

REDBOX
Electrocoagulation

Analyse Results

Corrugated cardboard

Pollution	Unit	Influent	Effluent	Reduction
Ar	(ug/l)	4.9	0.5	89%
Cd	(ug/l)	0.6	< 0.1	83%
Cr	(ug/l)	62	< 0.5	99%
Cyanide (tot.)	(ug/l)	5050	630	87%
Cu	(ug/l)	22000	25	99%
Pb	(ug/l)	28	10	64%
Ni	(ug/l)	79	18	77%
Ag	(ug/l)	< 40	< 10	75%
Zn	(ug/l)	780	< 10	98%

Galvanic industries

Pollution	Unit	Influent	Effluent	Reduction
Cr	(mg/l)	0.4	0.2	50%
FE	(mg/l)	4	1.3	67%
Cu	(mg/l)	4.1	0.03	99%
Pb	(mg/l)	0.9	0.3	66%
Mineral oil	(mg/l)	74	1	98%
Ni	(mg/l)	1.3	0.4	69%
Sn	(mg/l)	0.64	< 0.1	84%
Zn	(mg/l)	9.4	0.03	99%
Susp. solids	(mg/l)	86	17	80%

Metal industries

Pollution	Unit	Influent	Effluent	Reduction
PH		6.2	8.4	
Cd	(mg/l)	5.5	< 0.05	99%
Cr	(mg/l)	2	< 0.1	95%
COD	(mg/l)	5600	1900	66%
Fe	(mg/l)	60	10	83%
Cu	(mg/l)	17	0.25	98%
Pb	(mg/l)	220	0.44	99%
Mo	(mg/l)	1	0.6	40%
Ni	(mg/l)	4	0.43	89%
Sn	(mg/l)	10	< 2	80%
Zn	(mg/l)	19	0.11	99%

**Electroflotation
can solve your
problem!**

Morselt Watertechnie BV

Morselt Watertechniek BV produces wastewater treatment units for the industry for many years.

Put it to the test!

Naturally, practical experience supplies the best proof of the possibilities offered by the Morselt Redbox. Do you want to put it to the test with your waste water? If so, send five litres of your industrial waste water to Morselt Watertechniek BV (Morselt Environmental Engineering) and our laboratory will investigate whether the Redbox can purify it within your environmental norms. We will likewise calculate what capacity is necessary and, of course, what the Redbox will mean for your volume of residual waste.

REDBOX
Electrocoagulation

Morselt Redbox, efficiently separates your waste water into waste and water. Economic and environmental-friendly waste water purification.



Onze meest gebruikte materialen;

- PE80, PE100, PE100RC
- PP-H
- PVC
- PVDF

- Purification without chemicals
- Targeted at an optimum result
- Effective for years to come
- A proven technology

Efficiently separates your waste water into waste and water.

The Morselt Redbox technology is a simple and very effective technique for absolute cleaning of your waste water. This Redbox-technology will completely remove various toxic substances from your waste water. Recycling the process water is an option. Another advantage is that the Morselt Redbox can be adjusted in such a way, that it will clean your waste water fully according to the government limits. In short: a cost saving solution for purification of your waste water, fully tailored to your requirements.



Untreated waste water



Waste water with flocs



Treated water

Electrocoagulation

Electrocoagulation is an advanced water treatment technology and is used to remove a wide range of pollutants such as metal ions, suspended solids, colloidal solids, coloured compounds, dissolved solids, fat, oil, diesel, complex organic compounds, bacteria and viruses.

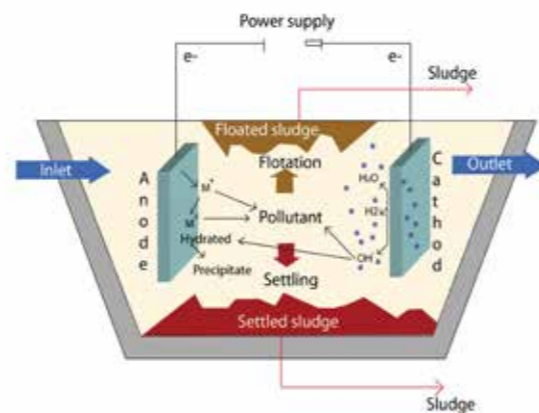
The advantages of electrocoagulation are the versatile range of multiple pollutant removal; no additional chemical usage, less sludge production and a stable and reliable setup.

Principle of electro coagulation;

Classical Electrocoagulation usually consists of two iron or aluminium plates in the wastewater with a certain conductivity which is connected to a power supply.

When power is applied, iron will oxidize to Fe^{3+} and water will reduce into OH^- . Together they form complexes such as $Fe(OH)^{2+}$, $Fe(OH)^+$, $Fe(OH)_3$ and $Fe_2(OH)_2^{4+}$ due to their polarity they attract pollutants.

Most of these complexes dissolve poorly into water, and will therefore precipitate and withdraw pollutants from the water. Morselt uses iron plates for this process.



Note; the formation of hydrogen will disturb sludge settling. Therefore this is mostly committed into a separate settler. In this design flotation is chosen as a result of the experience of Morselt, combined with the fact that the coagulation flocs will tend to float.

Electrocoagulation reactor system

The Electrocoagulation reactor is the reactor that electrochemically treats the influent. The treatment will remove the COD/BOD particles partly nitrogen components, phosphate and colour. All these components will be captured in the coagulation flocs and removed from the water by sedimentation or flotation.

The electro-coagulation pilot plant is a complete system built on its own framework containing the following items;

1. Distribution system that divides the incoming water over the parallel placed reactors.
2. Reactor including the steel Anode and Cathode plates.
3. Coagulation vessel.
4. Flotation unit.
5. Salt/chemical storage vessel + dosing pump.
6. Inverters that supply the required current.
7. External filter press



Siemens S7 PLC



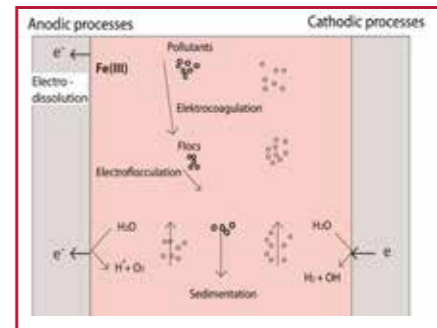
Reactorbak

Effective for years to come

The Morselt Redbox will fit easily into your process. The equipment is available in various designs and can, if necessary, be made entirely to your own specifications. The sturdy Redbox will give years of troublefree service. Moreover, the system is maintenance-friendly and requires no in-depth technical knowledge.

Broad application

The Morselt Redbox can remove a wide range of substances from water, which is why the system has been used successfully in many branches of industry. You can find the Morselt Redbox in, for example, the galvanizing industry, the metal processing industry, packaging factories, textile refining companies, paint factories, container cleaning, printing and paint processing companies. And the list is growing continuously.



The amount of filtercake after elektroflotation



The amount of filtercake after physical/chemical treatment



Wastewater turns to water