

Process Fluids Solutions

Purification – Concentration – Recovery
of valuable process resources

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ADVANCED PROCESS FLUID TREATMENT FOR DEMANDING INDUSTRIES

Industries across multiple sectors rely on OSMO Membrane Systems for innovative, client-specific solutions, backed by years of experience and a solid portfolio of successful projects.

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Lithium exploration and refining:

Concentration of lithium brine, reduction of water consumption



Battery production / recycling:

Acid purification, metal separation



Mining:

Purification of waste water, recovery of valuable materials



Chemicals:

Purification of process streams, recovery of raw materials



Catalysts / high-performance materials:

Concentration of acids and brines, wastewater treatment



Fertilisers:

Purification of phosphoric acid, concentration of ammonium sulphate



Phosphorus recovery / urban mining:

Purification of acids



Water/waste water treatment:

Particle filtration, desalination, wastewater recycling, MLD, ZLD



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OUR SOLUTIONS – YOUR BENEFITS

Effective process fluid management is vital for optimizing production, reducing costs, and meeting environmental standards. Key challenges include maintaining quality, minimizing energy use, and recovering valuable resources while addressing the complexities of fluid disposal.

Our tailored solutions are designed to meet your specific needs at every stage of the process chain, ensuring efficiency and sustainability.

Enhancing efficiency, quality and sustainability

Cost advantages:

- **Energy reduction:**
Concentrating process fluids reduces the volume for downstream processing and saves energy.
- **Raw material recovery:**
We extract and reuse valuable materials from process fluids, lowering raw material demand.

Production excellence:

- **Improved quality:**
Cleaner process streams ensure consistent product quality and compliance with industry standards.
- **Innovative processes:**
We collaborate with clients to develop customized solutions that integrate seamlessly into existing operations.

Environmental gains:

- **Waste minimization:**
Our technologies reduce the volume of waste streams, lessening the overall environmental impact.
- **Reduced chemical consumption:**
Advanced treatment technologies reduce chemical usage and eliminate sludge generation.

Why OSMO Membrane Systems?

Proven expertise:

We have a strong track record of solving complex process fluid challenges and extensive industry knowledge.

Tailored engineering solutions:

We create custom solutions that meet specific client needs, ensuring reliable and long-lasting performance.

Advanced technologies:

Our membrane systems offer a scalable, cost-effective approach for seamless process integration.

Comprehensive support:

From initial feasibility study, process development and plant construction to complete support during plant operation



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APPLICATIONS

Concentration

Ultra High-Pressure Reverse Osmosis (UHP RO) efficiently concentrates process fluids, reducing evaporator energy demand and boosting overall efficiency.

Typical applications: concentration of LiCl or many other saline process fluids

Purification

Tailored purification technologies remove impurities from process fluids or wastewater, enabling cost-efficient reuse and reducing waste and disposal costs.

Typical applications: removal of metals or organics from acids

Recovery

Valuable raw materials in process fluids can be efficiently recovered through multi-stage filtration, enabling cost-effective reuse and enhancing supply chain security.

Typical applications: extraction of metals or product residuals from acidic or saline solutions

TECHNOLOGIES

Ultra-High Pressure Reverse Osmosis

Using pressures up to 120 bar, UHP-RO achieves concentration levels for salts, metals or organics up to 50 times higher than conventional RO processes.

Nanofiltration for acid and high salinity treatment

Nanofiltration offers precise separation of polyvalent from monovalent ions and effectively rejects metals and organics.

Faktor X

A proprietary enhancement to membrane processes that increases recovery rates up to 95% or increases concentration levels, depending on the application.

Ion Exchange

Selective removal of process fluids impurities to achieve maximum purity



PROCESS DEVELOPMENT

With our '4 Steps 2 Separation' approach, we offer customised process development in close cooperation with our customers.

Consultancy and laboratory testing

Conceptual design and feasibility

On-site piloting

Proof of concept and process optimization with an unmatched variety of pilot plants

Turnkey plant delivery

Engineering, design, procurement, commissioning from one hand

Service contracts

Operating optimization and maintenance





OSMO Membrane Systems GmbH is a renowned engineering company specializing in advanced fluid treatment technologies for industrial applications.

With over 40 years of expertise, the company offers comprehensive end-to-end solutions for process fluid and water/wastewater treatment across a wide range of industries.

As part of the GAW Group, OSMO Membrane Systems is committed to providing cutting-edge systems tailored to the unique requirements of each client. Their services encompass everything from feasibility studies and process development to piloting, turnkey plant construction, and long-term support for operational systems.



OSMO Membrane Systems a company of



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