

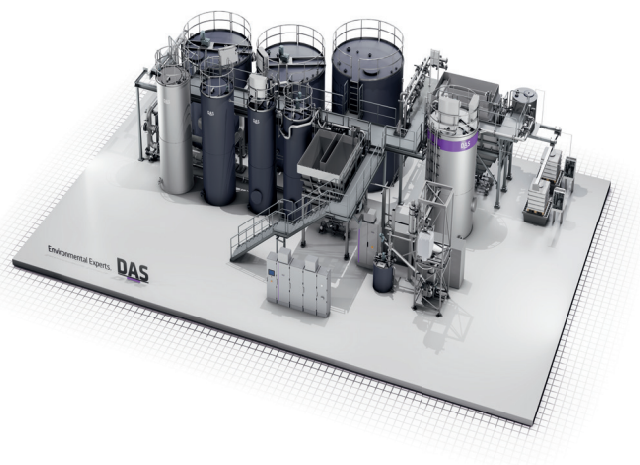
Chemical-Physical Methods for

WASTEWATER TREATMENT

Chemical-physical processes for wastewater treatment play a decisive role in protecting the precious resource of water and are characterised by their reliability, high efficiency and cost-effectiveness.

Efficient Solutions for Clean Water

As experts in water treatment, we have developed customised wastewater treatment solutions for our customers in the **semiconductor, solar, battery, food, beverage, pharmaceutical and other industries**. Our broad process portfolio is designed to meet the specific challenges of these industries. The complexity of the wastewater composition often requires multi-stage treatment combining different chemical-physical processes. By utilizing these technologies, we can achieve cost-effective and highly efficient solutions for treating various types of wastewater.



Chemical-physical water treatment plant for semiconductor industry

Your advantages at a glance:

- › **Efficient removal of contaminants:** High efficiency in the removal of heavy metals, silicon, aluminium, fluorides, arsenic and suspended solids (particles).
- › **Flexibility:** System configuration & modular design of the system customised to your needs. Batch or continuous process design possible.
- › **Quality:** Innovative solutions following the highest environmental technology standards and quality requirements, make us your reliable partner.
- › **Sustainability:** Reduction of environmental pollution and conservation of resources through water recycling, resource recovery and heat recovery.
- › **Cost efficiency:** Optimised processes for lower chemical consumption and lower investment and operating costs.

Our holistic approach covers all project phases, from testing, planning, procurement and construction through to site supervision and commissioning.

Most important chemical-physical methods:

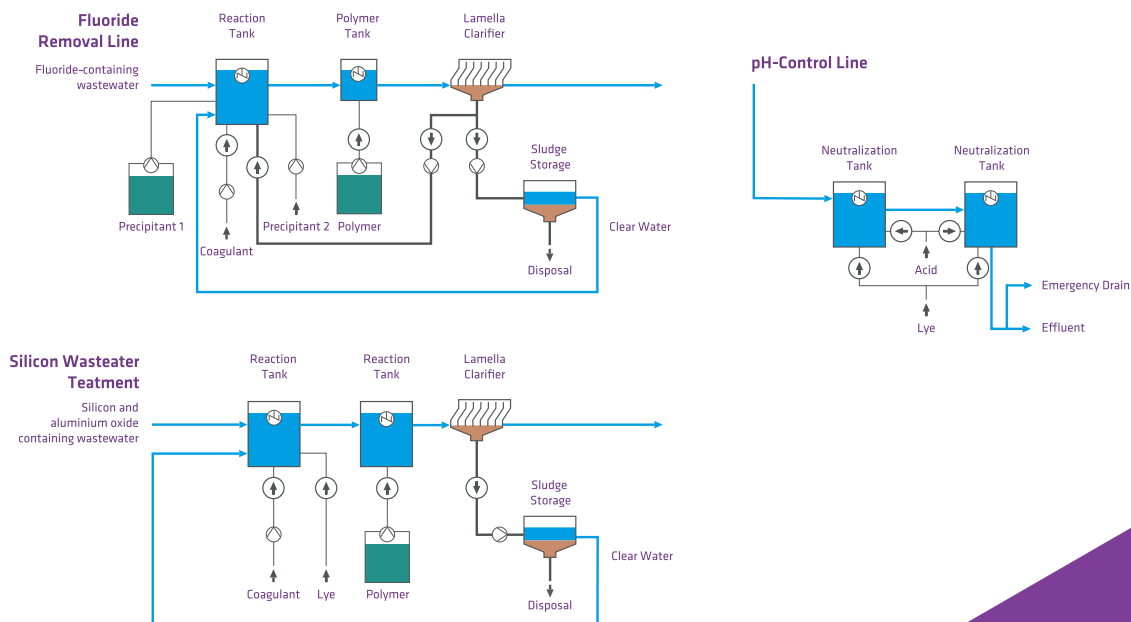
- › Coagulation, flocculation, precipitation
- › Flotation
- › Ion exchange
- › Sorption
- › Oxidation
- › Membrane filtration
- › Activated carbon filtration (ACF)
- › Neutralisation

Use case: Innovative Water Treatment for the Semiconductor Industry

DAS Environmental Experts has implemented a state-of-the-art wastewater treatment system for a customer in the semiconductor industry. Advanced semiconductor manufacturing requires effective and reliable wastewater treatment. Special emphasis was given to thorough planning, ensuring reliable removal of the contaminants, optimized resource efficiency and compliance with the environmental regulations and local conditions.

The project comprises three chemical-physical treatment lines:

1. Fluoride treatment
2. CMP wastewater treatment: removal of solids (silicon and aluminium)
3. Neutralisation (adjustment of the pH value)



Technical specifications:

- › Guaranteed discharge values: Fluoride concentration $\leq 10 \text{ mg/L}$ | Total suspended solids (TSS) $\leq 300 \text{ mg/L}$ | pH value = 6 to 11
- › Continuous operation for maximum productivity
- › Fully automated operation for minimum personnel deployment
- › Compact design for optimum space utilisation

Contact Us!

Benefit from our expertise
for your customised
wastewater treatment solution!

DAS Environmental Expert GmbH
Goppelter Str. 44, 01219 Dresden
Germany

Phone: +49 351 40494-300
E-Mail: sales-water@das-ee.com