

“ELECTROX” ADVANCED ELECTRO CHEMICAL OXIDATION SYSTEMS

It is different!!!

State of the art user friendly non chemical water treatment system
Reduces dissolved organics from water and waste water
making the treated water reusable!



Ionic Engineering Technology Pvt Ltd

S.no.-1,5,12, Ground floor, B Wing
Mahalaxmi Heights
Mumbai Pune road, Pimrpi, Pune-411018
Maharashtra, India
Phone: 020-27475272
Email: contact@ionic.co.in
Web: www.ionic.co.in

IONIC is pleased to introduce the next generation water treatment system using "Electrox" electro chemical advanced oxidation technology to remove dissolved organics (COD,TOC) from water and get the right quality of water. Till recently activated carbon, Reverse osmosis, ion exchange, chemical oxidation, photo chemical oxidation etc. were the only options available or considered for reduction of organics (TOC) in the water inspite of its limitations and disadvantages.

"ELECTROX" Electro –oxidation

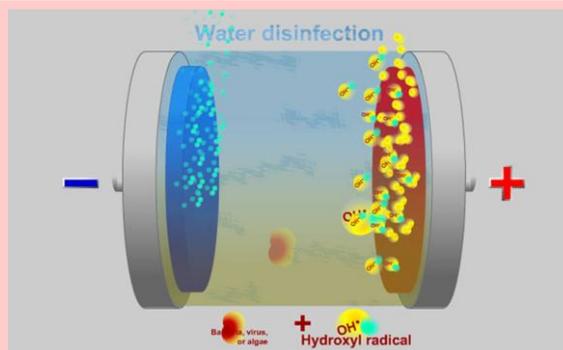
Electrooxidation is an electrochemical advanced oxidation process in which oxidation reactions occur by applying an electric field between the anode and cathode, it is designed to offer complete oxidation of all organic compounds (including persistent and toxic components) and ammonium in water.

In this process the cathode and anode is coated with conducting chemically inert material. These materials have catalytic properties which allow the oxidation of the pollutants, either by direct contact with the anode, or by oxidation in the media.

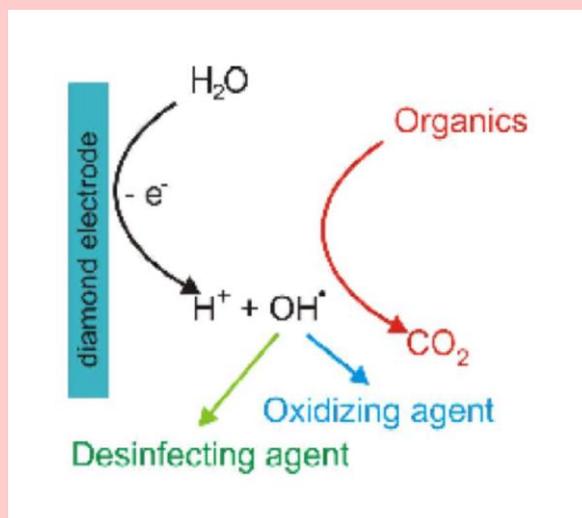
The new design and special electrodes offer very long life and show a higher oxidation capacity than other advanced oxidation technologies. It also allows the disinfection of treated water "in situ" and the reuse of treated water is possible

The application of this technique mainly causes the removal of:

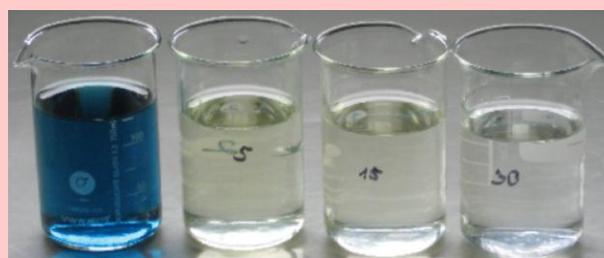
- Soluble organic matter
- Volatile or semi-volatile Hydrocarbons
- Many of persistent organic compounds
- Colour and odour
- Nitrogen compounds (nitrate, ammonia)
- Free cyanide and inorganic cyanohydrins
- Treated water disinfection
- Specific toxins: CN, pesticides, herbicides, PCBs, phenols, fungicides.
- Active pharmaceutical compounds: oestrogen, cortisone, antibiotics, EDCs
- Elimination of bacteria, viruses and parasites
- BTEX and PAHs
- Sulphides, thiols and amines



Water is passed through a series of special electrodes placed in a compact cell. A low voltage is applied between the electrodes. The oppositely charged ions get attracted to the electrodes. Clean, treated water flows out of the system.



Periodically the polarity of the electrodes are reversed to prevent scaling on the electrodes. The attracted ions drop from the electrodes.



Very powerful oxidising agent Hydroxyl radicals are generated on the surface of the anodes which reacts with organics and oxidises them completely and converts to carbon Dioxide. The entire process is handled automatically.

Depending on the nature and quantum of the organics in water the applied current and contact time is set to get the desired results.

BENEFITS:

- Can be Remotely operated, monitored with your desktop/laptop/smart phone !
- Simple to Operate – does not require any specialized skills to operate
- Compact in size – making it possible to deploy almost anywhere
- Simple, Flexible & Reliable!
- No wastage of water
- No sludge generation
- Complete mineralization of organics to carbon di oxide
- Low Power Consumption – can run using alternate energy sources
- No Chemical Usage – does not use any chemicals in its normal operation
- Lowest Operating Costs

APPLICATIONS

Some of the fields of applications where ELECTROX makes the most economic impact are:

1. Drinking water treatment of surface and bore well water for TOC reduction, disinfection
2. Condensate polishing to remove organics from sugar mill evaporator condensate water
3. Condensate polishing to remove organics from fruit evaporator condensate water
4. Textile waste water decolorisation and recycling
5. Zero discharge system evaporator in API bulk Drug industries condensate polishing
6. COD reduction in plating bath waste water discharges and rinses

The right treatment approach

- A. Besides the Capital costs, there are many other parameters that goes in determining the economics of operating a water treatment plant.
- B. Energy Consumption – what does it take to operate a treatment plant can it
- C. be run using alternate energy sources?
- D. Reducing water consumption / wastage – How much input water do we need
- E. to treat? - Can we reduce the wastage given that water is so scarce?
- F. What kind of consumables are required to operate the plant daily.
- G. Does the water treatment plant require skilled personnel to operate it

- H. How dependable is the water treatment plant to produce the yield
- I. consistently - can it run smoothly for a long duration of time

THE WATER FOOTPRINT

The water footprint of an individual, community or business is defined as the total volume of freshwater that is used to produce the goods and services consumed by the individual or community or produced by the business. At a time when freshwater availability continues to be a challenge globally, its time to think on the choice of technologies that will have a major impact on the way you use and treat water.



IONIC
Engineering Technology Pvt. Ltd.

1,5 & 12 Ground Floor, Mahalaxmi Heights, 'B' Wing, Mumbai-Pune Highway, Pimpri, Pune 411 018, Maharashtra, India.

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