



OZONE WATER TAP ATTACHMENT

PROFILE

The Aquazone is a very compact water ozonator. It can easily be attached to any water tap without tools and is entirely free of running costs.

- economical
- ecological
- efficient



* not detectable

Power Unit

An integrated power unit obviates any outer power supply or batteries. It generates electricity through the pressure of flowing water which drives a dynamo.

Ozone gas is produced by exposing oxygen in the air to an electrical discharge at high voltage which is then dissolved in water at enhanced pressure. The Aquazone is capable of producing up to 70 mg in one hour. Depending upon the pressure and the water flow, the ozone concentration in the water ranges from 0.2 to 0.5 ppm.

Installation

The Aquazone unit is attached directly to the water outlet of a conventional faucet by using plastic adaptors. No special tools are required.

OZONE

Ozone is a molecule that consists of three oxygen atoms ($3 \times O = O_3$). With its oxidation power, it is an efficient disinfectant, characterized by its rapid action and low required concentration. It has the ability to destroy, not only bacteria, but also viruses including Noro-virus, spores, fungus and many other contaminants by oxidation.

Ozone is non-toxic in low concentrations and reverts back to its original form, namely oxygen (O_2), within a short period of time. In contrast to chlorine-based disinfectants or any other common agents, ozone water will not leave a residue. As a result ozone is widely used in food industries and also as a food additive.



OZONE WATER

In water, ozone decomposes rapidly and hydrolyses to form the OH-radical, an extremely powerful oxidant. Therefore ozonised water can be used as an oxidant.

The Aquazone supplies ozone water that is effective but not harmful. It can be used in a wide range of applications.

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Hygiene



- Hygiene is an important factor for a healthy life. Proper hand washing alone can prevent unnecessary diseases and washing hands with soap is effective but not as effective as washing with ozone water. Ozone water is not only superior as a disinfectant but also works quicker. Soaking hands in ozone water for some time (e.g. half a minute) will kill bacteria on the surface of hands.
- Ozone water is also good for skin care. General hygiene helps to keep the skin clean but ozone water is more beneficial and can replace lotions or moisturizers. It can also be used to eliminate pimples off the face. Ozone water is also used in medical treatment to wash sores, ulcers and burns .
- It would be advantageous for mothers to use ozonised water for washing when changing diapers as not only does it kill bacteria but it also acts as a deodorant. Also ozonised water can be used for washing bed ridden patients..
- Furthermore, baby's bottles and other utensils can be sterilized with ozone water eliminating the necessity for boiling water or sterilising with alcohol.

Drink Water



Ozone destroys not only bacteria, but also chlorine residues that cause unpleasant smells , making tap water undrinkable. As a result, ozonised water used in coffee or tea, will taste fresh and good. Ozonised water kept for drinking should be left for half an hour before drinking to allow the ozonesmell to disappear if preferred.

Watering Flowers



Ozone water kills surface bacteria that cause cut flowers to decay and also contains extra oxygen which will result in improved shelf life of flowers.

Fresh vegetables

Ozone water will also keep leafy vegetables fresh. It not only kills bacteria but also destroys ethylene gas that causes vegetables to wither. Kept in a plastic bag filled with ozone water and placed in a refrigerator, leafy vegetables will stay fresh and crunchy even after a week. This feature is of great interest to commercial concerns such as restaurants as there will be very little food discarded if treated and kept with ozone.

The pictures show the difference. The spinach on the left was processed with ozone water, whilst the other one was treated conventionally.



Ecology



Ozone water can be used to replace chemicals such as detergents that affect our environment and as a result improve the environment from pollution. If ozonised water, for example, is used for rinsing vegetables for some time, the slimy surface on drain pipes will be removed. Clean odour free grease traps are of interest to commercial kitchens and food processors.

Unlike filter attachments, Aquazone has no cartridge that has to be replaced regularly. It also requires no electrical connection and produces power on demand using the water flow as a clean source of energy and providing clean and healthy water without damaging the ecology.

Specifications	
Dimensions	W106 x L130 x H70 mm
Ozonating Capacity	70mg per hour
Ozone Concentration	0.2-0.5 ppm
Minimum Pressure	0.2 Mpa
Net Weight	305 g
Generator Performance	max. 2W (at 3000 rpm)



Table 1 Water Analysis

Parameter	Actual Values	Standard Values
Bacteria, general	under 100/mL	colony under 100/mL
Escherichia coli	not detectable	not detectable
Nitrite-Nitrogen	2.7mg/L	unter 10mg/L
Chloride Ions	7.1mg/L	unter 200mg/L
Total Organic Carbon (TOC)	0.5mg/L	unter 5mg/L
pH	7.2	5.8-8.6
Taste	no abnormality noticeable	no abnormality noticeable
Odor	no abnormality noticeable	no abnormality noticeable
Coloration	0.5	unter 5
Turbidity	0.1	unter 2
Calcium, Magnesium, etc.	90mg/L	under 300mg/L
Iron	0.1mg/L	under 0.3mg/L
Chlorine Residual	0.4mg/L	not mentioned

Table 2 Microbiological Analysis of Ozonized Water

Three different species of bacteria as listed below were cultivated in a common bouillon medium at 35 degrees C for 18 hours and injected into sterilized pure water after centrifugation. (Approximate bacterial concentration: 10⁶cfu-mL.)

- Escherichia coli IFO 3972
- Staphylococcus aureus IFO 12732
- Escherichia coli IID 959

Water samples were collected from the ozonizer in 3 sterilized 1-liter bottles after 3 minutes of running and injected with 1mL each of the bacterial solutions. After injection, 10mL each of the water samples was taken in intervals of 1, 3 and 5 minutes, respectively. Prior to numerical analysis, the samples were placed in agar medium at 35 degrees C for 48 hours. Sterilized pure water was processed in the same manner for reference.



Results

Parameter		0 Min.	1 Min.	3 Min.	5 Min.
Escherichia coli IFO 3972	Ozone Water	-	nd*	nd*	nd*
	Pure Water	3.8x10 ⁴	-	-	6.5x10 ⁴
Staphzlococcus aureus IFO 12732	Ozone Water	-	nd*	nd*	nd*
	Pure Water	1.1x10 ⁹	-	-	9.2x10 ⁴
Escherichia coli IID 959	Ozone Water	-	nd*	nd*	nd*
	Pure Water	7.0x10 ⁴	-	-	5.5x10 ⁴

* not detectable