i2omax™

Iomax Aqueous Iodine™ Sanitizer

ACTIVE INGREDIENT:
Iodine ................................................. 99.9%
OTHER INGREDIENTS .......................... 0.1%
TOTAL ............................................. 100.0%

NET CONTENTS:
5.2 Gal / 19.68L

KEEP OUT OF REACH OF CHILDREN
DANGER See side panels for Precautionary Statements

FIRST AID
If on Skin: Take off contaminated clothing. Rinse skin immediately with plenty of water for 15-20 minutes. Call a poison control center or doctor for treatment advice.

If in Eyes: Hold eye open and rinse slowly and gently with water for 15-20 minutes. Remove contact lenses, if present, after the first 5 minutes, then continue rinsing eye. Call a poison control center or doctor for treatment advice.

If Inhaled: Move person to fresh air. If person is not breathing, call 911 or an ambulance, then give artificial respiration, preferably mouth-to-mouth if possible. Call a poison control center or doctor for further treatment advice.

If Swallowed: Call a poison control center or doctor immediately for treatment advice. Have person sip a glass of water if able to swallow. Do not induce vomiting unless told to do so by a poison control center or doctor. Do not give anything to an unconscious person. Have the product container or label with you when calling a poison control center or doctor or going for treatment. You may contact poison control center at 1-800-222-1222 for emergency medical treatment information.

Note to Physician: Probable mucosal damage may contraindicate the use of gastric lavage.
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DIRECTIONS FOR USE:
It is a violation of Federal Law to use this product in a manner inconsistent with its labeling.

DIRECTIONS FOR DIRECT INJECTION SYSTEMS: Deliver metered Iomax Aqueous Iodine via Clarion direct injection dosing appliance, installed and calibrated by Clarion authorized personnel, utilizing pre-configured concentrations and application frequency.

DIRECTIONS FOR BATCH SYSTEMS: Produce Iomax Aqueous Iodine via Clarion batch dosing appliance, installed and calibrated by Clarion authorized personnel and discharge into Clarion-approved secondary container. Keep full storage containers sealed when not in use.

GENERAL GUIDELINES: Install Iomax Aqueous Iodine canister into Clarion Aqueous Iodine Dosing Systems System unit as explained in the Clarion Aqueous Iodine Dosing Systems Operating Instructions. Adjustments can be made manually in the touch screen interface to achieve iodine concentrations specified per application. Clarion Aqueous Iodine Dosing Systems can achieve dosing concentrations between 2 and 220 ppm. Iomax Aqueous Iodine canisters may only be changed by certified Clarion technicians.

APPLICATION INFORMATION

DIRECTIONS FOR SANIZING LIVESTOCK DRINKING WATER & NON-POTABLE FARM WATER SYSTEMS Use Clarion Aqueous Iodine Dosing System to achieve a concentration of 6 to 18 ppm within drinking water system. Do not use this product together with other water treatments.

FOR LIVESTOCK BARNS & TRANSPORTATION VEHICLES: Utilize a solution containing 25 ppm titratable iodine.
1. Remove all livestock from premises, trucks, coops and crates.
2. Remove all litter and droppings from floors, walls and surfaces of facilities occupied or traversed by livestock.
3. Empty all troughs, racks, and other feeding and watering appliances.
4. Thoroughly clean all surfaces with soap or detergent and rinse with water.
5. Saturate surfaces with the recommended disinfecting solution for a period of 10 minutes.
6. Ventilate buildings, coops and other closed spaces. Do not house livestock or employ equipment until treatment has been absorbed, set or dried.
7. Thoroughly scrub treated feed racks, troughs, automatic feeders, fountains and waterers with soap or detergent, and rinse with potable water before reuse.

FOR SANITIZING MILKING EQUIPMENT, CLAW SYSTEMS, TEAT CUPS AND DAIRY UTENSILS: Immediately after milking, flush milking equipment and utensils with lukewarm (100°F, 38°C) water to wash out all milk. Take apart milking machines and immerse air hoses, inflations, metal parts (except pulsator) and utensils in a solution containing 25 ppm titratable iodine. Brush all parts thoroughly. Drain completely, rinse with water and allow to air dry. After emptying bulk tanks, flush tanks thoroughly with 100°F (38°C) water to wash out all milk. Allow wash solution to drain, rinse with water and allow rinse water to adequately drain.

RETORT COOLING WATER: Utilize an Iomax Aqueous Iodine solution containing 12.5 – 25 ppm to control slime, and odor causing bacteria. Add prior to starting up operation and as needed thereafter to maintain a titratable iodine reading of 12.5 – 25 ppm in the cooling water.

HVAC UNITS: Use an Iomax Aqueous Iodine solution containing 12.5 – 25 ppm to clean and sanitize cooling coils, heating coils, and drain pans. This sanitization claim does not include use in air ducts. If heavy deposits are present, remove before applying. Allow 10 minutes contact time. Rinse with water.

DEODORIZING: Iomax Aqueous Iodine destroys many odors as it sanitizes and disinfects. For general deodorant applications (garbage pails, refuse containers, landfills, recycling centers, etc.), swab surface to be treated with an Iomax Aqueous Iodine solution containing 200 ppm titratable iodine. Allow treated surface to adequately drain.

SANITIZING GENERAL FARM PREMISIS: For general cleaning and farm premises, use an Iomax Aqueous Iodine solution containing 12.5 ppm titratable iodine. Thoroughly rinse down all surfaces.
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PRECAUTIONARY STATEMENTS – HAZARDS TO HUMANS AND DOMESTIC ANIMALS
DANGER: CORROSIVE. Crystal iodine causes irreversible eye damage and skin burn. May be fatal if swallowed or inhaled. Harmful if absorbed through the skin. Do not get in eyes, on skin or on clothing. Do not breathe dust. When handling crystal iodine, wear protective eyewear (goggles, face shield or safety glasses) and protective clothing (coveralls worn over long-sleeved shirt and long pants, socks, chemical-resistant footwear, and gloves). Wash thoroughly with soap and water after handling and before eating, drinking, chewing gum, using tobacco or using the toilet. Remove and wash contaminated clothing before reuse.

ENVIRONMENTAL HAZARDS
Iodine in crystal form is toxic to fish. Do not discharge effluent containing this product into lakes, streams, ponds, estuaries, oceans or other waters unless in accordance with the requirements of a National Pollutant Discharge Elimination System (NPDES) permit and the permitting authority has been notified in writing prior to discharge. Do not discharge effluent containing this product to sewer systems without previously notifying the local sewage treatment plant authority. For Guidance contact your state water treatment Board or Regional Office of the EPA.

PHYSICAL AND CHEMICAL HAZARDS
Do not store or ship in the presence of ammonia. This product will form explosive nitrogen iodides when contacted with liquid ammonia, aqueous ammonia solutions such as household ammonia or alkaline solution of ammonium salts.

STORAGE AND DISPOSAL
Do not contaminate water, food or feed by storage or disposal Storage: Keep IoMax Aqueous Iodine canister tightly closed. Store in a dry place.
DO NOT STORE IN THE PRESENCE OF AMMONIA.
Pesticide Disposal: Pesticide wastes are acutely 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.
Canister Handling: Refillable container. This container to be refilled with iodine only. Do not reuse this container for any other purpose. Clarion is responsible for cleaning the container before refilling and final disposal. Do not throw expended IoMax Aqueous iodine canisters in the trash. Contact your Clarion rep for collection and disposal.

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Made in the USA

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EPA Est. No. 91282-CA-1
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IoMax™
Clarion Aqueous Iodine Dosing System

Operating Instructions

Direct Injection System

For Service please call:
(1) 714.352.2300
## Release Level

<table>
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<tr>
<th>Date</th>
<th>Issue</th>
<th>Application</th>
<th>Author</th>
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INTRODUCTION

Thank you for choosing the Clarion Aqueous Iodine Dosing System. We know that you will be pleased with your purchase and have many years of reliable service from the system. To achieve the best from the system it is important that customers have a good understanding of all the features that the system offers. The standard features of the system are described in this document and if operators have any questions about the correct method of operation they must consult their authorized representative as required.

Features as Standard

Touch Screen HMI

The Clarion Aqueous Iodine Dosing System instrumentation features the next generation of microprocessors which ensures a user-friendly approach to functions, which enables the operator to confidently go about their business without undue concerns about the day to day running of their system.
It is recommended that the electrodes are wiped at least twice weekly and preferably daily for optimum performance. (Refer Customer Maintenance Manual).

In the case where a filter is fitted it should be cleaned at the end of each day for best results.

Iodine Measuring and Dosing

Two Ion Selective Electrodes (ISE) are incorporated in the system and their function is to measure millivolts in the water line generated by the presence of iodine in the water. The instrument converts the millivolt reading into a ppm digital reading. The instrument is programmed to automatically compare the actual ppm in the water line against the set point entered by the operator and adjust as required.

As the water flow in the line increases or decreases and the iodine in the water line becomes high or is depleted due to iodine coming in contact with dirt and organic matter the electrodes record a drop or rise in millivolts and the instrumentation responds accordingly by adjusting the valve to dose iodine (or reduce dosing) into the line until the desired level has been reached to coincide with the set point.

Iodine does not react with organic matter in the same way as other biocides and as such the reading at the instrument is usually similar to the reading further down the line.

Display Set Points ppm vs Actual ppm

A feature of the Clarion Aqueous Iodine Dosing System is that it has a very user friendly, simple operating system. The digital display on the control panel displays a set point (required iodine level) and actual level. The operator simply presses an “up or down” button located on the instrument panel (after entering password – see relevant section) to set the desired iodine ppm level.

Iodine Canister Level Controls

The Clarion Aqueous Iodine Dosing System actively measures iodine supply. When the cartridge has only 5% remaining, the instrument displays “Canister Empty” message. It is recommended that when canister level reaches 30% Clarion will contact you to schedule cartridge replacement by an Authorized Clarion Service Technician.

Fail Safe Mechanisms

The iodine system uses the highest quality components with fail safe mechanisms incorporated in the design.
• High iodine alarm warns operator of high iodine overdosing situation.
• Low iodine alarm warns operator of a low iodine situation.
• The Clarion Aqueous Iodine Dosing System has the ability to interface with other equipment for complete automation of facility.
• Standard inbuilt modem for customer assistance or unit service as required.

All alarms feature digital display, audio signal and the ability to operate a self powered alarm flashing strobe light if required.

OPTIONS

PC System Interface.

This PC system interface is optional on all Clarion Aqueous Iodine Dosing Systems and provides the highest level of operational sophistication available in a disinfection system. This feature enables an operator to fully interact, and operate the iodine dosing system in the same manner as if present at the instrument itself.

The system also has the ability to further interface with any Windows based PLC controller to further customize or automate the dosing process.

The PC interface also enables operator to data log their dosing and if necessary prepare a Q&A certificate for their customers. It also enables additional tasks to be undertaken as follows:

• Open full mimic instrument panel remotely (e.g. at the office).
• Investigate current remote operation.
• Alter all settings as required.
• Check iodine canister levels.
• Check iodine levels in the main line.
• Check past performance through integral data logger software.
• Conduct system audit via data logger information.
• Check correct valve/pump/pressure operation.
• A comprehensive diagnostics program is incorporated within the Clarion Water software for use by Clarion Water staff.

Modem - Dial in Option.

This standard feature enables an operator or Clarion Water staff to interact fully with the Clarion Aqueous Iodine Dosing System anywhere in the country. The system dosing requirements can still be managed from remote locations.
All the normal above software is featured and operator can fully manage the system remotely as with the standard hard wiring.

**Q/A Certificate.**

The easy to follow Clarion Aqueous Iodine Dosing System software enables an operator to print out a Q/A certificate with actual dosing levels data attachment, showing all the disinfection ppm levels for a given period. Graph print out is also available.

This certificate may accompany the goods to final destination.

**Custom Designed Interface.**

In larger facilities the Clarion Aqueous Iodine Dosing System can interface with other computer controlled equipment and interface with PLC controllers automatically. The dosing system will shut down solenoid valves or pumps when iodine levels are too high or too low and may take evasive action automatically as required as it has temperature and pressure sensors built into as standard.

**IoMax IODINE CRYSTALS**

The IoMax Recharge (patented) 99.9% pure iodine crystals have been specifically manufactured by Clarion Water. Limited to operate in the Clarion Aqueous Iodine Dosing System.

Iodine crystals from other sources have vastly different characteristics and are not suitable for use in the system.

If iodine crystals from another source are used the Clarion Aqueous Iodine Dosing System will fail to operate correctly.

The use of other forms of iodine crystals also constitutes a breach of license agreement, warranty and service agreement as they could seriously damage the Clarion Aqueous Iodine Dosing System and electrodes.

Iodine crystals from other sources may not be registered with the Statutory Authorities and consequently illegal to use with this system.
The Material Safety Data Sheet contained in this document must be observed at all time by operators when running the Clarion Aqueous Iodine Dosing System or when your authorized agent handles IoMax iodine crystals cartridges or open iodine canisters.

The Clarion Aqueous Iodine Dosing System is a precision piece of equipment, which must be regularly serviced in accordance with the Clarion Water. Limited. authorized service manual.

Only Clarion Authorized Service Technicians are permitted to install and service the Clarion Aqueous Iodine Dosing System. A service cycle time is negotiated with your authorized representative at the time of purchase. The servicing of the dosing system must be carried out with due care and diligence as certain aspects to the procedure can be hazardous and cause serious injury.

Your authorized service representative staff must to always wear the relevant personal protective equipment as outlined in the MSDS. It is recommended that the dosing system area be kept well ventilated at all times.

**INSTRUMENT OPERATIONS AND COMMANDS**

![Screen Screenshot](image_url)

**ADJUST TARGET PPM**
Target PPM can be adjusted by pressing up or down on the arrows. A Clarion Authorized Service Technician will provide the recommended PPM based upon water quality samples and trials performed at time of system commissioning.

FIELD MODE

Field Mode allows for "set and forget" operation. It must be configured by a Clarion Authorized Service Technician

STOP

"Press to STOP" button ceases all dosing and dispensing immediately.

START MANUAL DOSING & DISPENSING

Manual Dosing allows the user to fill to and dispense from a tank rather than directly injecting into a water piping. A Clarion Authorized Service Technician will configure these options as required.
The Clarion Aqueous Iodine Dosing System controls system monitors the status of all critical system components and will report the status as Green or Red for the following:

- Tank Fill Valve – Green means tank fill valve is open.
- Tank Water Level Minimum – Green means tank is filled to above minimum level for dosing.
- Tank Full – Green means tank is full.
- Pump – Green means pump is operational.
- Iodine Dosing – Green means the system is currently dosing iodine.
- System Pressure - Green means system pressure is within upper and lower limits.

The Clarion Aqueous Iodine Dosing System controls system also provides real time monitoring on iodine supply, pressure, water temperature and flow, which can be viewed on the status screen, shown above.

**CANISTER REPLACEMENT**

For instructions on how to replace canisters, please see Direct Injection System Canister Replacement Manual or call (1) 714.352.2300 to setup a service appointment for an Authorized Clarion Technical Representative.