



GANESH ENVIRO SYSTEMS (P) LTD.

STP, ETP, WTP, WWTP, RO Plant, DM Plant Consultant & Manufacturers.

(Division of Aqua Enviro Equipments)

An ISO 9001 : 2008 certified company

SWIMMING POOL TREATMENT PLANT

Improvement in quality of pool water is attained by elimination of chemical content. Swimming pool water pollution is mainly caused by swimmers. The pollutants can be divided into three groups Micro organisms, organics and solid particles.

Each swimmer carries a large number of micro organisms such as bacteria, virus which can cause disease. Organics come from urine, sweat, and saliva which contain ammonia, urea and amino acids. These react with chlorine and form chloramines which irritate the eyes and skin. Solid particles are due to skin flakes, hair and dust.

KEY BENEFITS OF USING OZONE IN SWIMMING POOLS

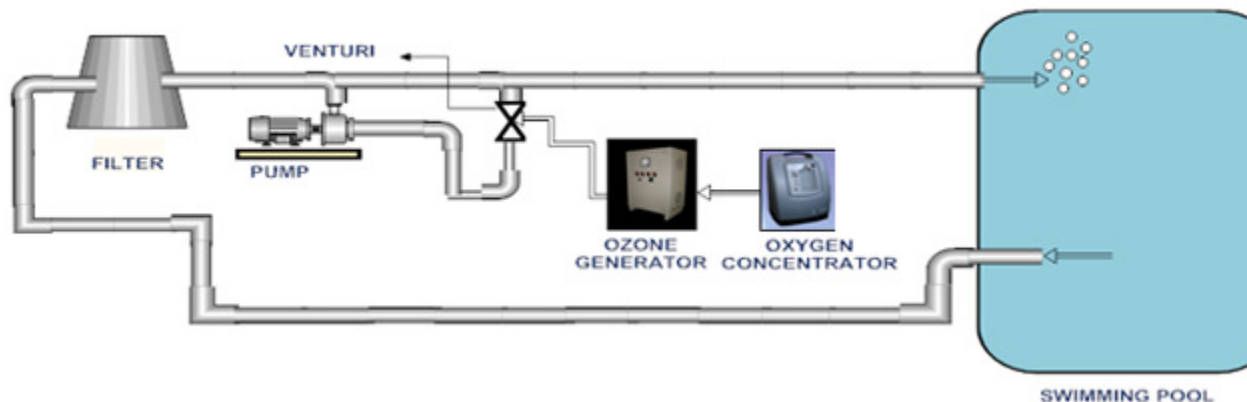
- Bacteria kill rate is up to three thousand times faster
- 50% stronger oxidizer than chlorine
- Reduces traditional chemical use between 60% - 90%
- Reduce handling and storage of unsafe chemicals
- Reduce constant purchasing of harmful chemicals
- No formation of dangerous by-products
- Eliminate red, irritated eyes and dry, itchy skin
- Eliminate costly replacement of faded swimwear
- Remove unpleasant chlorine / chloramines odors
- No adverse health or environmental effects
- Improvement of the filter and coagulant capacities. This leads to a reduction of coagulant use and less backwashing of the filter is required

DOSAGES

The size of an ozone generator for a particular pool is calculated by the following points.

- Quantity of water in m³
- Filtration capacity in m³/hr
- Load. (max swimmers in the pool at a particular time)

Diagram of Swimming Pool





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ADVANTAGES OF SWIMMING POOL OZONATION

- Internationally most accepted for swimming pool application
- Latest & time tested technology in US & Europe
- More effectively destroys Bacteria, Viruses, Fungi, and Algae & Spores
- 1.33 times more powerful than chlorine
- 3,100 times faster than chlorine
- Ozone has a micro-flocculation property
- O3 destroys organism such as phenols, pesticides, herbicides & PCBs
- Oxidizes inorganic such as cyanides, sulphides & nitrites
- Oxidizes soluble ions & manganese
- Removes Colours
- Removes Odors
- Reduces Turbidity
- Reduces TDS
- Operates bet. pH 6 to 9
- No eye irritation
- No skin blackening
- No harmful Disinfectant Byproducts (DBPs)
- If ozonated water swollen not dangerous
- Environmentally friendly Gas
- Waste (Backwash) water does not require any treatment

NON OZONATED POOL



OZONATED POOL



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OZONATION V/S. CHLORINATION TREATMENT

CHLORINATION

- 100 year old & outdated Technique
- Chlorine chemical reaction dependent on pH & Temp. of water
- Chlorine is lesser faster than ozone
- Chlorine leaves harmful byproducts in the water
- Chemical water treatment leaves long-term Chemical effects on environment
- Chlorine has less oxidant power
- Chlorine cannot give practical safe doses
- Chlorine chemical require storage facility
- Chlorine leaves chlorinated smell and taste to water
- Chlorine dissolved in water will irritate skin, nose or ears & leaves chemical film on skin
- Chlorine has oxidational potential in water is 1.36
- Effects of chlorine on bacteria, viruses is moderate
- Chlorine is not environment friendly
- Chlorine is good colour removal
- Carcinogen formation is likely
- Organics oxidation is moderate
- Chlorine has not micro flocculation property
- Half life of chlorine in water is 2 – 3 hrs
- Chlorine cannot remove lead metal
- Operational cost of using chlorine is moderate

OZONATION

- Ozone has been known for more than one hundred years
- Ozone disinfection qualities are not dependent on pH, nor does the addition of ozone effect pH of water
- Ozone is over 3000 times faster to purify water
- Ozone leaves no harmful by products in the water. Ozone quickly reverts back to oxygen if unused
- Ozone leaves no long term effects on environment
- Ozone oxidation reaction takes place several thousand times faster than chlorine
- Ozone in appropriate doses can treat all water borne pathogens
- Ozone is generated on site and does not require storage
- Ozone leaves no unpleasant chemical taste or smell
- Ozone dissolved in water will not irritate skin, nose or ears, nor will it dry out or leave a chemical film on skin
- Ozone has oxidational potential in water is 2.07
- Effect of ozone on bacteria, viruses is excellent
- Ozone is environment friendly
- Ozone is excellent colour removal
- Carcinogen formation is unlikely
- Organics oxidation is high
- Ozone is a good micro flocculation agent



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- Half life of ozone in water is 20 mins
- Ozone can remove lead metal
- Operating cost of using ozone is low

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