QUALITY WORKS.

LANXESS
Energizing Chemistry

COMBINED PROCESS OF ION EXCHANGE AND REVERSE OSMOSIS FOR SPECIFIC SOLUTIONS

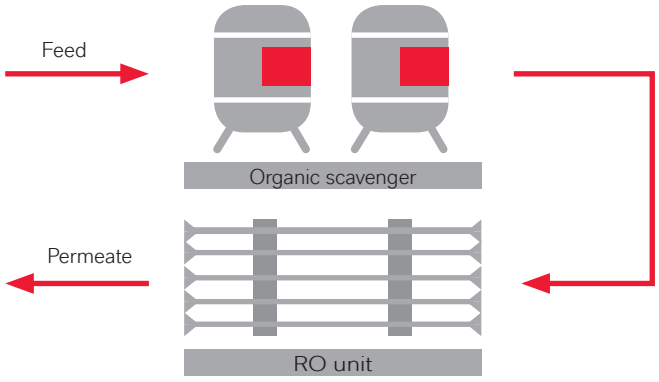
Specific water types require specific solutions. This can only be achieved by a combination of different processes. The combination of a non-selective and a selective process, like reverse osmosis (RO) and ion exchange (IX), offers a wide range of solutions to treat water to the requested standard. Furthermore, these processes can also help to reduce wastewater. The following processes are examples that are already in use or that are under research.

Yield improvement due to less fouling

Adsorptive IX resin in front of RO system as scavenger

The organic scavenger removes small organics, which may have passed the ultrafiltration (UF) to reduce the fouling on the RO elements.

- Application: High organics in water
- Reduction of organic fouling on RO
- Higher availability of the RO process, lower OPEX

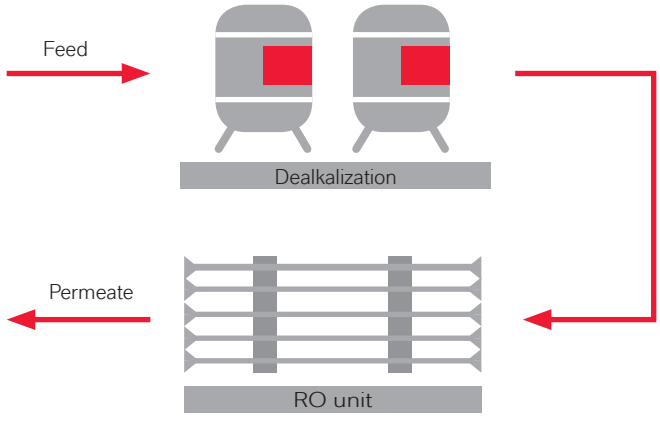


Yield improvement due to less scaling

WAC-type resin to partially soften water upstream of RO membrane system

High capacity ion exchange WAC-type reduces the hardness and the scaling potential. The process can run with higher recovery rates compared to processes with only anti-scalants.

- Application: Industrial water with high carbonate hardness
- Reduction of scaling inside the RO membrane element
- High-capacity WAC-type resin with high output, fewer regenerations

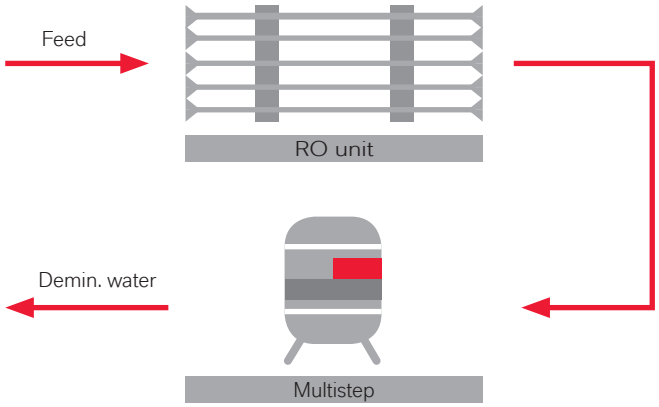


Complete demineralization

Water demineralization RO system and LANXESS multistep polishing

To save regeneration costs, a multistep system (which is adjusted to the water composition) is used to produce demineralized water quality.

- Application: Industrial water with high quality requirements
- Lower resin regeneration costs due to pre-desalination by RO
- High quality of demineralized water at low chemical consumption

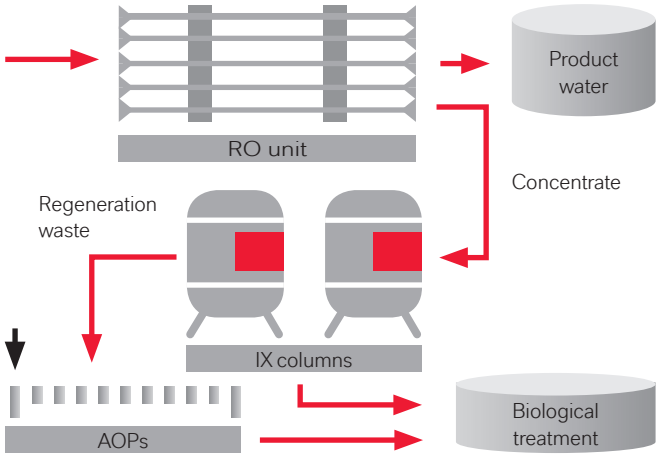


Micropollutant removal

Micropollutant removal with RO membranes, selective IX, and advanced oxidation process (AOP)

RO concentrate contains micropollutants in very low concentrations. The destruction of these micropollutants is expensive. Collecting the micropollutants in an IX column and later on destructing them in an advanced oxidation process could be beneficial.

- Application: Wastewater and potable water treatment
- Removal of harmful substances (micropollutants)
- Safe treatment of potable water



We will be happy to support your business. Please contact us for additional information: visit www.lpt.lanxess.com

LANXESS
Energizing Chemistry

LANXESS Deutschland GmbH
Liquid Purification Technologies
Kennedyplatz 1, 50569 Cologne
Germany
Phone: +49 221 8885-0
E-mail: lewabrane@lanxess.com

10468-EN | 10/2017