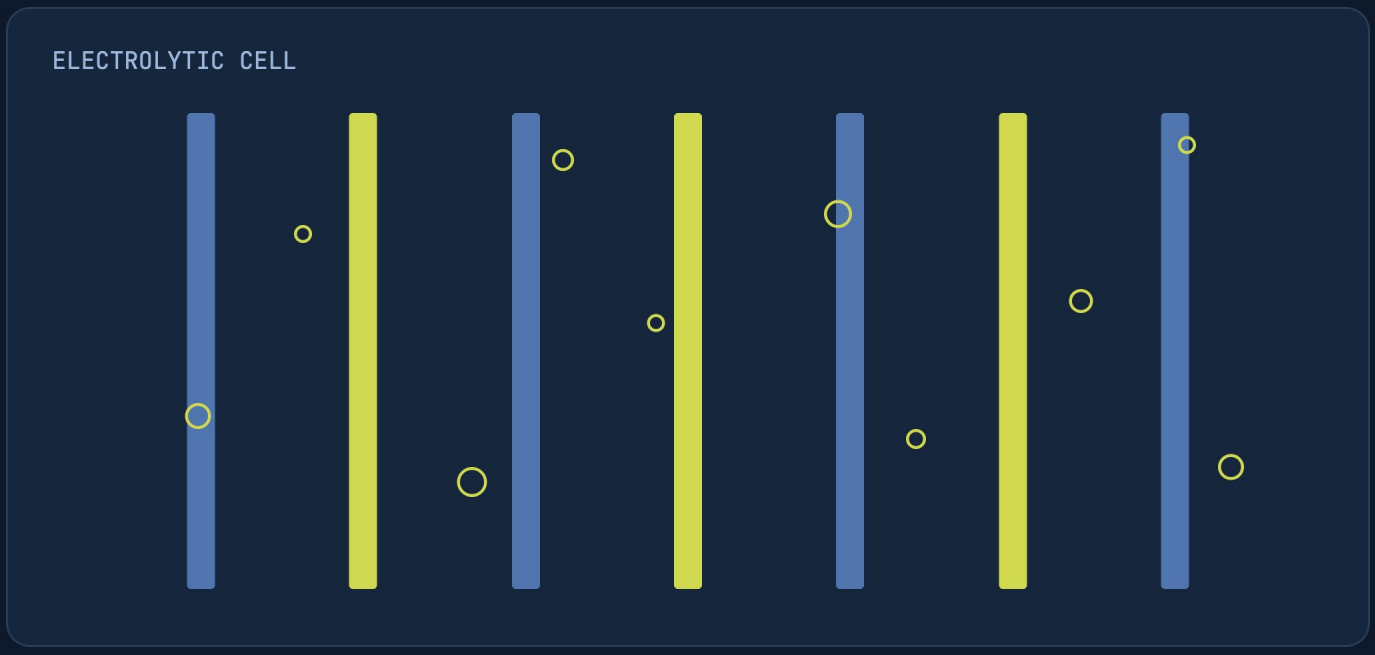
purity
Environmental Technologies

ECF



Conceptual visual: electrodes and microbubbles.

ECF · ElectroCoagulation-Flotation

Industrial wastewater treatment systems powered by ECF technology

Reducing treatment costs, managing complex industrial effluents and recovering water for reuse in production processes.

WATER REUSE | NO CHEMICALS | LOW ENVIRONMENTAL IMPACT | MODULAR TECHNOLOGY | COST REDUCTION

01 · OUR SOLUTION

Industrial wastewater treatment: a growing challenge

Rising water supply, treatment and disposal costs, limited availability of authorised disposal facilities and increasingly stringent discharge limits call for effective, sustainable solutions. PURITY manufactures ECF-based systems to tackle complex wastewater, reduce costs and facilitate water reuse.

80%	20 ft	12 m²	0
potential overall savings on treatment costs	transportable, stackable containers	matching the capacity of a conventional 300–500 m² plant	added chemicals: electricity only

PURITY data. Performance of each system depends on the wastewater to be treated.

Six key features of the PURITY solution

01

Complex wastewater

Mechanical engineering, landfills, Oil & Gas: wastewater that is complex and costly to treat, addressed with solutions effective in both quality and cost terms.

02

Fast return on investment

Addresses the main wastewater treatment cost drivers. Systems meet Industry 4.0 requirements.

03

Modular and scalable

20-foot containers, easy to transport and position, stackable where necessary. Commissioning can take just a few hours.

04

Lower environmental impact

No chemical dosing: the process uses electrical current. Sludge production is dramatically reduced.

05

Plug & Play, remote operation

Wastewater inlet, treated-water outlet, power supply. Insulated, climate-controlled unit, monitored remotely via app.

06

Integration with other processes

Complements an existing plant, even for a single contaminant, or replaces it. A circular-economy approach that increases water reuse.

02 · TECHNOLOGY

ECF

ElectroCoagulation-Flotation

Electrolytic treatment activates chemical and electrochemical reactions and physical processes that transform, aggregate and separate contaminants. Cell geometry, electrodes and the RDD power supply are designed for each application.

Electrocoagulation
Contaminants aggregate into separable flocs.

Electroflotation
Gas microbubbles carry flocs to the surface.

Redox reactions
Reactions that transform certain substances.

Key results

- COD and BOD reduction
- Almost complete removal of heavy metals
- Near-total phosphate reduction
- Solvent reduction
- Oil removal and emulsion separation
- Reduction of sulphides, nitrites and cyanides
- Bactericidal effect
- Near-total hydrocarbon removal

Application fields

Mechanical engineering

· Drilling wastewater
· Vibratory finishing and tumbling
· Painting and metal phosphodegreasing
· Die casting and emulsified oils
· Metal impregnation

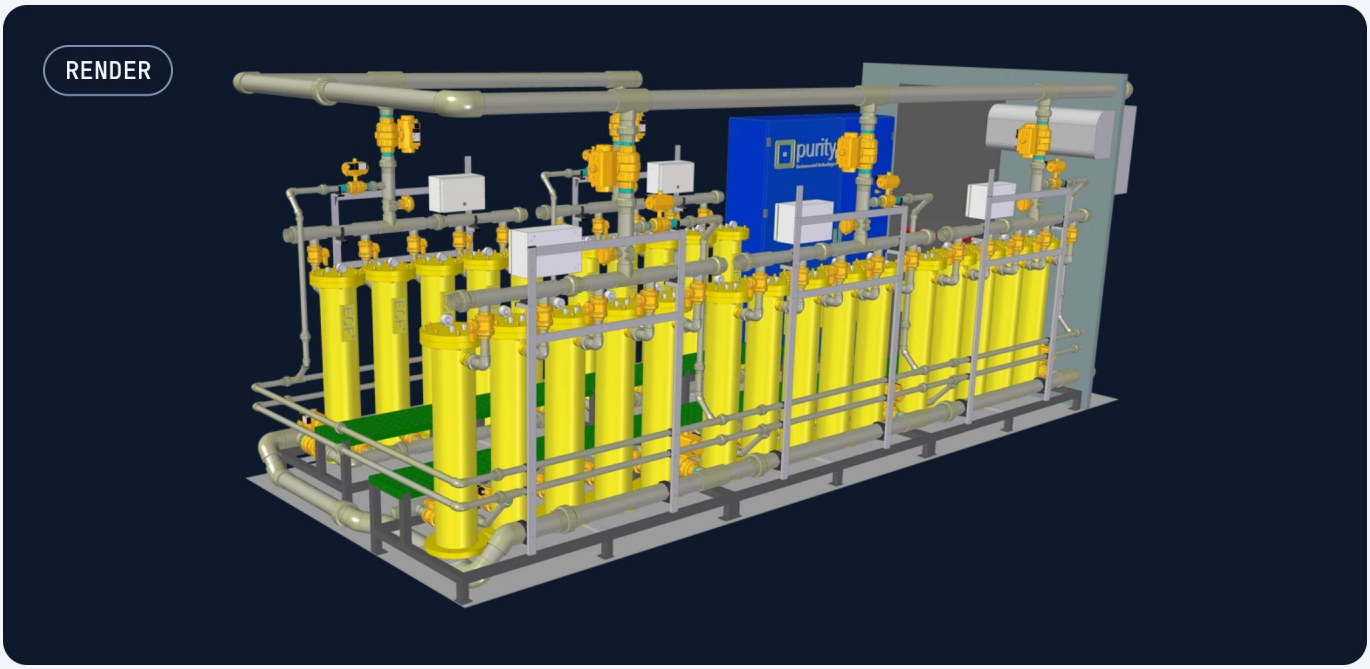
Oil & Gas

· Landfill leachate
· Groundwater remediation
· Water with solvents and hydrocarbons
· Water affected by algae and bacteria
· Pretreatment for physicochemical or biological plants

Landfills

Chemical industry

Under research: tannery wastewater, PFAS-containing water, chemical and pharmaceutical effluents.



System housed in a 20-foot container

Do you have industrial wastewater to treat?

Wastewater characteristics and treatment goals guide the selection of process parameters. Every PURITY system is built in three steps.

01

Wastewater analysis

Water composition and target contaminants.

02

Experimental trial

Performance verified on the actual wastewater.

03

System sizing

Full-scale plant design.

purity
Environmental Technologies

Designed and manufactured in Italy

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