



Adept™

ULTRA-COMPACT OZONE GENERATORS *Active Diamond Electrolytic Process Technology™*

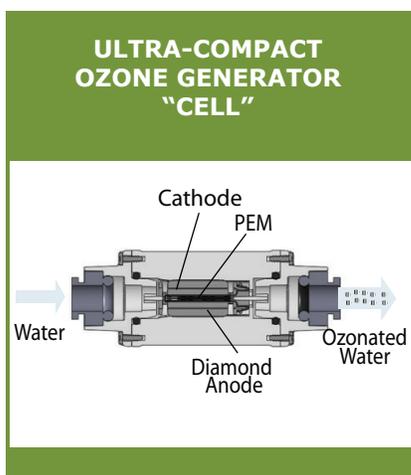
Safe and Reliable Ozone Generators for Consumer and Commercial Appliances

Our unique, ozone generator technology has opened the door to cleaner, safer, healthier, and chemical-free living, in applications that have previously been unavailable, inaccessible, or cost-prohibitive.

We safely and reliably generate ozone in water, with no feed gas requirements and minimal off-gassing. Our Active Diamond Electrolytic Process Technology (*Adept*), produces ozone in a compact (2" square) self-contained "cell" which is plumbed directly in-line with a water source, requiring no diffusers or injectors. *Adept* cells are impervious to ambient humidity levels.

Sanitize, Deodorize, and Preserve

Ozonated water is a highly effective and environmentally friendly disinfecting agent. It is particularly attractive as an alternative to chlorine because it kills more pathogens, acts more quickly, produces fewer by-products, and leaves no residue. Ozone achieves pathogen reduction rates equivalent to heat treatments while using 95% less energy.



Sanitizing laundry or dishes with ozonated water saves energy, is less polluting and produces superior results. Additionally, ozone is highly effective at destroying odor-producing molecules,



eliminating unwanted smells from clothes, appliances, chopping boards, and other surfaces. As an added benefit, washing fruits, vegetables and meats with ozonated water allows them to maintain freshness many times longer.

Our Technology Overview

Traditional ozone generators require a supply of air or oxygen, and expensive peripheral and safety components to produce ozone in effective concentrations. Because of these high system costs, the adoption of ozone for light industry and consumer use has been limited. At EOI, we've changed all that.

Adept cells use a proprietary boron-doped diamond platen as anodes. A solid Proton Exchange Membrane (PEM) is used to selectively conduct protons from the anode to the cathode. This permits the separation of ozone that is required to maintain a constant, high-concentration of ozone in the cell.

CLEANER, SAFER, CHEMICAL-FREE LIVING

EOI's ultra-compact *Adept* ozone cells are available for integration in water purifiers, dishwashers, washing machines, kitchen faucets, commercial ice makers, and in many other applications that require compact electrolytic ozone cells. Our ozone cells are designed to provide a safe and efficient alternative to chemical sanitizers.



An integral water softening cartridge extends the product lifetime and allows for use in a broad range of feed water qualities. The EOI patent-pending OneTwist™ cartridge design allows for easy installation and field replacement.

Key Features

- Low power operation: 18 VDC @ 8 A, ideal for integration into existing appliances as well as portable applications
- Small form factor: approx. 2" cube, < 0.5 lb
- Near-instantaneous ozone production
- Reliable, no moving parts

Antimicrobial Efficacy

Ozone interferes with the metabolism of bacterium-cells through inhibiting and blocking the operation of the enzymatic control system. A sufficient amount of ozone breaks through the cell membrane, and this leads to the destruction of the bacteria.

Ozone destroys viruses by diffusing through the protein coat into the nucleic acid core, resulting in damage of the viral RNA. At higher concentrations, ozone destroys the capsid, or exterior protein shell by oxidation so DNA (deoxyribonucleic acid), or RNA (ribonucleic acid) structures of the microorganism are affected.

Pathogen	Dosage
Escherichia Coli in clean water	99.99% destruction at 0.25 mg/l for 1.6 minutes
Hepatitis A virus	99.5% reduction at 0.25 mg/l for 2-seconds
Herpes Virus	Destroyed to zero level in less than 30 seconds with 0.1 to 0.8 mg/l.
Influenza Virus	0.4 to 0.5 mg/l threshold value
Pseudomonas Bacteria	Very susceptible
Salmonella Bacteria	Very susceptible
Salmonella typhimurium	99.99% destruction at 0.25 mg/l for 1.67 minutes in water
Staph epidermidis	90% reduction at 0.1-ppm for 1.7 min
Streptococcus Bacteria	Destroyed by 0.2 mg/l within 30 seconds

Specifications

Item	Specification
GH500 Specification	Ozone output of 500 mg with Water flow rate of 2.5 L/m, Water temperature 20°C, Ozone concentration 2.4 ppm. Constant current 8 Amp, Water hardness 120 ppm.
Ozone Output	
Ozone Production Rate	5-500 mg/hr
Dissolved Ozone Concentration	0.1-5.0 ppm
Power Requirements	
Voltage	18-24 VDC
Current	0.1- 8.0 Amp
Power consumption	2.0-200 Watts
Water Requirements	
Water flow rate	0.25-1.5 gpm (1-6 liter/minutes)
Water temperature	40°F (4°C) - 86°F (30°C)
Water Quality	Potable water
Physical Properties	
Wetted Materials	Diamond, Titanium, Nafion, CPVC,
Weight	<0.5 lb
Dimensions	(WxHxD) 5 cm x 5 cm x 5 cm
Operating Temperature	40°F (4°C) - 104°F (40°C)
Cartridge life	Typically 500 Hours of operation (custom sizeable to the application)
Certifications	CE/UL preliminary testing

In 1997 the FDA approved the use of ozone as an antimicrobial agent with indirect contact with foods.

In 2002 the FDA approved ozone for use on food contact areas and directly on food with its Generally Regarded As Safe (GRAS) designation.

The Organic Foods Production Act (OFPA) identifies aqueous ozone as a substance that is allowed for use in organic crop and livestock production.