



De-alcoholization of beer

Membrane filtration plant for the production of alcohol-free beer

GEA offers a compact and cost effective process for the de-alcoholization of relatively small feed rates of beer by means of reverse osmosis (RO). This complements the GEA evaporation technology that has been utilized over many years for beer de-alcoholization.

This RO process seamlessly supplements the GEA portfolio, so that it is now possible to offer a technology for all brewery sizes for a maximum beer quality, combined with profitable capital and operating expenses.

Contrary to systems with a large production capacity, this RO plant design operates in batch mode whereby 50-200 hl/24h of alcohol-free beer can be efficiently produced. Larger amounts of product need a correspondingly longer production time.

Plants with greater production capacity or continuously producing plants can also be supplied on request.

Thanks to the modular design of the plants, RO systems can be easily retrofitted for capacity adjustments. The overall

capacity depends on the given product properties such as, for example, the alcohol inlet concentration, the desired degree of de-alcoholization of the beer and the information whether the beer is filtered or unfiltered. Standardized plant designs result in reduced investment costs and increased profitability for the customer.

Membrane filtration plants by GEA are characterized by compact skid design and low complexity of instrumentation needed. The plants are designed as plug & play systems, so that extremely short installation and commissioning times can be realized.

Membrane filtration plant

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Benefits and advantages:

- Excellent taste and flavor profile
- High quality of the de-alcoholized beer
- Easy cleaning of the membrane system
- Process safety and high operating reliability
- Standardized modular solution to reduce investment costs and to increase the return on investment

Design:

- Skid-mounted, pre-wired system
- Batch process control
- Automatic control and visualization with touch panel for easy operation
- Includes CIP dosing unit and integrated CIP routines
- Spiral wound reverse osmosis membranes
- Compact design with low complexity of the instrumentation and controls required (batch process)

Operating parameters and performance data:

- Capacities of 2.5 hl/h up to 10 hl/h
- Alcohol reduction from 5 down to 0.5 % ABV (up to 0.05 % ABV is possible with an adapted plant design)
- Low operating temperature of < 10 °C

GEA is specialized in individually designed membrane filtration plants and complete tailor-made process lines. The range of membranes includes polymeric and inorganic membranes.

Our scope of services range from application development, optimization of processes, tests and examinations to plant design and manufacture, installation and commissioning. In addition, GEA Service is on hand to maintain and improve the performance of our customers' plants, to maximize processing quality, reliability, efficiency and safety.

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