organism Name
Product Name: Enrich Products Ionization Systems
EPA Registration Number: 86131-1
Application Date: 03/24/2017
Decision Number: 528820

Dear Ms. Priest:

The Agency is in receipt of your Application for Pesticide Notification under Pesticide Registration Notice (PRN) 98-10 for the above referenced product. The Antimicrobials Division (AD) has conducted a review of this request for its applicability under PRN 98-10 and finds that the action requested falls within the scope of PRN 98-10.

The label submitted with the application has been stamped “Notification” and will be placed in our records.

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 the Federal Insecticide Fungicide and Rodenticide Act and is subject to review by the Agency. 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) list 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. 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 Compliance.

If you have any questions, you may contact Aline Heffernan at 703-347-8602 or via email at heffernan.aline@epa.gov.

Sincerely,

A handwritten signature in black ink, appearing to read "John Hebert".

John Hebert, Chief
Regulatory Management Branch I
Antimicrobials Division (7510P)
Office of Pesticide Programs

Master Label Containing:

Sub label A: Device Label

Enrich Products Ionization Systems (EPI Systems)

Active Ingredients:

Copper (as metallic).....70.00%
Silver (as metallic).....30.00%
Total:.....100.00%

Keep Out Of Reach Of Children

CAUTION

Manufactured by:
Enrich Products, Inc.
1018 Penn Avenue
Pittsburgh, Pa 15221

NOTIFICATION

86131-1

The applicant has certified that no changes, other than those reported to the Agency have been made to the labeling. The Agency acknowledges this notification by letter dated:

EPA Reg. No. (~~pending as EPA File Symbol 86131-R1~~)
EPA Est. No. XXXXX-XX-XXX

05/23/2017

Sub label A: Device Label

<p align="center">Precautionary Statements</p> <p>Do Not Allow Contamination of Water by Cleaning of Equipment or Disposal of Waste</p> <p>Directions for Use It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.</p> <p>In preliminary laboratory tests, Enrich Products Ionization Systems have been shown to inactivate pure cultures of <u>Legionella pneumophila</u> of LDB. However, the ability of this formulation to control the growth of, or inactivate, <u>Legionella pneumophila</u> LDB in operating water systems exposed to ultraviolet light, organic material, other microbial contamination, and aeration, has not been documented in a field setting. These preliminary findings also do not address the problem of long-term preventive maintenance of these water systems. This product is a secondary treatment for potable water, and is unacceptable for disinfecting sewage, raw or grey water.</p>	<p align="center">Enrich Products Ionization Systems</p> <p>Active Ingredients: Copper (as metallic).....70.00% Silver (as metallic).....30.00% Total:.....100.00%</p> <p>Treated Water Contains: 0.28 – 0.80 mg/l Copper; 0.01 – 0.08 mg/l Silver</p> <p>Primary EPA MCL Copper: 1.3 mg/l Silver: N/A</p> <p>Secondary EPA MCL Copper: 1.0 mg/l Silver: 0.1 mg/l</p> <p align="center">Keep Out Of Reach Of Children CAUTION</p> <p>Refer to the product manual for complete directions for use.</p> <p>Manufactured by: Enrich Products, Inc. 1018 Penn Avenue Pittsburgh, Pa 15221</p> <p>EPA Reg. No. (pending as EPA File Symbol 86131-R1</p> <p>EPA Est. No. XXXXX-XX-XXX</p> <p>Net Contents: From 2 – 8, 70% copper and 30% alloy bars</p>	<p>Attention The labeling attached to the ionization equipment is also located in the maintenance department of the facility in which it is installed. It is included in a “EPI Systems_Enrich Products Ionization Installation and Operation Manual”.</p> <p>Enrich Products Ionization Systems</p> <p>Use Site Locations:</p> <p>The Enrich Products Ionization System is a secondary treatment for potable water. Building types include: Hospitals, Nursing Homes, Hotels, Apartments, Condominiums, Office Buildings, Manufacturing Plants, Government Buildings, Commercial Buildings, Grocery Stores, Dental Offices, Event Facilities, Training / Workout facilities, Showering Facilities, Dormitories, Correctional Facilities, Retail Facilities and Amusement Parks.</p>
<p align="center">Storage and Disposal</p> <p>Pesticide Storage: Store the cell in a cool, dry place away from children.</p> <p>Pesticide Disposal: This cell should be returned to and reconditioned by Enrich Products, Inc.</p>		

[Claims:]

The **Enrich Products Ionization (EPI)** system is effective against Legionella pneumophila sp, ATCC33153, in both hot and cold potable water systems. The Enrich system achieves action as a strong biocide through cationic and surface-active emissions of positively charged copper and silver ions.

With more than 45-20 years of ionization experience, Enrich provides a proven solution. The Enrich system is capable of operating in multiple control modes, to best suit the application. The controller, software driven computer, constantly monitors all functional parameters to maintain the precise dose rate of copper and silver ions, ~~providing protection and prevention of recontamination.~~ The dose rate can be monitored locally and remotely over the internet. This protection and prevention of recontamination makes the Enrich system superior.

The Enrich controller receives multiple environmental data inputs and makes immediate compensatory adjustments. In the event of loss of power, all settings are stored in memory so that normal operation will resume once power returns.

The Enrich system controls Legionella pneumophila and requires minimal attention and maintenance.

Enrich equipment is capable of closed and open loop proportional ion level control. This results in precise control of copper and silver ions. Enrich equipment can be installed in circulating or non-circulating cold and hot water systems.

Enrich ionization technology provides a solution for controlling Legionella pneumophila in cold and hot water systems. Legionella pneumophila are killed rather than suppressed providing protection.

The levels of active silver and copper added to the water remain within the levels accepted by the Environmental Protection Agency

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 Enrich Products, Inc.

Enrich Products' customers will develop a flushing protocol and document the operating of the system in accordance with the ionization equipment's specifications.

EPI Systems

Enrich Products Ionization

Installation and Operation Manual



Enrich Products Inc., 1018 Penn Avenue, Pittsburgh, Pa 15221
www.coppersilver.com, info@coppersilver.com

Enrich Products Ionization **Systems**, EPA Reg. No. 86131-**R1**
Original Date 6-19-13; Revised 11-14-13 May 9, 2017
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1. General Directions

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

Before using this product, read the entire label and EPI Systems Enrich Products Ionization Installation and Operation Manual.

The **Enrich Products Ionization (EPI) System** uses a copper/silver ionization process to control Legionella [pneumophila](#) in potable water distribution systems. Ionization creates a biocide as a result of charged copper and silver ions bonding with negatively charged sites on the bacteria cell walls. This electrostatic bond stresses the cell wall, which distorts cell wall permeability, thus reducing the normal intake of life-sustaining nutrients.

The **EPI System** maintains target levels of copper and silver below EPA maximum and secondary contaminant limits in drinking water.

2. Device Components

The Enrich Products Ionization system consists of three components: Controller, Electrode Cell, and Flow Meter.

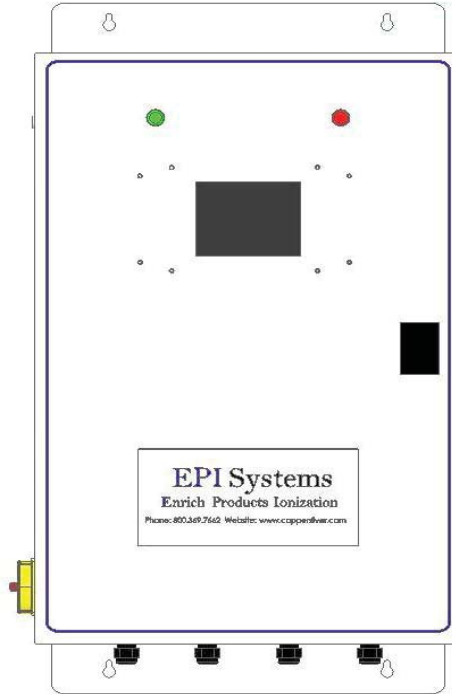
The Controller is a wall-mounted software-based device that supplies an alternating DC voltage to the cell and is capable of operating in multiple output control modes, to improve control of the copper and silver ion output. The Controller applies a direct current across the alloy electrodes inside the Electrode Cell, stimulating the controlled release of ions. All Controller models incorporate a physical lock-out key and an HMI color touchscreen display for monitoring the system's status and making adjustments. All Controller models are capable of 0-100 VDC output, self-adjusting. All controller models contain a 4-20mA input for flow meter connections, an additional 4-20mA input, and 0-5 VDC output connections for Current and Voltage.

The rugged, epoxy coated aluminum Electrode Cell supplied with the Enrich control unit houses copper-silver alloy electrodes. The electrode cell is installed in the water pipe-work and is the source of the copper and silver ions. The metals used in the manufacture of the electrodes are of the highest assayed quality. Enrich supplies electrical quick connects from the Controller to the Electrode Cell in use. This provides easy connection and disconnection, when routine maintenance is required.

The flow meter detects the amount of water consumed when installed in hot or cold water applications. The output current of the Controller is automatically adjusted in direct proportion to the amount of flow registered by the flow meter. This reduces the likelihood of over or under ionization and lessens the frequency of maintenance needed on the Electrode Cell.

3. Enrich Equipment Specs

3.1. Enrich Controller

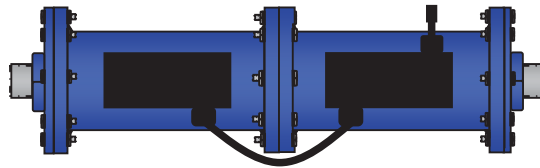


Dimensions: Width: 18.4" x Height: 32" x Depth 7", 54 Lbs.

Electrical Data: 120-240 VAC, 50/60 Hz, single-phase. DC output voltage is 0-100 volts for all models.

<u>Control Unit Model</u>	<u>Max Current Draw</u>	<u>DC Output</u>
CU-EPI-1	1.5 amps	1 amp
CU-EPI-2	3 amps	2 amps
CU-EPI-3	4 amps	3 amps
CU-EPI-4	5 amps	4 amps
CU-EPI-5	6.25 amps	5 amps
CU-EPI-6	7.5 amps	6 amps
CU-EPI-7	8.5 amps	7 amps
CU-EPI-8	10 amps	8 amps
CU-EPI-9	11 amps	9 amps
CU-EPI-10	12.5 amps	10 amps

3.2. Electrode Cell Specs



The Electrode Cell body is machined from a solid core of Aluminum, 6061 T-6 with no welds. The cell body can withstand pressures greater than 200 psi @ 200 F.

It is then coated with Corvel ECA 1626 blue fusion bond epoxy to a minimum thickness of 15 mils. This coating conforms to NSF61 and FDA 175.300. At 150 F at 500 hours there is no loss of adhesion and no blisters. Dielectric strength is >1000 volts/mil.

<u>Electrode Cell Model</u>	<u>Electrode Count</u>	<u>Weight & Dimensions</u>
EC-EPI3"x2	2	14.25"x7.25"; 22 lbs
EC-EPI4"x4	4	16.2"x8.5"; 35 lbs
EC-EPI4"x8	8	28.75"x8.5"; 60 lbs

EC = Electrode Cell, EPI = Enrich Products Ionization, 3" or 4"= Internal Diameter, 2, 4 or 8 = Quantity of Electrodes

All Electrode Cells include:

- 2" SS 316 male NPT threads for pipe connections
- Electrode cell is manufactured from a solid aluminum core with no welds
- Electrode cell is powder coated with NSF 61 certified epoxy
- All wetted non consumable parts conform to NSF 61
- Electrical connections are housed within a machined black acetyl enclosure
- Electrical quick connect is an insulated water tight connector

3.3. Flow Meter

The non (pipe) invasive ultrasonic flow meter is installed onto the cold water supply pipe-work to the water system. Detailed instructions for the installation of the Dynasonics® Ultrasonic Flow Meter are supplied with the meter.

The flow meter detects the amount of water consumed when installed in hot or cold water applications. The output current of the Controller is automatically adjusted in direct proportion to the amount of flow registered by the flow meter.



4. Monitoring

4.1. Site Copper Testing

After commissioning, site copper testing needs to be performed weekly, with at least two samples collected per system. One sample should be collected from the treated water supply, and the second should be from a location far away from the water supply (distal).

4.2. Lab Testing for Copper / Silver levels

Lab testing is the only way to accurately measure silver, reveals whether copper and silver levels are within optimal ranges, and determines whether system adjustments are needed.

4.3. Suggested Target Ranges for Ion levels

Copper: 0.28 – 0.80 mg/l
Silver: 0.01 – 0.08 mg/l

The suggested ranges are recommended throughout the United States regardless of water conditions.

4.4. Site Copper Test Procedures

The following procedures apply to each site tested:

- Step 1: Turn the hot water on at the fixture / site.
- Step 2: Wait until the circulating hot water temperature is achieved and fill a 250 ml sample bottle to the top.
- Step 3: Collect samples in this manner until all samples are collected and take them to your shop.
- Step 4: Unscrew the covers from the glass bottles housed in the copper test kit carrying case.
- Step 5: Rinse the insides of two of the glass bottles.
- Step 6: Fill the two bottles to the 10 ml marked line with the water from one of the sample bottles and set them aside.
- Step 7: Remove one of the copper reagent foil packets.
- Step 8: Cut open the reagent packet along the dotted line.
- Step 9: Pour the entire contents of the reagent packet into only one of the glass bottles.
- Step 10: Screw on the covers to the glass bottles.
- Step 11: Shake the glass bottle that the reagent was poured into for approximately 10 seconds and set aside (make sure not to mix up the two glass bottles).
- Step 12: Remove water from the exterior of the bottle that does not contain the reagent using a non-abrasive cloth.
- Step 13: Remove the Hach® digital colorimeter.
- Step 14: Remove the cover of the colorimeter.
- Step 15: Place the glass bottle that does not contain the reagent sample holder within the test kit.
- Step 16: Rotate the bottle so that the diamond faces towards you.

- Step 17: Place the removable cover over the glass bottle. Note: when aligned correctly the cover will be perpendicular to the test kit and completely cover the glass bottle.
- Step 18: Turn the power on to the digital test kit.
- Step 19: Place the test kit on a level surface.
- Step 20: Press the "O" (zero) and wait for the display to read zero.
- Step 21: Remove the glass bottle from the test kit and set it aside.
- Step 22: Pick up the glass bottle that the reagent packet was poured into hold it up to a light source to verify that the reagent powder dissolved into the water or two minutes has passed.
- Step 23: Remove water from the exterior of the bottle using a non-abrasive cloth.
- Step 24: Place the second glass bottle into the test kit.
- Step 25: Rotate the bottle so that the diamond faces towards you.
- Step 26: Place the removable cover over the glass bottle. Note: when aligned correctly the cover will be perpendicular to the test kit and completely cover the glass bottle.
- Step 27: Press the "check" button.
- Step 28: Record the location and result on the site copper test log record.

Continue steps 5 – 28 until all of the site tests are completed. When complete press the power button to turn off the test kit.

4.5. Laboratory Testing (Copper / Silver ion level measurement)

Laboratory testing to measure the copper and silver ion levels is a significant piece of the water monitoring process. This data provides crucial information to all responsible parties. Since the suggested range for silver ions are extremely low, sophisticated equipment is required and on site monitoring is not always feasible. Both copper and silver ion levels must be measured at a laboratory regularly – monthly. For the first month, samples will be collected for laboratory analysis twice.

4.6. Sample Collection for Laboratory Analysis

Dates when samples will be collected for laboratory analysis will be coordinated and shall be performed monthly.

- Step 1: Turn on the hot water to the fixture / site.
- Step 2: Let the hot water run until circulating temperature is achieved.
- Step 3: Fill the 250 ml bottle with at least 225 ml of hot water.
- Step 4: Mark the date and location on the bottle.
- Step 5: Use one plastic bottle per site, repeating steps 1 – 4.
- Step 6: Use the water in each of the collected plastic bottles to perform your site testing. Note: Rinse the glass site test bottles between each test in a sink.
- Step 7: Record the locations, date and results on the site test log record.

Once the site testing is completed, ship the water remaining in the plastic bottles to the approved lab for copper and silver ion level measurement.

4.7 A Sample Enrich log record follows this page

