

ECO 2000

Wastewater treatment
by electro coagulation system

ECOTEAM®
Environmental Technologies



Fields of application

- Primary water
- Waste water
- Surface treatment
- Textile
- Ceramic
- Environmental remediation
- Landfill leachate treatment

ELECTROCOAGULATION

The electro coagulation system ECO2000 which has been patented by ECOTEAM.

The ECO2000 use the electro coagulation (EC) processes to increase the quality of depurated water.

The system uses the principle that an electrical potential applied to an aqueous solution is able to develop an oxide reduction reaction. The ECO2000 reactor is made up of an electrolytic system with anodes and cathodes.

A continuous (DC) power source (Rectifier) corrode the anode due to oxidation processes while the cathode close the system with reduction processes.

The cell consist of conductive metal plates "sacrificial electrodes" which can be of the same or of different materials. The ECO2000 reactor uses iron or aluminium electrodes. The electrical arrangement of monopolar electrodes with cells in series is electrically similar to a single cell with many electrodes and

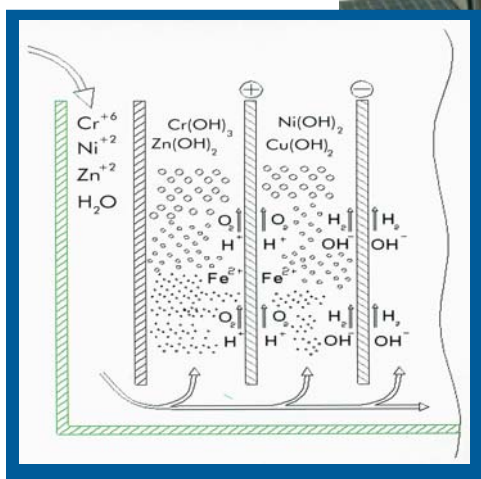
interconnections. In a series cell arrangement, a higher potential difference is required for a given current to flow because the cells connected in series have higher resistance. The same current would, however, flow through all the electrodes. On the other hand, in parallel arrangement the electric current is divided between all the electrodes in relation to the resistance of the individual cells.

ECO2000 reactor proposed by ECOTEAM with thanks to over 20 years of development is able to give a system that is completely reliable in which every phase is under PLC control.

ECOTEAM have applied the electro coagulation process in many fields like:

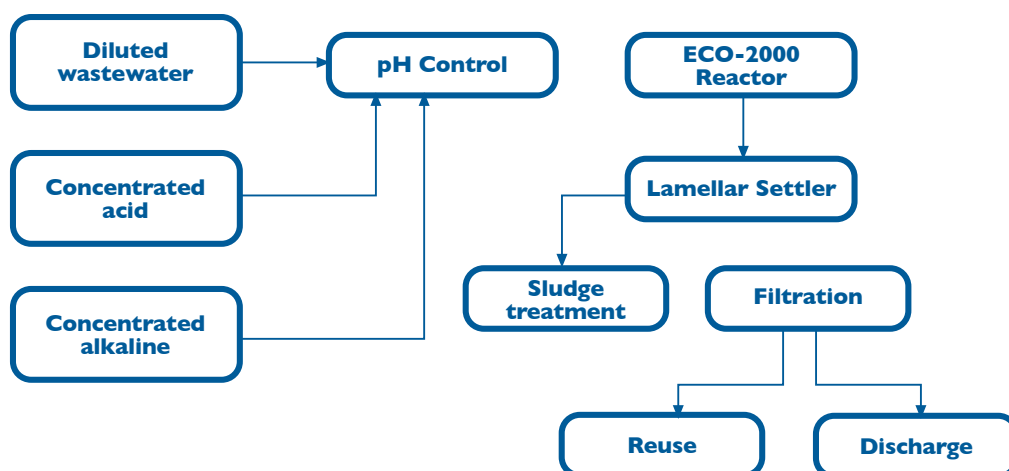
1. Plating
2. Coating
3. Vibro Finishing
4. Textile
5. Soaped water

	Cr ^{VI}	Cu	Ni	Zn	Fe	Sn	Al	Pb	Mn	CN ⁻ tot	COD	Tenside
Inlet (mg/l)	200	200	200	200	200	200	200	200	200	10	800	20
Outlet (mg/l)	<0.2	<0.1	<2	<0.5	<2	<10	<1	<0.2	<2	<0.5	<160	<2
Reduction (%)	>99.9%	>99.9%	>99.9%	>99.9%	>99.9%	>99.9%	>99.9%	>99.9%	>99.9%	>95	>80%	>90%



Advantages of ECO2000 process include:

- Coagulation dosing (Fe²⁺ or Al³⁺) without counter-ions like Cl or SO₄²⁻
- Reduction of Cr VI to Cr III without chemical product
- De-complexation of elements like AlF₃
- Reaction with As, Se, ect.
- Precipitation of PO₄³⁻ with iron or aluminum
- Reduction of COD and BOD
- Electro-flotation with H₂ and O₂ bubble with size <10⁻² mm
- Electro-oxidation with special electrodes



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