

# envirolyte<sup>®</sup>

INNOVATING FOR A BETTER WORLD



## Product Catalogue

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# About Enviolyte



**Enviolyte systems are technically sophisticated and ensure consistent quality of the fluids produced. Yet they are extremely easy to operate and require only usual (table) salt and water, offering an environment-friendly solution to address various markets, geography and applications. With our Enviolyte systems the customers can generate custom-made salubrious antimicrobial solutions on-site and on-demand, getting volumes and concentrations required.**

Enviolyte Industries International Ltd. was incorporated under the laws of Republic of Estonia with the purpose of conducting research, development and design as well as production and sales of various products based on the principles of the use of double-chamber, diaphragmatic electrolysis of aqueous solutions. The company is owned by its management.

Enviolyte Industries International Ltd has become a life sciences company focused on developing and commercializing proprietary products under the registered trade names Enviolyte and Enviolyte ECO that safely, effectively and naturally kill contagious pathogens. Enviolyte technology provides a solution to a broad range of markets that depend upon controlling contamination, including food safety in retail and foodservice, livestock, agriculture and aquaculture as well medical device disinfection, wound therapy and hospitality.

Enviolyte technology is designed to limit the spread of infectious disease, including major public health threats of M. tuberculosis, MRSA, E.coli, Norovirus, Avian Influenza, HIV, Covid-19, Polio Virus, Helicobacter pylori and Legionella.

The necessary steps are being taken to protect

IPR with regard to innovative power supplies and PCB of the Enviolyte units. Enviolyte is the registered trademark of the Enviolyte Group of companies.

In Enviolyte we have developed a unique group of companies which is focused on the water purification, sterilization and disinfecting industries.

Today Enviolyte is fully integrated group of companies controlling all aspects of invention, development, manufacture and distribution of the products. The main components of the Enviolyte Group are Enviolyte Industries International Ltd. (Estonia) - OEM and main operating company, also responsible for technical innovation and scientific support and regional operating companies in Europe, North America, Mideast, Central Asia, Far East, China, Australia and New Zealand which conduct daily distribution business on the respectful territories and provide servicing, warranties and after sales support. Together with these dedicated specialist companies, we have built channels to market and service clients from the largest major corporations to the smallest domestic households, offering advice on all aspects of water purification, sterilization and disinfecting.

**Enviolyte Industries International Ltd. has registered in its own name all patents connected with the particular design of diaphragmatic cell, multiple electrodes cell, and multiple cell plant.**



# What does the Enviolyte technology do?



**Enviolyte Electrolyzed Water (EW, EOW or EO, also known as electrolyzed oxidizing water or ionized water solution)** technology is the process of passing ordinary water or a diluted saline solution through a specially designed electrolytic cell in order to modify its functional properties without adding reagents. Enviolyte solutions (Anolyte and Catholyte) have demonstrated the ability to:

- **destroy microorganisms such as Botrytis fungus, Salmonella, E.coli, Listeria and anthrax spores**
- **purify water**
- **clean and degrease**

Enviolyte designs, markets, assembles and sells equipment that can produce two basic types of fluids:

**1. Anolyte** solutions are strong oxidizing solutions with a pH range of 2.5 – 8.5 and an Oxidation-Reduction Potential (ORP) of +600 to +1200mV. Anolyte can potentially be used as a broad spectrum germicidal agent to kill all types of microorganisms including viruses, fungi and bacteria.

**2. Catholyte** solutions are antioxidizing, mild alkaline solutions with a pH range of 10.5 to 12.0 and ORP of -600 to -900mV. Catholyte solutions can potentially be used as degreasers or detergents.

**Based on extensive research, both Anolyte and Catholyte solutions:**

- are environmentally friendly
- are non-toxic to both humans and animals
- do not require special handling
- are powerful biocides
- can be safely disposed of in sewage systems
- are fast-acting
- can be used at all stages of disinfection and cleaning
- at recommended concentrations, do not bleach surfaces or materials

- can be applied in liquid, ice or aerosol (fog) form
- are hypoallergenic
- yield by-products that are non-toxic, environmentally friendly and leave no synthetic chemical residue
- can be generated on-site, thus eliminating handling and storage of chemicals
- can be produced on-site from tap water and salt in required quantities and concentrations of active ingredients, pH and salinity (mineralization)

Anolyte contains among other things Hypochlorous Acid that is a highly potent bactericide. Bacteria such as Escherichia coli when exposed to Hypochlorous Acid lose viability in less than 100ms. Escherichia coli is a major cause of food and water-borne infections in humans.

In addition to killing bacteria Anolyte is effective in breaking down Biofilms which protect the bacteria from the action of the Hypochlorous acid.

**As a hard-surface disinfectant Anolyte application on a daily basis for more than a decade has demonstrated that microorganisms do not develop immunity to Anolyte over time. This makes it possible to apply Enviolyte equipment in a number of areas directly related to personal health and safety.**

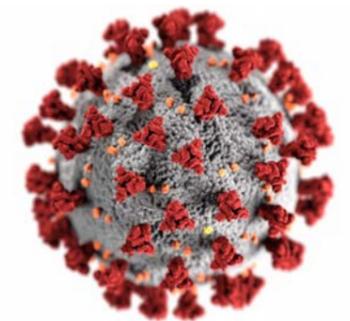


Illustration of a SARS-CoV-2 virion. Severe acute respiratory syndrome coronavirus 2 (SARS CoV 2) is the virus that causes COVID-19 (coronavirus disease 2019), the respiratory illness responsible for the COVID-19 pandemic.

# How does the Enviolyte system work?



At the core of the Enviolyte Technology are the patented diaphragmatic cells that have been designed using innovative and unique technology to effectively deliver electrolyzed water solutions (Anolyte and Catholyte) using a 1-4% water solution of NaCl as initial material.

Unlike other electrolytic cells, here a diaphragm separates the Anolyte and Catholyte solutions that are generated respectively at the anode and cathode chambers of the cell. This prevents the two streams from mixing and inter-reacting to form a simple sodium hypochlorite solution as is the case with other electrolytic cells commercially available now.

The invention of the double-chamber diaphragmatic electrolyzer (the basic element of all Enviolyte products) marked a breakthrough in disinfection, sterilization and water purification technology.

Similar electrolyzers have been known before: EW technology was first developed in the late 70's in conjunction with the Russian Institute for Medical and Scientific Research and earlier models of EW products were sold throughout the former Soviet Union, generally for disinfecting water and sterilization in hospitals.

However, Enviolyte inventions made it possible to considerably enlarge their commercial application and gave Enviolyte Industries International Ltd the unquestionable advantage over the existing competitors. In this respect, the technology of diaphragmatic electrolysis (EW) is unique to the Enviolyte group of companies and it is patented worldwide.

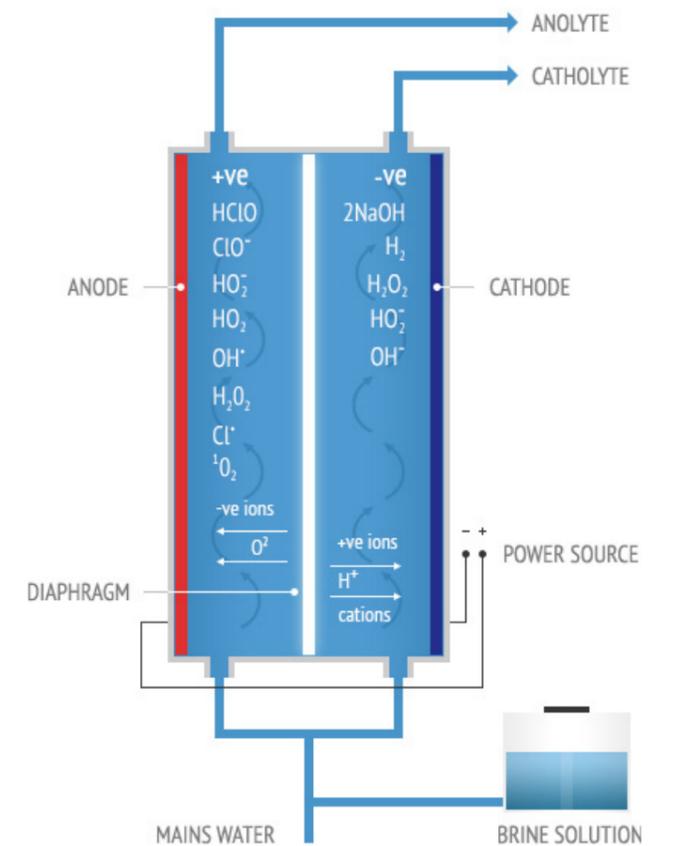
Enviolyte cells are manufactured with variable Anolyte output capacity ranging from 20LPH to 1200LPH of Anolyte per cell. Using a combination of cells allows to manufacture Enviolyte units with an output capacity of up to 6000LPH.

Anolyte can be either dosed directly into your system or alternatively into a buffer tank, if the demand is variable, then by using an ORP or FAC

sensor, a controller & dosing pump, the biological load of your system can be managed.

The only requirements for our systems are a supply of salt, water and electricity. The generators can be controlled by a PLC with an easy to operate HMI (Human machine interface) allowing the end user to accurately control the pH value of Anolyte and ensure the correct dosing levels for a particular application.

**Average cost for generating 1000 litres of Anolyte in a number of European and North American Countries is 1 Euro, making this fluid a very cost-effective alternative to many presently used chemicals.**



Drawing of Enviolyte operational principle

# Applications



We have identified the following industries for early stage sales and marketing focus:

- dairy production and processing
- meat, fish and poultry processing
- clean in place ("CIP") for food and beverage processing
- agricultural grow-out and processing
- livestock industries and livestock breeding
- drinking water disinfection and waste water treatment
- ballast water treatment
- aquaculture
- medical and health care
- oil & gas industry
- cooling towers and cooling system water treatment
- swimming pools water disinfection ("Primary Markets")

Envirolyte has been focused on these markets because we believe that for each of these markets we have a competitive advantage, a leading strategic industry partner, or we can provide an attractive value-added proposition.

### Brew and beverage industry

Envirolyte disinfectant generators have a number of applications in this industry. They include disinfecting water supplies, tunnel pasteurizers, bottle washing and cleaning of conveyor and transport systems. The use of an Envirolyte generator can result in significant savings as it allows processes to be run at lower temperatures and the water to be recycled.



### Cooling towers and ponds

Anolyte produced by our on-site generators effectively controls Legionella and other bacteria maintaining a safe and healthy environment. The powerful disinfecting solution also destroys biofilm yet is no more corrosive than tap water.

### Wastewater treatment

The addition of Anolyte to waste water can reduce bacterial count to safe levels without contaminating the environment.



### Food and dairy industry

Due to its non-toxicity Anolyte is approved for use in the food industry for disinfection in a wide range of areas including preparation surfaces, pipes, transport systems and packaging.

**Meat industry**

Bacterial contamination of meat is an ever present problem. Envirolyte can help with its powerful Anolyte solution ideally suited to surface cleaning of preparation areas, packing cases and transport systems yet without the problems associated with traditional chlorine based chemicals.



**Fruit and vegetable washing**

Anolyte is a highly effective disinfection agent for washing of Fruit and Vegetables both whole and pre-cut, increasing the shelf life and providing a safer product for consumers.

**Horticulture**

Misting or spraying glasshouses with Anolyte offers effective bacterial & algal control. Disinfecting the irrigation water improves the growth of vegetation & vegetables with resistance to weeds, smuts, fungi various parasites & diseases, provides superior quality products & higher crop yield without additional use of fertilizers.



**Drinking water**

Anolyte is approved for use as a disinfecting agent for drinking water making it safe for consumption without the unpleasant smell and taste associated with conventional chlorine based water treatment.

**Swimming pools**

On-site Anolyte generators ensure a safe swimming environment without the unpleasant smell or eye stinging effects of traditional chlorine based treatments. Anolyte is safer for staff as they do not have to handle potentially dangerous alkaline or acidic chemicals.



**Hotels and public facilities**

Legionella is a major health problem in facilities having large water systems where parts are not always in use such as hotel rooms in low season. The unused areas can result in the build-up of Legionella or other health endangering bacteria within the water system. The addition of an Anolyte generator to hot & cold water systems can prevent the need for costly cold & high temperature flushing.

**Medical facilities**

Due to its non-toxicity & non-corrosive nature it is ideal for surface sterilization or ambient air disinfection through misting for medical facilities to help prevent bacterial infection, viruses & pathogens. Cold sterilization of medical instruments, or surface cleaning of walls, furniture and floors, eliminates/reduces other chemical usage. Suitable for use in laundries to provide linen disinfection.



**Fish processing**

Anolyte has been shown to be highly effective in destroying bacteria such as Vibrio and E. coli making a safer product for consumers.

**Livestock industries and livestock breeding**

Provides general disinfection, surface and equipment cleaning and misting medium for aerobic and anaerobic bacteria control. Promotes fodder assimilation, general health as a drinking water additive (reduces mortality). Ensures skin parasitic diseases control.



**Agriculture**

The use of Anolyte in agriculture can result in increased yields and improved animal husbandry by destroying bacteria in animal drinking water and stock pens.

**Veterinary**

Increases vitality and resistance, improves fertility. Residue free treatment of mastitis, diarrhea and other infections. Better feedstuff utilization. Reduces tension. Enhances growth and yields. Effectively controls and cures the most serious diseases.



**Oil and gas industries**

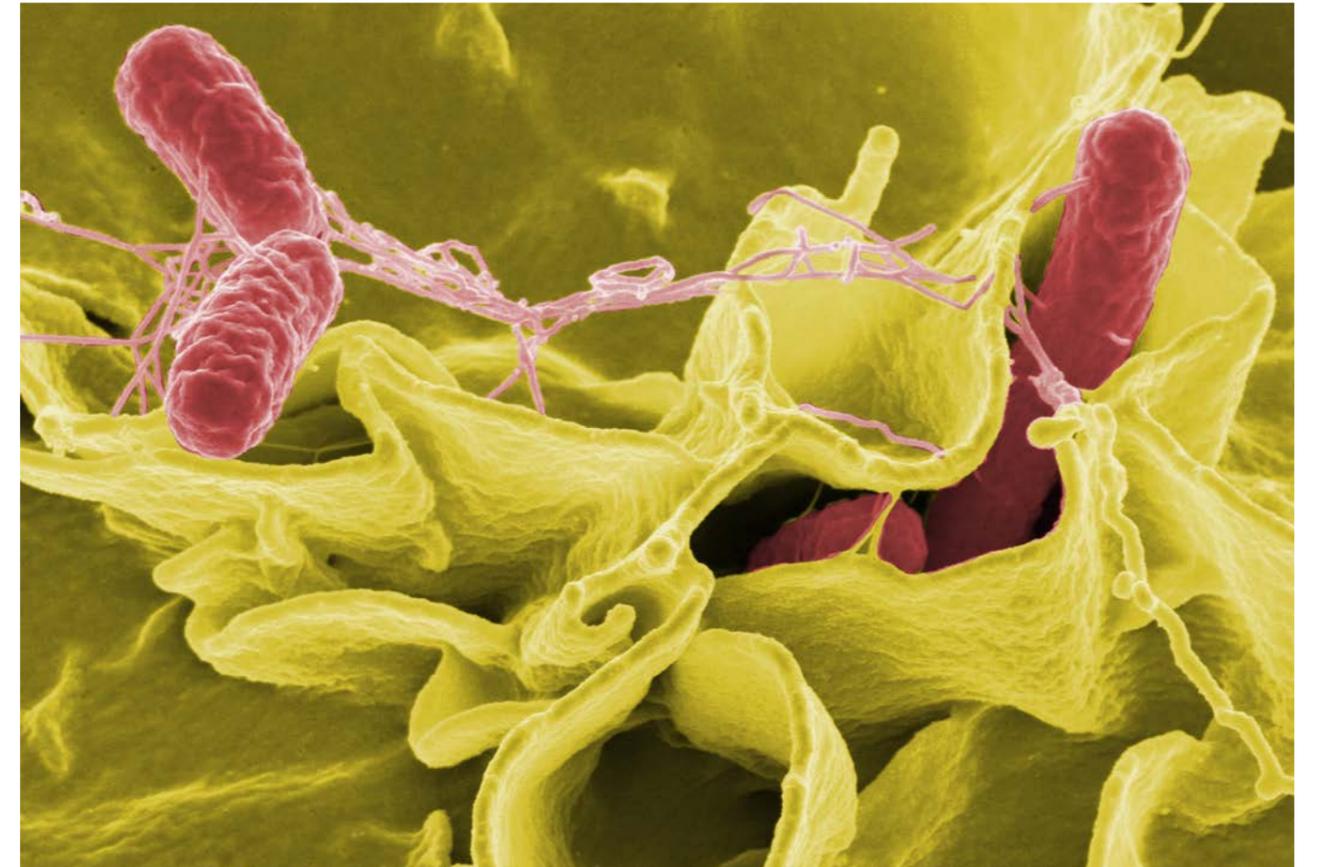
Anolyte and Catholyte solutions have been used to stimulate and enhance oil and gas production and to improve performance of drilling fluids. Anolyte is a highly effective alternative to bactericides that are non-biodegradable or bio-accumulative. As a bactericide, Anolyte is selective, targeting bacteria responsible for microbial-induced corrosion and slime while being safe to humans.

**Marine industry**

Anolyte generators are suitable for onboard ship sterilization of drinking and ballast water. Anolyte can also be added to water used in ice making machines for the fishing industry to ensure a safer product.



## Why use dangerous chemicals when there are safer more environmentally friendly alternatives?



Salmonella enteritidis. Causes food poisoning (Salmonellosis) in humans when ingested. Found in poultry, eggs, meat and shellfish.

Every year people get hurt or even killed in chlorine gas-related accidents. Incidents are due to delivery system issues or the manual mixing of incorrect cleaning and disinfection chemicals.

Chlorine & its chemical compounds are extremely effective as disinfecting agents for the safety of our modern food and water supply chain, which depends heavily upon them. A balance to maintain the safety of the food and water supply chain whilst protecting the health & lives of those working in these areas, is required.

Using Enviolyte systems it is possible to generate Hypochlorous acid safely on site by using a process that combines salt, water & electricity. Hypochlorous Acid is known as the most powerful part of all chlorine based disinfection agents.

At concentrations significantly lower than traditional chlorination with an ORP of +600 to +1200mV and pH of 2.5-8.5, it can achieve a log8

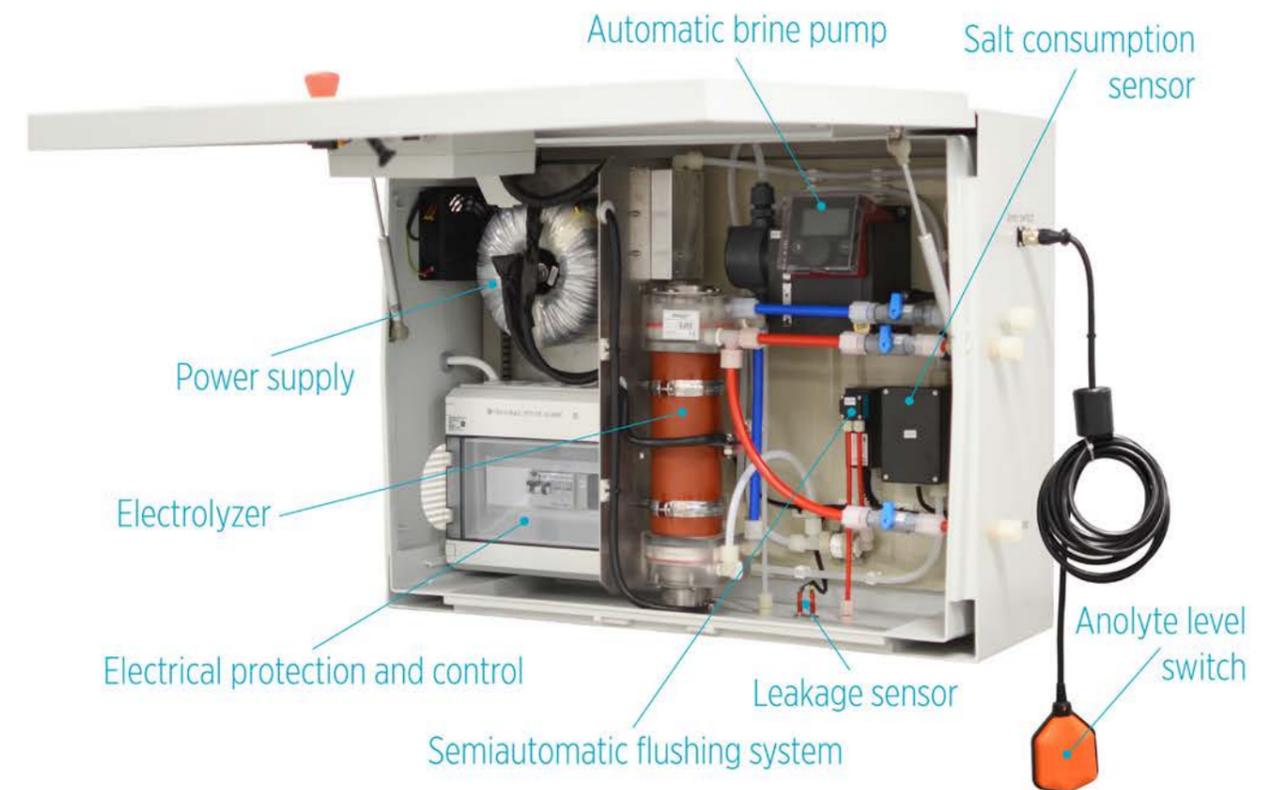
reduction of Escherichia coli within 10 seconds.

Using a state of the art patented Membrane Electrolysis technology, Enviolyte generators produce powerful disinfection agents on site without any risks to humans.

An added bonus is that our disinfection liquids are classed as non-toxic and biodegradable under EU guidelines, which helps to protect both people & the environment. All these benefits are coupled with the possibility of making substantial cost savings in many applications, as on site production is substantially cheaper than using traditional chlorine based chemicals.

Our range of Enviolyte generators can reduce energy & water usage, as our liquids allow some processes to be carried out at ambient temperatures, & enables water recycling to be utilised.

# Envirolyte system features



# The benefits of Envirolyte water disinfection systems

	Gas chlorine	Delivered hypo	Hypo calcium	Chloramination	Chlorine dioxide	Anolyte
Effective	✓	✓	✓	✓	✓	✓
Safety	✗	✗	✗	✗	✗	✓
Chlorine residual	✓	✓	✓	✓	✗	✓
TTHM - HAA5 reduction	✗	✗	✗	✓	✓	✓
Chlorine / Bromate reduction	✓	✓	✓	✓	✗	✓
Biofilm removal	✗	✗	✗	✗	✓	✓
Algae elimination	✗	✗	✗	✗	✓	✓
Micro flocculation	✗	✗	✗	✗	✓	✓
Eliminate T. & O.	✗	✗	✗	✗	✗	✓
Easy to maintain	✓	✗	✗	✗	✗	✓
Lifecycle costs low	✗	✗	✗	✗	✗	✓

- Due to very low concentration of active chlorine, Anolyte diluted in the water does not result in any toxicity effects or the production of any toxic by-products
- Anolyte penetrates tiny pores of the water pipes or any other material
- Anolyte eliminates biofilm and algae from the distribution system
- Water pipes and equipment don't have to be rinsed with water after disinfecting
- Anolyte doesn't harm the original, natural properties of the water
- Anolyte eliminates chlorine taste and odour, improves taste and odour from algae
- Anolyte can be stored and kept for further use when the need arises
- Easy dosing
- High level of safety: no hazardous chemicals produced or used

## Why Envirolyte water disinfection technology is better than traditional chlorination?

- although seemingly analogous to chlorine, Anolyte is unique and clearly superior to sodium hypochlorite in the destruction of spores, bacteria, viruses and other pathogen organisms on an equal residual base. Sodium hypochlorite in concentration of 5% is effective only in disinfection, but not sterilization. Sodium hypochlorite is not effective against cysts (Guardia, Cryptosporidium)
- most of the pathogens, particularly water borne ones, develop resistance to Sodium hypochlorite over time. Anolyte application, as a water disinfectant on a daily basis for more than ten years, has demonstrated that microorganisms have not develop a resistance against Anolyte over this period of time
- the required contact time for Anolyte is lower
- sodium hypochlorite loses its activity during long-term storage & poses a potential danger of gaseous chlorine emissions during storage
- Anolyte is totally soluble
- bactericidal efficiency is between pH 4 to 9
- Anolyte is minimally corrosive primarily due to its low concentrations and, also due, to the elimination of the caustic element normally found in sodium and calcium hypochlorite
- the reaction of Anolyte and organic materials produces about half of the trihalomethanes of chlorine based products
- Anolyte eliminates existing scale & biofilm build-up plus any harboured pathogens, within scale or the dissolved solids. It also stops new scale forming within fresh water supplies. The using Anolyte for Chlorination within a building does not require the water services to be closed off during treatment

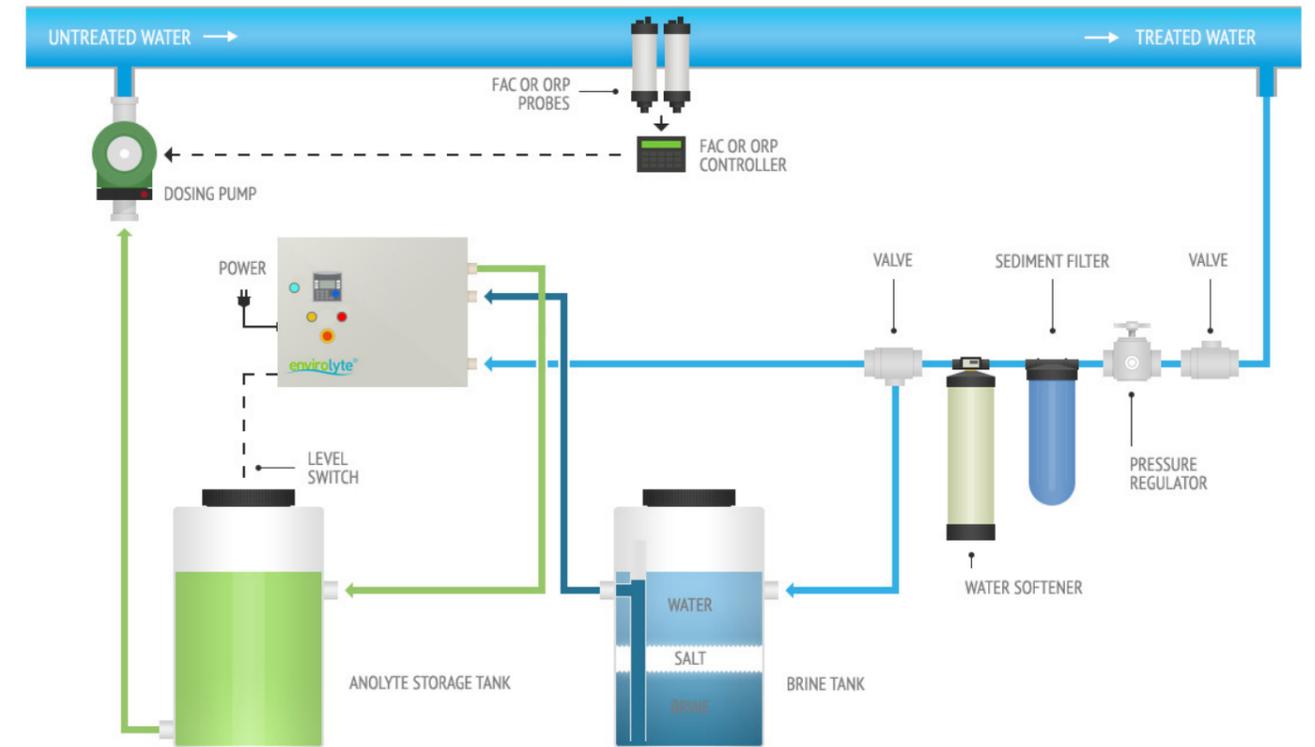


Before dosing Anolyte



After dosing Anolyte

# Typical layout of Enviolyte system



Typical layout of Enviolyte water disinfection system

**Every Enviolyte water disinfecting system consists of:**

- Enviolyte unit (one or more)
- containers for Anolyte and NaCl solution
- dosing pump(s) with FAC or ORP controller

Anolyte produced by Enviolyte unit is collected in a container and then dosed into the incoming water (see above). The dosing regime depends on the water flow and quality (properties) of the source water and is controlled by either flow meter or FAC/ORP controller connected with dosing pump.

**How is disinfecting achieved?**

Aqueous solution of NaCl, electrochemically activated in Enviolyte unit, is a powerful, non-toxic, non-hazardous disinfectant called Anolyte it is the main disinfection agent for any EWDS.

Anolyte is a colourless transparent liquid with a slight chlorine smell. It contains various mixed oxidants by it is predominantly hypochlorous acid, which provides Anolyte with a highly bactericidal and sporicidal activity.

**Anolyte parameters are as follows:**

- pH from 2.0 to 8.5
- concentration (general) of active chlorine 100-6000mg/l
- very high oxidant activity with low (hundreds parts of percentage) concentrations of working substances that don't harm chemical and other vital characteristics of the treated water and do not form any toxic compounds



## Our certificates and approvals



**Enviolyte Industries International Ltd.** is listed in the **Article 95 of BPR 528/2012** of the European Chemical Agency, with the entry Active chlorine generated from sodium chloride by electrolysis (Redefined from Active Chlorine: manufactured by the reaction of hypochlorous acid and sodium hypochlorite produced in situ) and Active chlorine released from hypochlorous acid (Redefined from Active Chlorine: manufactured by the reaction of hypochlorous acid and sodium hypochlorite produced in situ) allowed for PT1, PT2, PT3, PT4, PT5 and PT11.



Enviolyte EPA Pesticide-Producing and Device-Producing Establishment No. 96504-EST-1

EPA Registration Number: 93908-1

Listed in List N of EPA of USA: Products with Emerging Viral Pathogens AND Human Coronavirus claims for use against SARS-CoV-2



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### Organic status of Anolyte as electrolyzed water



**EU**

**Abstract from EGTOP (Expert Group for Technical Advice on Organic Production):**

The substances listed in Annex VII(1) have been authorized for organic production in EU. In the Group's (Expert Group for Technical Advice on Organic Production ) opinion, there is a broad consensus that these substances (listed in Annex VII(1)) are in line with the objectives and principles of organic production.

#### Conclusions

In the Group's opinion, the use of electrolysed water is similar to the use of sodium hypochlorite. It may therefore be used for all purposes for which sodium hypochlorite is authorized, but not for any other purposes. For the time being the Group sees no need to mention electrolyzed water explicitly.



**USA**

Policy Memorandum - NOP-PM15-4 Electrolyzed Water

This memorandum updates the status of electrolyzed water under the U.S. Department of Agriculture (USDA) organic regulations at 7 CFR Part 205. The memorandum clarifies that electrolyzed water is a type of chlorine material that is allowed in organic production and handling.

Chlorine materials are included on the National List of Allowed and Prohibited Substances (National List). In water, chlorine materials such as calcium and sodium hypochlorite form an equilibrium of related chlorine species, including hypochlorous acid (HOCl) and hypochlorite (ClO<sup>-</sup>). Similar chlorine species are formed in the generation of electrolyzed water. Accordingly, the NOP considers hypochlorous acid generated by electrolyzed water to be an allowable type of chlorine material.



**Canada**

Electrolysed water (which may contain hypochlorous acid as a byproduct of either electrolysis or from the dissolution of chlorine compounds in water), is permitted.



**New Zealand**

Biogro Certificate Number: RN 2016-1 : Approved for use in organic production or food processing and handling under COR standards.

**No. 5576**

# Our products



	Flow rate, l/h	Power supply	Installation	Type of reactor	FAC concentration, ppm	Outputs
<b>ela200</b>	20	1 phase 230 (110) VAC	Wall mountable	R-20	500	Neutral Anolyte Neutral Anolyte and Catholyte Acidic Anolyte and Catholyte
<b>ela400</b>	40			R-40		
<b>ela900</b>	90			R-90		
<b>ela1200</b>	120			R-120		
<b>ela2000</b>	200			R-200		
<b>ela2500</b>	250	3 phases 400 (208-220) VAC	Floor standing	R-250	100, 200, 300, 400, 500	
<b>ela3000</b>	300			R-300		
<b>ela4000</b>	400			R-400A		
<b>ela6000</b>	600			R-600		
<b>ela10000</b>	1000			R-1000		
<b>ela12000</b>	1200			R-1200		
<b>ela18000</b>	1800			2 x R-1000		
<b>ela20000</b>	2000			2 x R-1200		
<b>ela24000</b>	2400			2 x R-1200		
<b>ela30000</b>	3000			3 x R-1000		
<b>ela200anw</b>	20	1 phase 230 (110) VAC	Wall mountable	R-40ANE	500	Neutral Anolyte Acidic Anolyte (optional) Catholyte — 0.5% of total flow
<b>ela400anw</b>	40			R-60ANE		
<b>ela900anw</b>	90			R-90ANE		
<b>ela1200anw</b>	120			R-120ANE		
<b>ela2000anw</b>	200			R-200ANE		
<b>ela3000anw</b>	300	R-300ANE				
<b>ela4000anw</b>	400	R-400ANE				
<b>ela6000anw</b>	600	3 phases 400 (208-220) VAC	Floor standing	R-600ANE		
<b>ela10000anw</b>	1000			R-1000ANE		
<b>ela12000anw</b>	1200			R-1200ANE		
<b>ela18000anw</b>	1800			2 x R-1000ANE		
<b>ela20000anw</b>	2000			2 x R-1200ANE		
<b>ela24000anw</b>	2400			2 x R-1200ANE		
<b>ela30000anw</b>	3000			3 x R-1000ANE		
<b>ela40000anw</b>	4000			3 x R-1200ANE		
<b>ela50000anw</b>	5000			4 x R-1200ANE		
<b>ela60000anw</b>	6000			5 x R-1200ANE		

# ANK type of devices



## ela200



Flow rate, l/h	20
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS
Working current, A	~17
Reactor, type	R-20
Brine pump, type	Grundfos
Water input	1/4"
Anolyte output	1/4"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~40

### Options

- Ethernet
- GSM modem
- Modbus

## ela400



Flow rate, l/h	40
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	SMPS
Working current, A	~26
Reactor, type	R-40
Brine pump, type	Grundfos
Water input	1/4"
Anolyte output	1/4"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~40

### Options

- Ethernet
- GSM modem
- Modbus



### ela900

Flow rate, l/h	90
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	transformer x1
Working current, A	~52
Reactor, type	R-90
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	3/8"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~55

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction



### ela2000

Flow rate, l/h	200
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	transformer x1
Working current, A	~110
Reactor, type	R-200
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	1/2"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~70

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction

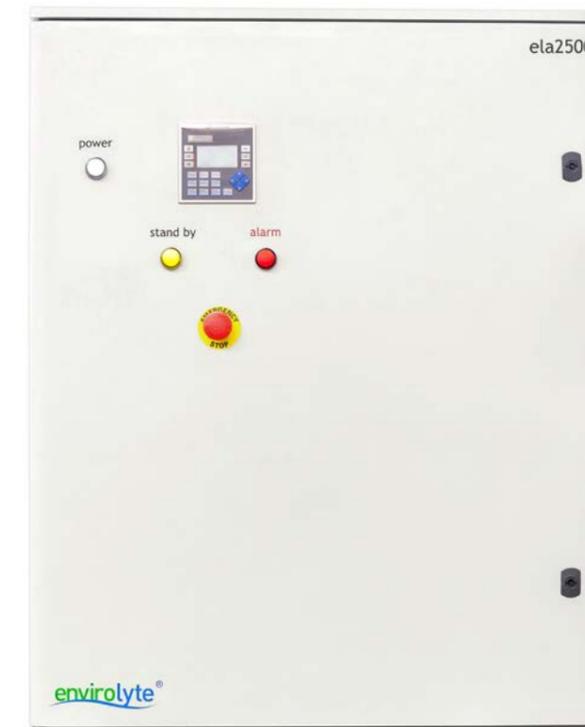


### ela1200

Flow rate, l/h	120
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	transformer x1
Working current, A	~65
Reactor, type	R-120
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	3/8"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~60

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction



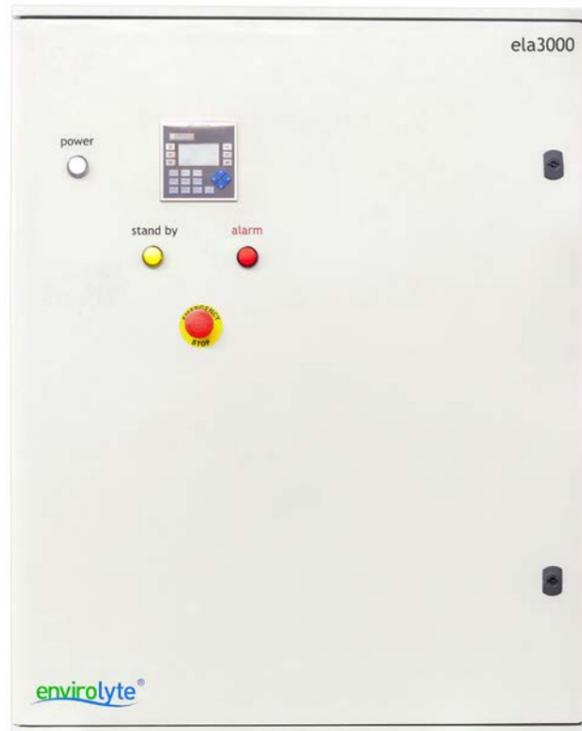
### ela2500

Flow rate, l/h	250
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	transformer x3
Working current, A	~130
Reactor, type	R-250
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	1/2"
Dimensions LxHxW, mm	800x1000x300
Weight, kg	~75

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction

### ela3000



Flow rate, l/h	300
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	transformer x3
Working current, A	~155
Reactor, type	R-300
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	1/2"
Dimensions LxHxW, mm	800x1000x300
Weight, kg	~75

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction

### ela6000



Flow rate, l/h	600
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	transformer x3
Working current, A	~315
Reactor, type	R-600
Brine pump, type	Grundfos
Water input	3/4" PVC
Anolyte output	3/4" PVC
Dimensions LxHxW, mm	800x1630x410
Weight, kg	~230

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction

### ela4000



Flow rate, l/h	400
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	transformer x3
Working current, A	~210
Reactor, type	R-400A
Brine pump, type	Grundfos
Water input	1/2"
Anolyte output	1/2"
Dimensions LxHxW, mm	800x1000x300
Weight, kg	~140

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction

### ela10000



Flow rate, l/h	1000
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~530
Reactor, type	R-1000
Brine pump, type	Grundfos
Water input	3/4" PVC
Anolyte output	3/4" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~315

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction



### ela12000

Flow rate, l/h	1200
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~600
Reactor, type	R-1200
Brine pump, type	Grundfos
Water input	3/4" PVC
Anolyte output	3/4" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~350

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction



### ela20000

Flow rate, l/h	2000
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~1000
Reactor, type	2 x R-1000
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~390

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction



### ela18000

Flow rate, l/h	1800
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~900
Reactor, type	2 x R-1000
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~390

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction



### ela24000

Flow rate, l/h	2400
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~1200
Reactor, type	2 x R-1200
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~450

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction



### ela30000

Flow rate, l/h	3000
Free available chlorine concentration, ppm	100..500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~1500
Reactor, type	3 x R-1000
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~500

#### Options

- Ethernet
- GSM modem
- Modbus
- Automatic pH correction



Envirolyte ela18000 generator in Germany with installation accessories



Different types of Envirolyte ELA generators in UK

# ANW type of devices



## ela200ANW



Flow rate, l/h	20
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS
Working current, A	~18
Reactor, type	R-40ANE
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	3/8"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~40

### Options

- Ethernet
- GSM modem
- Modbus
- pH correction

## ela400ANW



Flow rate, l/h	40
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS
Working current, A	~26
Reactor, type	R-60ANE
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	3/8"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~40

### Options

- Ethernet
- GSM modem
- Modbus
- pH correction

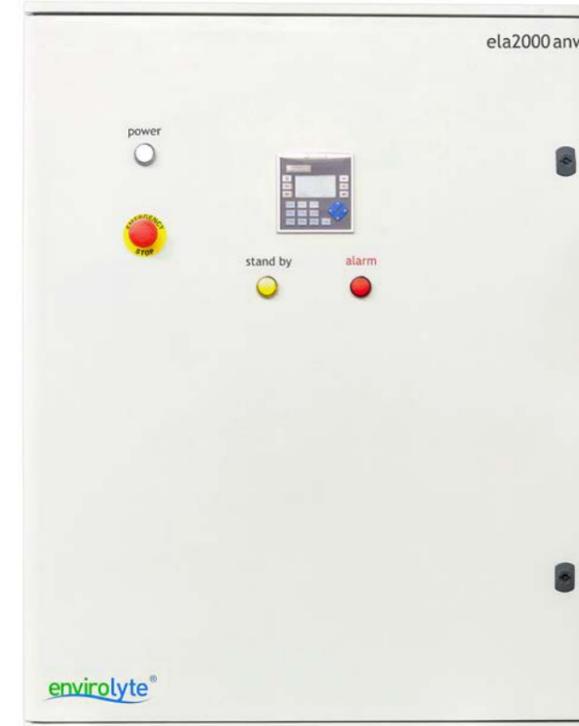


### ela900ANW

Flow rate, l/h	90
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS
Working current, A	~52
Reactor, type	R-90ANE
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	3/8"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~50

#### Options

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela2000ANW

Flow rate, l/h	200
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS
Working current, A	~110
Reactor, type	R-200ANE
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	3/8"
Dimensions LxHxW, mm	800x1000x300
Weight, kg	~65

#### Options

- Ethernet
- GSM modem
- Modbus
- pH correction

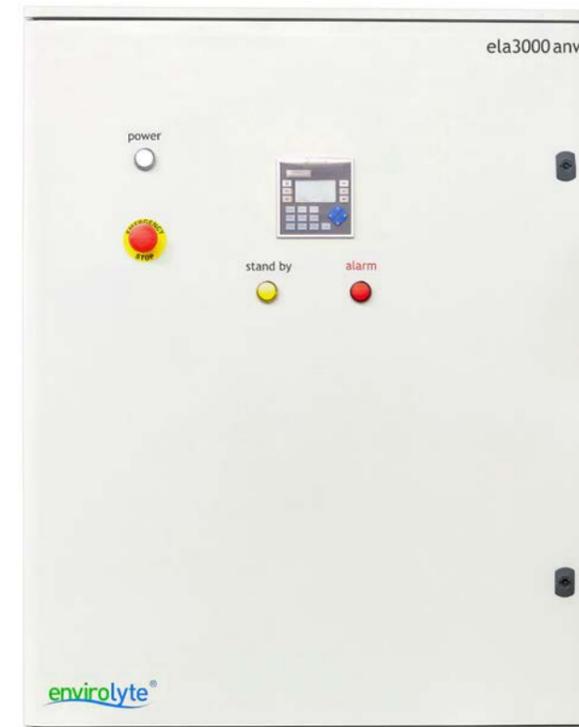


### ela1200ANW

Flow rate, l/h	120
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS
Working current, A	~65
Reactor, type	R-120ANE
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	3/8"
Dimensions LxHxW, mm	800x600x300
Weight, kg	~50

#### Options

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela3000ANW

Flow rate, l/h	300
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS
Working current, A	~155
Reactor, type	R-300ANE
Brine pump, type	Grundfos
Water input	3/8"
Anolyte output	1/2"
Dimensions LxHxW, mm	800x1000x300
Weight, kg	~70

#### Options

- Ethernet
- GSM modem
- Modbus
- pH correction

### ela4000ANW



Flow rate, l/h	400
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	transformer x1
Working current, A	~210
Reactor, type	R-400ANE
Brine pump, type	Grundfos
Water input	1/2"
Anolyte output	1/2"
Dimensions LxHxW, mm	800x1000x300
Weight, kg	~100

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction

### ela10000ANW



Flow rate, l/h	1000
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	transformer x3
Working current, A	~530
Reactor, type	R-1000ANE
Brine pump, type	Grundfos
Water input	3/4" PVC
Anolyte output	3/4" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~285

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction

### ela6000ANW



Flow rate, l/h	600
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	transformer x3
Working current, A	~315
Reactor, type	R-600ANE
Brine pump, type	Grundfos
Water input	3/4" PVC
Anolyte output	3/4" PVC
Dimensions LxHxW, mm	800x1630x410
Weight, kg	~195

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction

### ela12000ANW



Flow rate, l/h	1200
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~600
Reactor, type	R-1200ANE
Brine pump, type	Grundfos
Water input	3/4" PVC
Anolyte output	3/4" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~310

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela18000ANW

Flow rate, l/h	1800
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~900
Reactor, type	2 x R-1000ANE
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~310

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela24000ANW

Flow rate, l/h	2400
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~1200
Reactor, type	2 x R-1200ANE
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~400

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela20000ANW

Flow rate, l/h	2000
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~1000
Reactor, type	2 x R-1000ANE
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~370

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela30000ANW

Flow rate, l/h	3000
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~1500
Reactor, type	3 x R-1000ANE
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~430

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela40000ANW

Flow rate, l/h	4000
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~2000
Reactor, type	3 x R-1200ANE
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	1620x1860x800
Weight, kg	~475

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela60000ANW

Flow rate, l/h	6000
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~3000
Reactor, type	5 x R-1200ANE
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	2500x1860x800
Weight, kg	~600

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction



### ela50000ANW

Flow rate, l/h	5000
Free available chlorine concentration, ppm	500
Control of salt consumption	+
Power supply, type	SMPS (Kraft)
Working current, A	~2500
Reactor, type	4 x R-1200ANE
Brine pump, type	Grundfos
Water input	1" PVC
Anolyte output	1" PVC
Dimensions LxHxW, mm	2500x1860x800
Weight, kg	~550

**Options**

- Ethernet
- GSM modem
- Modbus
- pH correction

## HD type of devices



The task of this invention is to extend the range of Anolyte active chlorine concentrations so as to produce disinfectants with an adjustable active chlorine concentration ranging from 1000 to 8000ppm using a patented diaphragm electrolyser method, without using external circulation circuits and Peltier elements.

Enviolyte ELA-.....HD Anolyte machines are also designed to produce Anolyte using a lower amount of salt and energy. About 3.0g of NaCl and -4.3W of energy are required to generate 1g

of FAC which is accordingly 5 and 3 times less than in standard ELA machines.

High concentrations of FAC in Anolyte may be required for some markets like municipal water treatment, industrial applications where high level of FAC may result in savings on other installation components such as dosing pumps, storage tanks etc, also businesses bottling and packaging Anolyte for retail may see it as a benefit.

**Apart from high FAC concentrations, salt and energy consumption Enviolyte ELA-HD Anolyte generators have some distinct differences from our standard ELA type of machines such as:**

- contrary to the standard Anolyte generators HD type of machines do not produce Catholyte as a by-product in commercially viable volumes. Only -0.4% of Catholyte is the total flow and is specific for a particular machine, it is totally based on water that and can be safely disposed of into the environment. If your application requires the use of Catholyte, we advise you to consider our standard ELA models or our CG Catholyte generators.
- as always the pH of HD Anolyte depends on the pH of the source water but, generally it is at pH ~7.5, which is standard specification for our HD generators. An option is available for PH regulation within a range of pH ~5.5-7.5. The pH regulation requires the installation of some additional components within the HD machine. Please specified your requirement for pH correction when placing an order

The products portfolio of our HD type of generators in relation to the output capacity of Anolyte, depends upon FAC requirement, but generally it is similar to the ELA products range.

Installation requirements for HD type of Anolyte generators is also similar to those of ELA type of machines.



Enviolyte ela 1800HD set for 5000ppm for public water treatment

## CG type of devices

Enviolyte CG series Catholyte generators are designed to produce Catholyte on site and on demand from NaCl brine with NaOH concentration ranging from 1g/l up to 6g/l and pH ~11.5-13.5, this is what makes it an ideal solution for washing operations, bio-stimulation procedures, precipitation of heavy metals and organic matter during water purification or for the extraction of essential oils.

Production of Catholyte is a cost effective & an efficient and environmentally friendly alternative to other chemical detergents, it is suitable for a multitude of applications particularly in CIP, food processing, horticulture, green houses and within hospitality businesses. In-situ

generation eliminates the hazards associated with transportation, handling and storage of dangerous caustic chemicals.

During generation of Catholyte a small volume, i.e. 0.4% of total flow, of acidic Anolyte is produced as a by-product for which safety disposal measures should be considered.

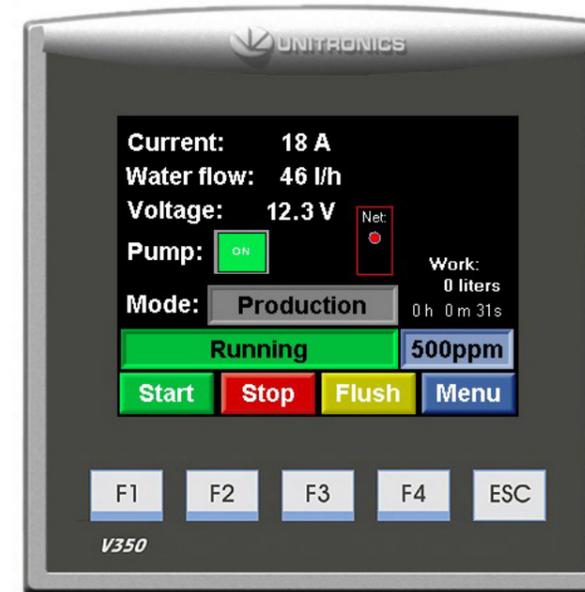
The products portfolio of CG type of generators in terms of Catholyte output capacity depends on the NaOH concentration requirement but generally it is similar to ELA products range.

Installation requirements of CG Catholyte generators is similar to our standard ELA machines.



Enviolyte CG400 in a laundry in Canada

# Envirolyte GH-40 generator



GH-40 main display during operation

Our Envirolyte GH-40 Anolyte/Catholyte generator is designed to produce on site and on demand neutral Anolyte only or neutral Anolyte and Catholyte for a multitude of different applications wherever there is a requirement for disinfection and cleaning.

Anolyte (HOCl) is one disinfectant that, when combined with adequate personal protective equipment, screening and social-distancing techniques, hand washing, and high-volume evacuation suction, may help reduce the transmission of any pathogenic disease within environments. It comprises many of the desired effects of the ideal disinfectant: It is easy to use, inexpensive, has a good safety profile, and can be used to disinfect large areas quickly and with a broad range of bactericidal and virucidal effects.

GH-40 generator does not require a connection to a mains water source, as pre-mixed salt & water solution is required. The machine uses ~4.5g/l of brine (generators with lesser salt consumption, i.e. 1.5-2.5g/l are available upon request) directly from the brine storage container to produce Anolyte and Catholyte at any given time or by using the pre-programmed schedule.

Ease of installation and operation as well as the efficacy of the disinfecting and washing fluids make the GH-40 generator an ideal choice as a sustainable source for disinfecting and washing fluids to suit the needs of hotels, schools, hospitals, public buildings, elderly houses, supermarkets, recreation facilities, swimming pools and SPA centers etc.



# Enviolyte CIP type of devices



Water processing with Anolyte and Catholyte or in other words Electrolyzed Water (EW) is used within a number of hygiene applications to remove unwanted microorganisms from contact surfaces within the food and beverage industry.

The multiple applications available for using Anolyte for disinfection and Catholyte as a washing fluid. Therefore within the food processing, beer and beverage industries there is a distinct need for capable generators to produce both Anolyte and Catholyte liquids.

Enviolyte CIP generators are ideally suited to the markets for CIP applications or hospitality sectors (hotels, schools, government facilities, military bases, prisons, cruise ships, janitorial services, etc.). These generators are easy to install, operate and maintain, they are an ideal solution when safety and cost are of concern.

The Enviolyte CIP range of Anolyte/Catholyte generators was developed in cooperation with our partners for the food processing and beverage market and is available in low salt configuration only.

**The generators are a significant step forward in Anolyte/Catholyte production technology and are characterized by:**

- minimal maintenance
- state of the art reactor cell technology, with a prolonged operational life improving the generator performance dramatically.
- reduced total cost of ownership
- on demand for Anolyte and Catholyte liquids
- highly effective eco-friendly ECA solutions
- Anolyte 500ppm FAC with pH 6,5
- Catholyte ~1000ppm NaOH with pH >12
- individual Anolyte and Catholyte reactor cell technology
- less complicated
- extremely low waste generation, less than 0,5% of device capacity
- easy Anolyte production with a factory set generator to customer specification
- simplified installation and operation
- high quality components
- European standards
- low salt/chloride technology to protect any customer's corrosion concerns
- 28-34ppm of chlorides within the final CIP solutions plus chlorides of CIP makeup water
- easy to use interface, ensuring that the solutions are always within their specified parameters and are producing consistent quality Anolyte and Catholyte
- equipped with remote monitoring for peace of mind (GSM or Ethernet)

**Although these Anolyte/Catholyte generators were designed with the beverage market in mind, they can be used in any situation where both Anolyte and Catholyte solutions are required for effective cleaning and sanitizing operations.**

CIP-20/20	CIP-40/40	CIP-100/100	CIP-200/200	CIP-300/300
-20 l/h of ANW Anolyte with pH -3-7 (can be regulated) and -500-550ppm of FAC;	-40 l/h of ANW Anolyte with pH -3-7 (can be regulated) and -500-550ppm of FAC;	-100 l/h of ANW Anolyte with pH -3-7 (can be regulated) and -500-550ppm of FAC;	-200 l/h of ANW Anolyte with pH -3-7 (can be regulated) and -500-550ppm of FAC;	-300 l/h of ANW Anolyte with pH -3-7 (can be regulated) and -500-550ppm of FAC;
-20 l/h of Catholyte with pH -12.2-12.5 and -0.8-1.0g/l of NaOH	-40 l/h of Catholyte with pH -12.2-12.5 and -0.8-1.0g/l of NaOH	-100 l/h of Catholyte with pH -12.2-12.5 and -0.8-1.0g/l of NaOH	200 l/h of Catholyte with pH -12.2-12.5 and -0.8-1.0g/l of NaOH	-300 l/h of Catholyte with pH -12.2-12.5 and -0.8-1.0g/l of NaOH

## Enviolyte CIP/HD type of devices



**CIP/HD series of Anolyte/Catholyte generators have been designed to address multiple applications where customers need first to wash and/or degrease either surfaces, premises, equipment or tools and then disinfect.**

The multiple applications imply use of Anolyte for disinfection and Catholyte as a washing fluid.

Therefore within the food processing, beer and beverage industries there is a distinct need for generators to produce both Anolyte and Catholyte on the spot and on demand at the required volume and required strength.

CIP/HD series of Anolyte/Catholyte generators

**The generators are a significant step forward in Anolyte/Catholyte production technology and are characterized by:**

- minimal maintenance
- state of the art reactor cell technology, with a prolonged operational life improving the generator performance dramatically
- reduced total cost of ownership
- on demand solutions
- highly effective eco-friendly ECA solutions
- Anolyte 500-3000ppm FAC with the option for pH regulation in the range pH ~5-7.5. Higher FAC ppm concentrations are possible up to 6000ppm
- Catholyte 1000-3000ppm NaOH at pH >12.5-13
- individual Anolyte and Catholyte reactor cell technology
- less complicated
- extremely low waste generation, less than 0.5% of device capacity

are a further development of our Enviolyte CIP generators and they are ideally suited to food processing or hospitality markets (hotels, schools, government facilities, military bases, prisons, cruise ships, janitorial services, etc.).

These generators are easy to install, operate and maintain and are the ideal solution when safety and cost implications are a concern.

- easy Anolyte production with a generator that is factory set to suit the customer needs and specification
- simplified installation and operation
- high quality components, European standards
- low salt/chloride technology that protects our customer's corrosion concerns
- easy to use interface, ensuring that the solutions are always within their specified parameters and are producing consistent quality Anolyte and Catholyte
- equipped with remote monitoring for peace of mind (GSM or Ethernet)

Therefore, our specifications position CIP/HD generators as a perfect source of washing and disinfecting fluids for any industry where both Anolyte and Catholyte solutions are required for effective cleaning and sanitizing operations.

### **What is the difference between CIP and CIP/HD generators?**

Both types of generators, CIP and CIP/HD, have two independent production platforms to generate the fluids either independently or simultaneously.

However, in CIP generators the fluids are produced with precisely preset parameters of HClO/NaOH such as ppm concentration, pH and salt/chlorides residual, all with the purpose to provide for high efficacy and avoid any risk of

corrosion when during CIP operations. Therefore CIP generators are generally limited to only CIP operations.

In CIP/HD the above mentioned parameters of Anolyte/Catholyte may vary, i. e. the fluids may be stronger, what allows to address the most difficult washing and disinfection cases in many industries.

## Seawater Anolyte generators



The use of seawater as the feed brine for Enviolyte generators for activated (disinfecting and washing) solutions has always been a challenge and great temptation for the scientists and engineers at Enviolyte Industries International Ltd. The reasons for that are quite obvious: eliminating the need for any source of mains water and preparation of brine makes the Enviolyte technology even simpler and more cost effective. Moreover, it moves the horizons for the use of the technology to the previously untouched areas of all type of off shore & on board vessels or for aquaculture applications wherever there is a need for disinfection, sterilization and water purification.

The idea of using the seawater as the main and only feed for Enviolyte units lies in the chemistry of the sea water which is predominantly sodium

chloride solution accompanied by some other salts. The concentration of sodium chloride is sufficient to generate the necessary volume of active chlorine to render disinfecting properties to the final product - Anolyte generated purely by using only the seawater.

Enviolyte seawater machines are a further development of our Enviolyte technology to suit the needs of our customers for disinfection and water purification within the aquaculture industry and for off shore/on board operations.

Enviolyte seawater machines have been designed to generate ANK-neutral Anolyte and Catholyte, if needed, from sea water with a salinity ranging from 5-7PSU (brackish water) to 33-35PSU (ocean water), with an active chlorine concentration in the range of 500-1000ppm.

### The key features:

- full automation and easy operating procedures give the added benefits to rapid delivery of safe and fast acting disinfectant -ANK-neutral Anolyte
- the strength of ANK-neutral Anolyte in terms of active chlorine concentration is preset during manufacturing but can be adjusted according to customers requirements
- the control system of Enviolyte seawater units is simple and easy to operate. It can be altered to suit different applications and conditions
- flow and pressure controllers are installed in the Hydraulic part to stop the Enviolyte unit if there is interruption of water supply and to start it as soon as water flow resumes
- the enclosures are made of non-corrosive materials. Various types can be provided according to the customers demand
- reset button allows starting the unit regardless of the level switchers' position
- tubes and connectors are of EPDM/PVDF plastics and are highly resistant against aggressive solutions
- all input and output connectors are located on the sides of the boxes to allow them wall-mountable
- a simple on/off switch with power indicator allows starting and stopping Enviolyte seawater units manually
- level switches or ORP meter enable to start and stop Enviolyte seawater units automatically
- inbuilt alarms can be arranged for any remote area through external connection
- PC/Internet control is optional for Enviolyte seawater units, this allows remote monitoring of the machines operation, to diagnose and remedy potential problem from a control room or any location away from the installation site

### General specifications:

- output capacity ranging from 40 l/h up to 3000 l/h of ANK-neutral Anolyte
- power source 400/230/110 VAC ±10%

# Industrial water ionizers



## New trend in public drinking water — more emphases on health benefits

Enviolyte ECO units are designed for purifying tap water that doesn't meet the WHO (World Health Organisation) health standards. Not only does it kill all bacteria and viruses within the water in seconds, it also reduces heavy metal content to European safety standards and produces a pleasant-tasting potable water, retaining most of its beneficial mineral contents.

The process for the production of potable water has been developed over many years and still has no analogues. Enviolyte ECO units have undergone technical and independent medical biological testing, to confirm that it destroys even extreme levels of bacteria and viruses in water as well as organic compounds (including phenols), thus rendering it safe, tasty and drinkable.

Water purification using Enviolyte ECO units is achieved by oxidation and reduction that destroy and neutralize all hazardous substances. The concept of water treatment in Enviolyte ECO units may be summarized as follows: such treatment removes everything that is alien and harmful to the human body, whilst retaining all that is useful and harmless.

Research of effects of Enviolyte water has been carried out since 1950s. Data has been collected, indicating it is good for arthritis, chronic constipation, chronic diarrhoea, diabetes, heartburn, chronic fatigue, indigestion, high blood pressure, leg cramps, poor circulation, migraines, nausea, obesity, osteoporosis, psoriasis, stress\*.

\* - Enviolyte water does not replace regular medical treatment, and the above listed uses are not medical advice. No result is guaranteed or predicted.

Enviolyte water possesses excellent absorption and hydrating potential, having smaller cluster sizes and a greater concentration of soluble minerals. It reduces over-acidic conditions and increases stabilized oxygen within the human body, contributing to better digestion. Enviolyte water is slightly alkaline, has a low ORP (Oxygen Reduction, redox potential) and is rich in electrons, which makes it an antioxidant.

Pure clean water is paramount for good health. If we combine it with a well balanced diet of fruit, vegetables, vitamins and minerals and regular exercise, we'll be rid of acidic waste that bad eating and drinking habits form in our body.

## The key features and general specifications

- a self-cleaning cycle has been programmed into the machine, which ensures easy maintenance and maximum productivity
- the unique design of the diaphragmatic cell ensures the water being processed has maximum contact with the electrodes and therefore the most effective use of energy and better treatment are achieved
- there is a minimal hydraulic resistance against the water as it flows through the cell chambers, this ensures an optimum flow rate is achieved
- the electrodes are specifically designed to endure high electrochemical loading as are the cell membranes
- the enclosure is made of non-corrosive materials. Tubes and connectors are of EPDM/PVDF plastics
- a simple on/off switch with a power indicator starts and stops the unit manually
- no moveable or replaceable parts

**How does it work?**

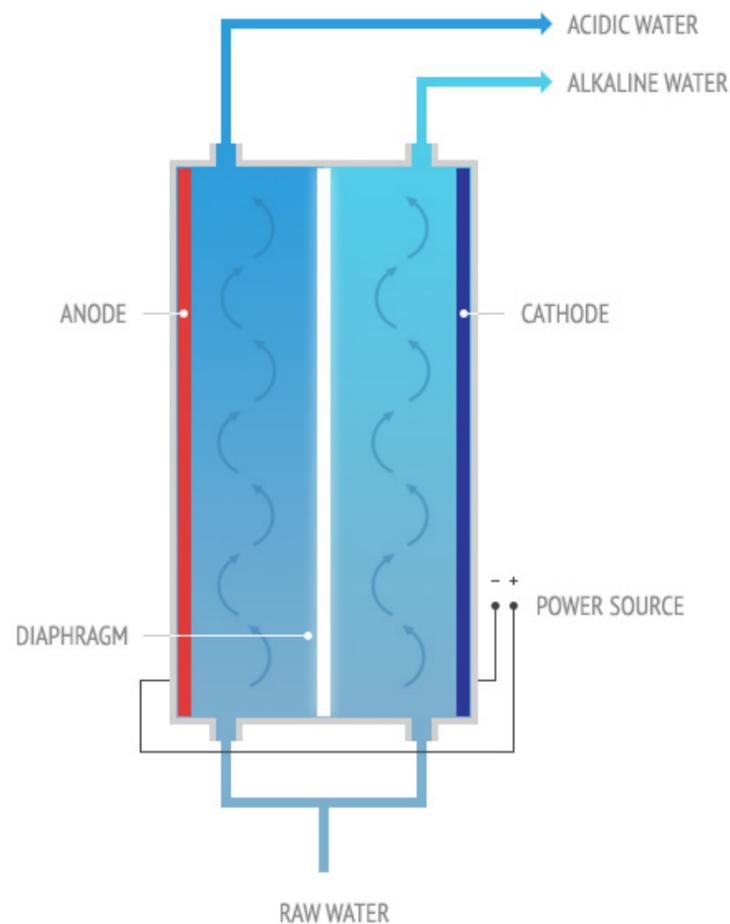
The water purification process within Envirolyte ECO units includes anodic electrolytic oxidation with a simultaneous removal of cations; electrocatalytic and additional chemical additional in intermediate vortical reactor tank and catalytic purification within a catalytic reactor.

The water pathways are within a flow-through diaphragmatic electrochemical cell, a catalytic reactor, a vortical reaction chamber and a VDC power source. The electrodes within the reactor have a special coating, which includes oxide ruthenium, iridium, platinum and titanium. The ultra filtrating ceramic diaphragm made of zirconium, yttrium & aluminium oxides is located between the anode and cathode chambers, this prevents the water in the anode and cathode chambers from mixing, & allows ion migration within the electric field between the anode &

cathode. Diaphragmatic cell design ensures the microvolumes of water make physical contact when flowing through the anode & cathode chambers and over the electrode surfaces, within the vicinity of (in a so-called Double Electric Layer - DEL) the electric field intensity which reaches 100,000 to 10,000,000V/cm. This ensures a high quality of electrolytic & electrocatalytic water purification.

Water purified by Envirolyte ECO units acquires biocidal properties, stimulates biological oxidation, can provide indirect electrochemical detoxification of the human body through oxidation hydroxylation of uremia and other toxins.

Within fractions of a second during the process, the anode unipolar electrochemical treatment saturates the water with highly active oxidants.



Processes of direct electrolytic oxidation (on the electrode surface) and electro-catalytic oxidation ensure the destruction of organic impurities and the demolition of micro-organisms. The end products of the total oxidation of all the organic matter (including phenols) are generally harmless, and are mostly carbon dioxide and water.



Envirolyte ECO alkaline ionized water generators in Oman

Extremely high oxidation-reduction potential of the water directly in the anode chamber and meta-stable compounds of active chlorine and active oxygen participating in the reactions prevent the formation of toxic chlorine-organic substances and ensure total destruction of dioxins.

In the catalytic reactor, hetero-phase catalytic destruction of active chlorine compounds and heterophase catalytic oxidation of organic substances is carried out on the surface of granules of a replacement-free and regeneration-free catalyst, where active chlorine compounds decay to form highly active short-lived particles. When leaving the catalytic chamber, the water is saturated with oxygen and practically does not contain active chlorine compounds.



Enviolyte eco12000 alkaline ionized water generator at a bottling plant in USA

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