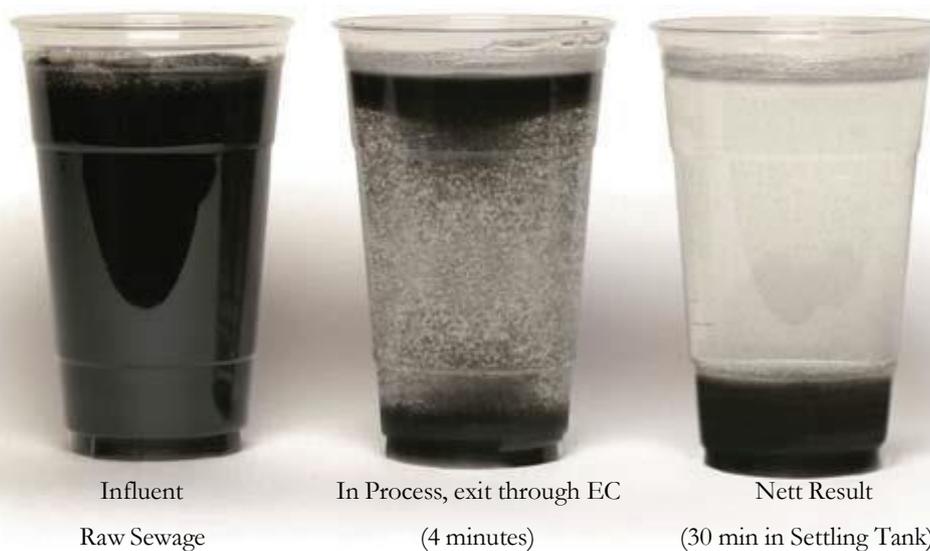


## Electro coagulation (EC) Technology For Treatment of Domestic & Industrial Sewage & Effluent

Electro coagulation (EC) is a water treatment process whereby an electric field is applied across plates to remove various contaminants from water.

An Electro coagulation water treatment system represents a major advancement in wastewater treatment - A revolutionary electrical-based technology for effectively treating complex waste streams economically and on-site



Current is applied to the electrolytic cell plates causing trace amounts of the plate material to be dissolved into the water. The action is similar to adding separation chemicals (polymers) to a chemical treatment system but much less expensive.

**Coagulation** – As previously defined, the electrical current and trace dissolved metals from the electrolytic cell plates, cause suspended matter to come together, forming larger particles. **Flotation** – During the reaction in the cell housing, oxygen bubbles are formed and attached to the coagulated matter, causing it to rise to the surface in the separation tank where it is removed and transferred to the sludge holding tank. The air bubble separates from the separated contaminant allowing it to sink to the bottom of the sludge holding tank where it stays until it is properly disposed of by the customer.

## Special Features of the Electro Coagulation Process Plant:

- Chemical Free, Non Biological
- Skid Mounted Modular in Construction
- Start Stop at user own will , user friendly
- Custom Designed based on the Volume of waste water
- Easily Expendable
- Can be Retrofitted in the existing facility
- Small Foot Print
- Very Low Operating Cost
- Less requirement of civil construction
- Simple & Easy to operate and maintain
- Sludge production can be **30-70% LESS voluminous** compared to chemical processes
- Non-selective process on a wide variety of contaminants

## Function of Electro Coagulation Process Removes :

- Organic
- Suspended Solids
- Turbidity
- Algae
- Odour
- Fat , Oil and Grease
- Heavy Metals
- Colour & Disinfects water

## Advantages of Electro Coagulation Process:

- Removal of High Contaminant in the waste water
- Save Energy & Chemicals
- Far less Skill require in Operating & Maintenance
- Noiseless Operation
- Low Capital , Operating & Maintenance Cost
- Color Removal
- BOD Removal
- COD Removal

Parameters	Inlet	Before Tertiary Treatment	Post Tertiary Treatment
<b>BOD Mg/L</b>	250-300	<50	<20
<b>COD Mg/L</b>	400-500	<150	<100
<b>TSS Mg/L</b>	150	<10	<1
<b>Oil &amp; Grease</b>	<20	<3	Nil

### Electro coagulation (EC) Base Sewage Treatment Plant Process Flow:

- Step 1: Lifting of raw sewage from equalization tank / collection tank through Pump & Send it to Electro Coagulation (EC) reaction chamber
- Step 2: Aluminium Cell base EC reactor applied control electrical field in to the Raw sewage water & Current is applied to the electrolytic cell plates causing trace amounts of the plate material to be dissolved into the water. Electrical current and trace dissolved metals from the electrolytic cell plates, cause suspended matter to come together, forming larger particles.
- Step 3: After EC reactor process , water along with suspended matter will go to ozonation tank where adequate quantity of ozone will be deposing in to the Ozone tank for the purposes of disinfection (primary use) and also decontamination or remediation. Ozone is a very strong oxidant and virucide. Ozone is more effective than chlorine in destroying viruses and bacteria. The ozonation process utilizes a short contact time (approximately 10 to 30 minutes). There are no harmful residuals that need to be removed after ozonation because ozone decomposes rapidly. After ozonation, there is no re-growth of microorganisms, except for those protected by the particulates in the wastewater stream. Ozonation elevates the dissolved oxygen (DO) concentration of the effluent. The increase in DO can eliminate the need for re-aeration and also raise the level of DO in the receiving stream. Not Require any aeration. Remove heavy bacteria load in water. Remove contamination in water.
- Step 4: After the ozonation process , water will be transferred to Sludge separation tank / tube settler. The air bubble separates from the separated contaminant allowing it to sink to the bottom of the sludge holding tank where it stays until it is properly disposed of through sludge filter / bag filter.
- Step 5: After separation of sludge , treated water send to IMT (Inter Mediate Tank ) where treated water will have vey negligible amount TSS, will be lifted through pump & send it to Carbon filter for final polishing of water.
- Step 6: After Carbon Filter, treated water will be collected to collection tank for further line of action.

