

Modular Fabrication

**MODULAR SKIDS
PRESSURE VESSELS
SCRUBBERS**

ergil®



The Challenge

Modern semiconductor fabs depend on highly complex water, chemical and air-handling systems. Projects face aggressive schedules, strict purity and safety standards, and growing ESG expectations. Traditional stick-built construction on crowded sites often leads to delays, rework and cost overruns making it difficult to deliver critical utilities on time and within spec.



Schedule

Fabs need to ramp up quickly, but on-site construction is slow, weather-dependent and hard to coordinate with other trades, increasing the risk of missed milestones.

Quality

Every weld, lining and pressure test must be traceable and compliant with ASME, PED and local codes. Managing this across multiple subcontractors makes QA/QC complex and costly.

Sustainability

Owners and investors demand lower emissions and waste, yet many fabrication routes are still energy-intensive and generate significant scrap, limiting ESG performance.

Site Complexity

Congested sites, cleanroom interfaces and strict safety rules restrict work hours and crane access. This drives up installation time, labor costs and overall project risk.

Solution

We deliver modular, factory-built utility and process systems for semiconductor fabs including **ultra-pure water, wastewater, chemical dosing, absorbers, scrubbers** and **lined process tanks**.

All modules are engineered, fabricated and pre-tested in our 100% solar-powered Mersin facility under a single QA/QC system certified to **ASME, PED, DNV** and **ISO**. Units arrive on site ready for connection, cutting schedules while improving safety, traceability and overall project certainty.



Modular Skid Systems

UPW, wastewater, chemical dosing and gas scrubber skids engineered for fast hook-up, standardized layouts and repeatable performance across fab projects.

Pressure Vessels & Tanks

Rubber/GRP lined and stainless-steel vessels for acids, solvents and ultrapure water, manufactured to international codes with full material and welding traceability.

Absorbers & Scrubbers

Packaged units for VOC and acid-gas abatement, helping fabs meet strict air-emission limits while minimizing pressure drop and operating costs.

Steel Structures & Pipe Racks

Prefabricated utility frames and pipe racks that reduce on-site welding, simplify routing and speed integration of process and utility lines.



Modular Fab Utilities, Powered by Experience

ERGIL combines 40+ years of pressure vessel and skid fabrication with modern modular design to deliver ready-to-install utility systems for semiconductor fabs.



Certified Quality

Our modules are designed and built under ASME, PED, DNV and ISO-certified systems, with full welding documentation, NDE and material traceability to meet global fab standards.



Reliable Delivery

Factory-built in our 100% solar-powered Mersin facility, modules are pre-assembled and tested before shipment, cutting site work by 20–50% while reducing waste, emissions and safety risks.



Efficiency & Sustainability

Our modular fabrication approach delivers high-quality utility systems with less waste, fewer site works and shorter schedules. Built in our 100% solar-powered Mersin facility, every module combines efficiency with a lower environmental footprint.



Towards Greener Fabs

By combining clean manufacturing with advanced emission control and water treatment solutions, we help semiconductor fabrication plants (fabs) meet demanding ESG targets and reduce lifecycle CO₂ impact.



Comprehensive Solutions

From UPW, wastewater and chemical dosing skids to absorbers, scrubbers, lined tanks and steel pipe racks, ERGIL delivers integrated, ready-to-install utility systems tailored to each fab's process and reliability needs.





Modular Utility Platform

for Semiconductor Fabs (Concept Layout)

Modularization

Modular skid design for UPW, wastewater, chemical dosing and exhaust gas treatment

Full Remote Assistance

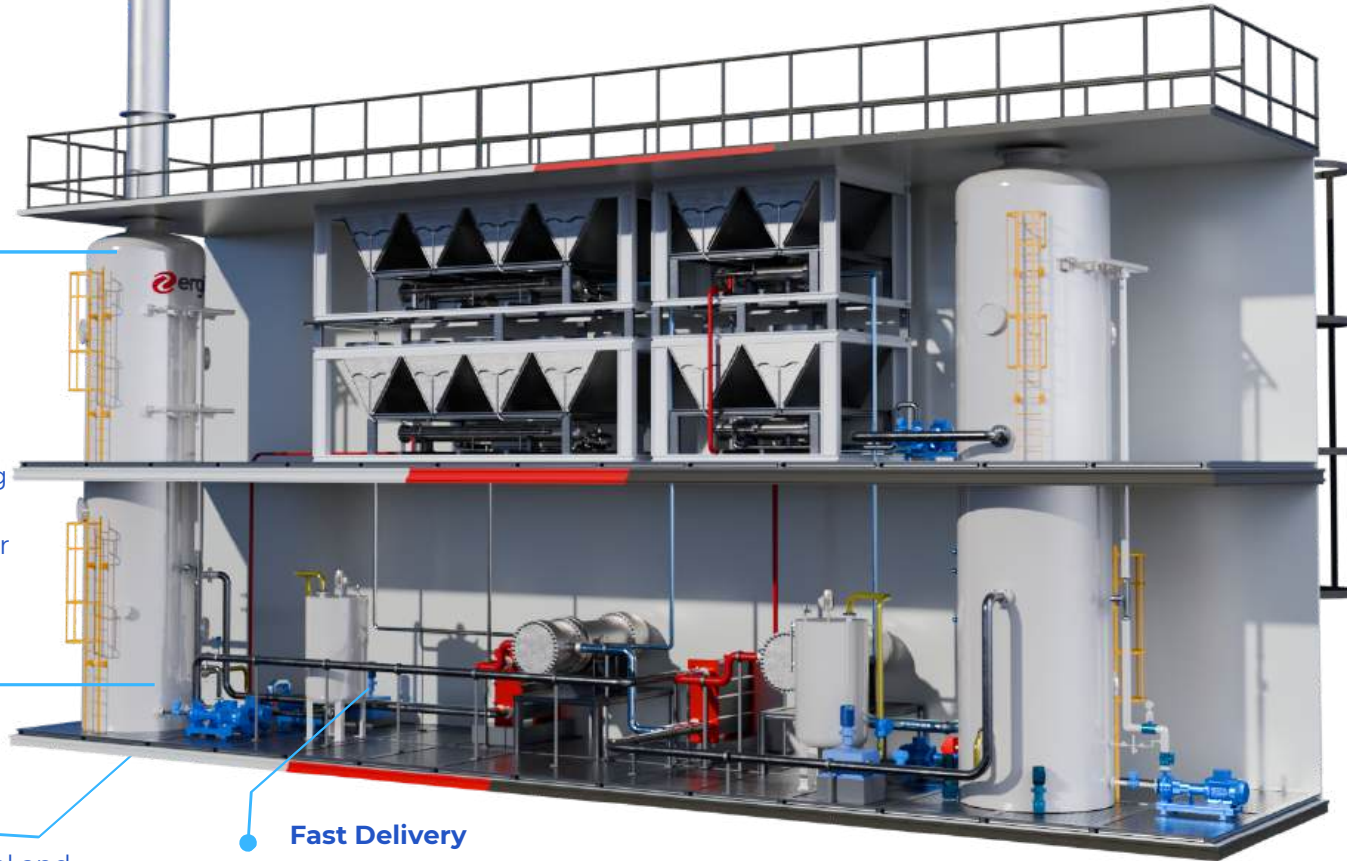
Optional remote monitoring, data logging and troubleshooting for higher uptime and easier optimization.

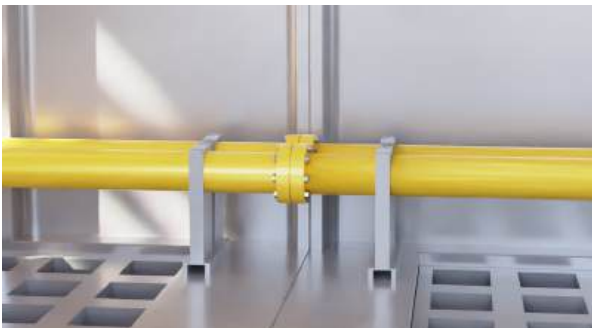
Material Selection

High-purity stainless steel and corrosion-resistant linings suitable for ultrapure water, aggressive acids and solvents.

Fast Delivery

Containerized design for quick site integration.





Modular Interfaces. Perfect Fit.

- Standardized nozzle & pipe rack elevations
- Pre-defined expansion spools for stress-free tie-ins
- Access-friendly clamps and supports for fast service

ERGIL skid and rack designs use standardized pipe elevations, supports and connection details so every interface fits exactly where your fab layout expects it.

Pre-engineered spool pieces and flanged joints absorb site tolerances without on-site cutting or rework. The result is clean routing, repeatable installation and easy maintenance even in tight semiconductor utility corridors.

Semiconductor Fab Utilities

Process Chain

ERGIL delivers the complete utility and emission-control process chain with in-house engineering and manufacturing. From raw water and chemical storage, through ultra-pure water production and exhaust gas scrubbing, to wastewater treatment and clean discharge, every stage is built by ERGIL for maximum reliability, safety and schedule certainty.

Wastewater Management

Process wastewater from CMP, etch, cleaning and plating areas is collected, equalized and treated in modular units. Neutralization, clarification and polishing steps are engineered to meet discharge or reclaim specifications, reducing fresh water demand and ensuring full regulatory compliance.

Scrubber & Emission Control Systems

Modular wet scrubbers and absorbers treat exhaust gases from process tools and utilities, removing acids, particles, VOCs and CO₂ precursors. Each skid is designed to meet fab-specific emission limits with low pressure drop, high reliability and easy integration into existing stacks and ductwork.

Water & Chemical Pre-Treatment

Raw water and make-up streams are filtered, conditioned and stored together with bulk chemicals. Pre-treatment modules ensure stable feed quality for UPW production, cooling water and process utilities.



Factory-Built

UPW & Process Water Skids

ERGIL designs compact, factory-built skids that integrate filtration vessels, valves, piping and controls on a single steel base.

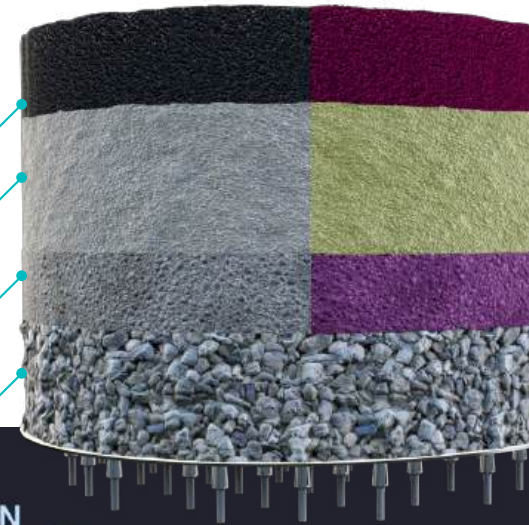
Each unit is tailored for ultra-pure water (UPW) and process water duties, with carefully selected materials and flow paths to minimize dead legs, particle shedding and microbubbles.

Antiricite

Dolomite

Gravel

Quartz



Ergil, delivering excellence in industrial solutions.



Ergil engineers and manufactures process & environmental equipment and modular skids at our 35,000 m² facility in Mersin, Türkiye. For 40+ years, we have delivered scrubbers, separators, pigging systems, and tank-safety equipment (flame arresters, PVVs) for oil & gas, chemicals, power, and carbon-capture projects.

We combine in-house design, machining, welding, blasting/painting, and testing with rigorous QA/QC and full material traceability.

All equipment is built to international codes (ASME/EN/API) and verified through client-witnessed FAT/SAT. Our multi-disciplinary team supports the full lifecycle—from sizing/simulation to commissioning and remote monitoring.





Challenge

Captures particles down to 20–25 microns using a granular media combination

Solution

Filtration provides mechanical stability and high flow efficiency, removing the bulk of physical contaminants in the first stage.

Impact

Reduces scaling and fouling rates by removing colloidal and metal oxide particles.

Capture Link

The fundamental requirements of UPW systems, low turbidity, low SDI, low particle concentration,

Effective for HF, HCl, NH₃, Cl₂, silanes, BCl₃, metal-organics, VOCs.

Designed for both Point-of-Use (POU) and centralized applications, these systems ensure effective removal of toxic, corrosive.

Epitaxy (EPI), Chemical Vapor Deposition (CVD), Atomic Layer Deposition (ALD), Metal-Organic Chemical Vapor Deposition

Perfect for cleanrooms, R&D labs, or multi-chamber tools. Typically >99% gas abatement.

Atmospheric acid gases and loss of valuable process streams.

Two x 2-stage scrubbers + a chemical reactor to neutralize emissions and reclaim by-products back into the process.

≥99% chemical emission removal, 2+ years stable operation; in-process recovery adds value with no extra major CAPEX. Lower acid-gas load extends CO₂ capture unit stability and uptime.

Modular Utilities for

The World's Cleanest Fabs

UPW • Wastewater • Scrubbers • Pressure Vessels

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