

DO2E UV Ozone Advanced F.O.G., Corrosion & Odor Control

Overview

DO2E has revolutionized the delivery and use of Ultraviolet Ozone (UV Ozone) with Hydroxyl free radicals for advanced remediation for Odor, Corrosion, and F.O.G. control within the wastewater industry.

Anywhere water is contaminated with unwanted chemicals, bacteria, heavy metals, pharmaceuticals, ammonia, Hydrogen sulfides, and many other contaminants, the DO2E Advanced UV Ozone delivery System can help solve the issues.

The unique features of this new technology evolves around the ability to maximize 98 % of the ozone and hydroxyl free radicals generated, and deliver them directly to the source of the problem. Whether it is in the water column, or waste stream, or in the air, DO2E has perfected the most advanced and effective means of delivering the UV ozone.

The deliver systems designed and used to deliver the UV Ozone with free radicals is with the DO2E Digester, Floating Mixer, High Volume Floating Aerator, O.T.T.E.R. System, and the Fogging cabinet. This simple maintenance free UV Ozone delivery systems can be incorporated into any of the DO2E products.

DO2E has worked with a leading UV ozone bulb manufacturer for over 2 years developing a long lasting, High Output UV Ozone bulb. These high output bulbs produce up to 3 grams of UV ozone per lamp per hour and last up to 24 months. This custom lamp is proprietary to DO2E only. The lamps and ballast are simple and easy to replace using the quick connect wire adaptors provided.

With several thousand of these Advanced UV Ozone with Free Hydroxyl Radical delivery systems installed since 2012, we have experienced a 98% customer satisfaction rate with 87% multiple unit repurchases. For Advanced Odor, F.O.G., and Corrosion Control, the DO2E UV Ozone system is the answer.

FEATURES

Odor Control (H₂S)
Corrosion Control
F.O.G. Control
Adjustable Ozone Out-Put
Fully self contained
Prewired
Multi Voltage
99% Maintenance Free

UV OZONE VS Chlorine

- 1) Ozone reacts over 3000 times faster than chlorine
- 2) Unlike chlorine, ozone leaves no harmful chlorinated by-products in the water, ozone quickly reverts back to pure oxygen if unused.
- 3) Chemical water treatment leaves long-term chemical effects on the environment, some of which are negative. UV Ozone produces no negative impacts on the environment.
- 4) Ozone is the strongest, fastest, commercially available oxidant for water treatment, Odor Control, Corrosion Control, Disinfection and Sterilization.
- 5) Ozone oxidation reactions take place several thousand times faster than those of chlorine for destruction of bacteria, viruses, yeast, molds, cysts, mildew, and most other organic and inorganic contaminants.
- 6) Ozone in appropriate doses can treat all water borne pathogens, while chlorine cannot (given practical, safe doses.)
- 7) Ozone is generated on site and does not require storage.
- 8) You cannot over-dose with ozone as unused ozone escapes out of the water column and reverts to oxygen.

- 9) Ozone disinfection qualities are not dependent on pH, nor does the addition of ozone affect the pH of water.
- 10) Ozone oxidizes and destroys F.O.G. (Fats, Oils, & Grease) and other contaminants in water.
- 11) Ozone can significantly reduce levels of harsh chemicals such as chlorine and their by-products.
- 12) Ozone acts as a micro-flocculent, aiding in the removal of minerals such as iron and manganese.
- 13) Ozone leaves no unpleasant chemical taste or smell.
- 14) Ozone dissolved in water will not irritate skin, nose, or ears, nor will it dry out or leave a chemical film on skin.
- 15) Ozone's effectiveness can be measured with a simple ORP meter.
- 16) Ozone is less corrosive than chlorine in water.
- 17) In view of results of several studies examining the safety of chlorination, many municipalities are wanting to remove chlorine from their water treatment plants all together. The cause for this concern is the presence of chloroforms and other halomethanes in post-chlorine treated natural water. The most commonly encountered contaminants of this type are bromomethanes CHClBr , CHCl_2 and CHBr_3 along with the aforementioned chloroform all of which are suspected carcinogens.
- 18) With the advances in the technology used to generate Ozone, Ozone is becoming more affordable to install and cheap to operate. Typically an Ozone installation will pay for itself over 12 months in chlorine savings.

Bacteria & Viruses affected by UV Ozone

Pathogen	Dosage
Aspergillus Niger (Black Mould)	Destroyed by 1.5 to 2 mg/l
Bacillus Bacteria	Destroyed by 0.2 m/l within 30 seconds
Bacillus Anthracis (causes anthrax in sheep, cattle and pigs. Also a human pathogen)	Ozone susceptible
Bacillus cereus	99% destruction after 5-min at 0.12 mg/l in water
B. cereus (spores)	99% destruction after 5-min at 2.3 mg/l in water
Bacillus subtilis	90% reduction at 0.10-PPM for 33 minutes
Bacteriophage f2	99.99% destruction at 0.41 mg/l for 10-seconds in water
Botrytis cinerea	3.8 mg/l for 2 minutes
C. difficile	99.999% destruction at 0.6 mg/l for 2 minutes (in water)
Candida Bacteria	Ozone susceptible
Clavibacter michiganense	99.99% destruction at 1.1 mg/l for 5 minutes
Cladosporium	90% reduction at 0.10-PPM for 12.1 minutes
Clostridium Bacteria	Ozone susceptible
Clostridium Botulinum Spores. Its toxin paralyses the central nerve system, being a poison multiplying in food and meals.	0.4 to 0.5 mg/l threshold value
Coxsackie Virus A9	95% destruction at 0.035 mg/l for 10-seconds in water
Coxsackie Virus B5	99.99% destruction at 0.4 mg/l for 2.5-minutes in sludge effluent
Diphtheria Pathogen	Destroyed by 1.5 to 2 mg/l
Eberth Bacillus (Typhus abdominalis). Spreads typically by aqueous infection and causes typhoid.	Destroyed by 1.5 to 2 mg/l
Echo Virus 29: The virus most sensitive to ozone.	After a contact time of 1 minute at 1 mg/l of ozone, 99.999% killed.
Enteric virus	95% destruction at 4.1 mg/l for 29 minutes in raw wastewater
Escherichia Coli Bacteria (from feces)	Destroyed by 0.2 mg/l within 30 seconds in air
E-coli (in clean water)	99.99% destruction at 0.25 mg/l for 1.6 minutes
E-coli (in wastewater)	99.9% destruction at 2.2 mg/l for 19 minutes
Encephalomyocarditis Virus	Destroyed to zero level in less than 30 seconds with 0.1 to 0.8 mg/l.
Endamoebic Cysts Bacteria	Ozone susceptible
Enterovirus Virus	Destroyed to zero level in less than 30 seconds with 0.1 to 0.8 mg/l.
Fusarium oxysporum f.sp. lycopersici	1.1 mg/l for 10 minutes
Fusarium oxysporum f.sp. melonogea	99.99 % destruction at 1.1 mg/l for 20 minutes
GDVII Virus	Destroyed to zero level in less than 30 seconds with 0.1 to 0.8 mg/l.
Hepatitis A virus	99.5% reduction at 0.25 mg/l for 2-seconds in a phosphate buffer
Herpes Virus	Destroyed to zero level in less than 30 seconds wit 0.1 to 0.8 mg/l.
Influenza Virus	0.4 to 0.5 mg/l threshold value
Klebs-Loffler Bacillus	Destroyed by 1.5 to 2 mg/l
Legionella pneumophila	99.99% destruction at 0.32 mg/l for 20 minutes in distilled water
Luminescent Basidiomycetes (species having no melanin pigment).	Destroyed in 10 minutes at 100-PPM
Mucor piriformis	3.8 mg/l for 2 minutes
Mycobacterium avium	99.9% with a CT value of 0.17 in water <small>(scientifically reviewed document)</small>
Mycobacterium fortitum	90% destruction at 0.25 mg/l for 1.6 minutes in water
Penicillium Bacteria	Ozone susceptible
Phytophthora parasitica	3.8 mg/l for 2 minutes
Polioyielitis Virus	99.99% kill with 0.3 to 0.4 mg/l in 3-4 minutes
Poliovirus type 1	99.5% destruction at 0.25 mg/l for 1.6 minutes in water
Proteus Bacteria	Very susceptible
Pseudomonas Bacteria	Very susceptible
Rhabdovirus virus	Destroyed to zero level in less than 30 seconds with 0.1 to 0.8 mg/l
Salmonella Bacteria	Very susceptible
Salmonella typhimurium	99.99% destruction at 0.25 mg/l for 1.67 minutes in water
Schistosoma Bacteria	Very susceptible
Staph epidermidis	90% reduction at 0.1-ppm for 1.7 min
Staphylococci	Destroyed by 1.5 to 2.0 mg/l
Stomatitis Virus	Destroyed to zero level in less than 30 seconds with 0.1 to 0.8 mg/l
Streptococcus Bacteria	Destroyed by 0.2 mg/l within 30 seconds
Verticillium dahliae	99.99 % destruction at 1.1 mg/l for 20 minutes
Vesicular Virus	Destroyed to zero level in less than 30 seconds with 0.1 to 0.8 mg/l
Virbrio Cholera Bacteria	Very susceptible
Vicia Faba progeny	Ozone causes chromosome aberration and its effect is twice that observed by the action of X-rays