

MUST | ECtop^[lab] – Lab-Reactor Electro-Coagulation

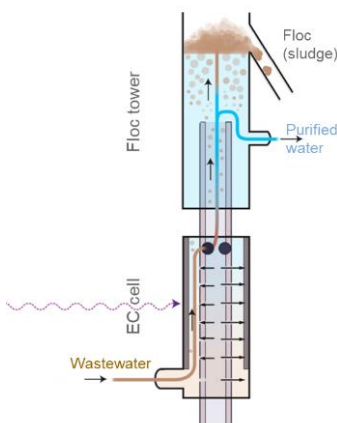
EN | February 2021

The MUST ECtop technology is a high effective wastewater treatment method for purifying difficult and demanding types of wastewater. The ECtop technology is a continuous electro-coagulation method, which has been developed over several years with development partners and universities as research partners. The focus of the technology is on wastewater, which contains dissolved impurities that are difficult to precipitate and which can be efficiently treated in a process loop for reuse.

The ECtop method is based on a proven electro-coagulation technology, which uses the chemical-physical advantages for an efficient separation of predominantly dissolved or colloidal impurities.

The main component of the ECtop method is the EC module, in which the purification takes place.

EC Module – Scheme



The module is divided into an EC cell and a floc tower. The EC cell is a coaxial unit where, by applying direct current, the dissolved or colloidal particles are flocculated directly in the flow of the wastewater. The flocculation is achieved through the dissolving and applying ions, which can be of different types, depending on the wastewater and its impurities. In addition, the advantage of the vertical designed method and the function as a small electrolysis unit, are used in a targeted manner. Here, a tiny quantity of hydrogen is generated, which combines with the coagulated impurities and are caused to float as sludge or herewith so-called floc. The cleaned wastewater is discharge by using the siphon effect and the floc is geodetically extracted.

Advantages for industries:

- Oil and gas industry with cleaning and reusing of process water for improved performance
- Mining and metallurgy industry with separation of particles and recovery of valuable minerals and metals
- Pulp & Paper industry with the possibility of a closed water cycle and maintaining the process water temperature
- Waste landfill sites with elimination of heavy metals and toxic organics
- Textile industry with treatment and reuse of the process water
- As well as other industries

ECtop[lab] – Lab-Reactor



Using ECtop [lab], customer tests can be carried out quickly and efficiently.

Our specialists can carry out electro-coagulation tests directly at customers site using a compact lab-reactor structure and provide an assessment of the cleaning performance that can be achieved.

Flocculation in the floc tower



Framework conditions for ECtop[lab]-tests:

- Area for carrying out the tests - ideal in a laboratory or wet area
- Batch feeding of wastewater samples (throughput approx. 20l/h)
- Possibility of chemical analysis or initial assessment

Example of an achieved cleaning:



From left to right: wastewater, treated wastewater and floc

Scope of tests with ECtop[lab]:

- Scope usually within 3 to 5 days on site
- 1 specialist from MUST



MUST ECtop – Method



MUST ECtop iPlant – mobile and fully automated test installation with 4 - 6 m³/h purification capacity

