СИСТЕМЫ МЕМБРАННОЙ ФИЛЬТРАЦИИ COLDSAN, EASYCON, MICRO FORMULA, SCEPTER

Технические характеристики

GEA COLDSAN®

Minimizing the loss of salt and water and reducing the microbiological content by more than 99.5%, while maintaining the chemical balance in brine

Securing first-class cheese brine

Dumping of cheese brine is normally very costly, and in some countries it is prohibited due to the high salt content of the brine. Purification and recycling of the brine is therefore preferable and can provide several advantages, such as reduced operating costs and improved cheese quality.

Cheese brine, if not treated properly, can contain large amounts of undesireable microorganisms, such as gas-producing lactobacilli, pigment-producing micrococcus, pathogenic bacteria, yeast and mold which all affect the final cheese quality.

Unlike traditional brine treatment methods such as heat treatment, kieselguhr filtration or the addition of preservatives, microfiltration physically removes the undesired microorganisms, dead cells and physical contaminants from the brine without causing any significant change to its chemical composition.

GEA has developed the brine sanitation unit COLDSAN®, which is simple to operate and easy to install in connection with existing brine systems.

The COLDSAN® unit is fitted with polymeric microfiltration membrane elements which are widely recognized as the most effective method of cheese brine sanitation. GEA COLDSAN® works to help produce high-quality cheese and preserves flavor and textures.

Brine cages in a cheese brine pool

GEA COLDSAN®

GEA MICRO FORMULA®

A highly efficient, reproducible microparticulation technology that can help you to increase your yield of high-quality whey protein concentrates, while reducing CAPEX, OPEX, service and maintenance costs

GEA MICRO FORMULA® for precisely defined whey protein particles

The global dairy industry uses microparticulation technology to further process whey protein concentrates (WPCs) that are generated using ultrafiltration technology into microparticulated liquid and powder WPCs that display precisely defined particle sizes and functional properties.

Microparticulation combines heat to denature the protein, with a controlled mechanical treatment that results in the formation of a very exact protein particle size.

Microparticulated whey proteins can be used as natural liquid stabilizers, and can also make ideal substitutes for proteins and fats in a variety of diary foods, including cheeses, ice creams, yogurt, sauces and dressings, and mayonnaise.

The GEA MICRO FORMULA® technology offers unique features, such as our proprietary temperature, time, shear (TTS) unit, which utilizes only standard flow components, set up in a special configuration. Available in different sizes to match your capacity requirements, the units enable complete control of protein denaturation, particle size and distribution and, most importantly, functionality of the resulting microparticulated WPCs.

The MICRO FORMULA® unit is easy to operate, and is relatively low cost to maintain. The simplified process, combined with long run times between clean-in-place (CIP) cycles helps to reduce both operating costs, and the use of water and chemicals for cleaning.

The GEA MICRO FORMULA® unit generates microparticulated whey protein concentrates that have precisely defined protein particle characteristics and functionality, and which can be used to replace proteins and fats in a wide range of food products.

GEA EasyCon filtration unit

A compact membrane filtration system

The compact and standardized “plug and play” EasyCon is available for small-to-medium feed rates and can concentrate a feedstock to provide a solution with a total solids (TS) content of up to 25%.

Cost-effective EasyCon

Designed to concentrate solids by nanofiltration (NF) or reverse osmosis (RO) membrane filtration technology, the EasyCon is the right choice for concentrating solids when cost is key and improved return on investment (ROI) is of great importance. GEA cross-flow filtration technology with nanofiltration or reverse osmosis spiral-wound membranes can be used to concentrate the solids content of various feedstocks.

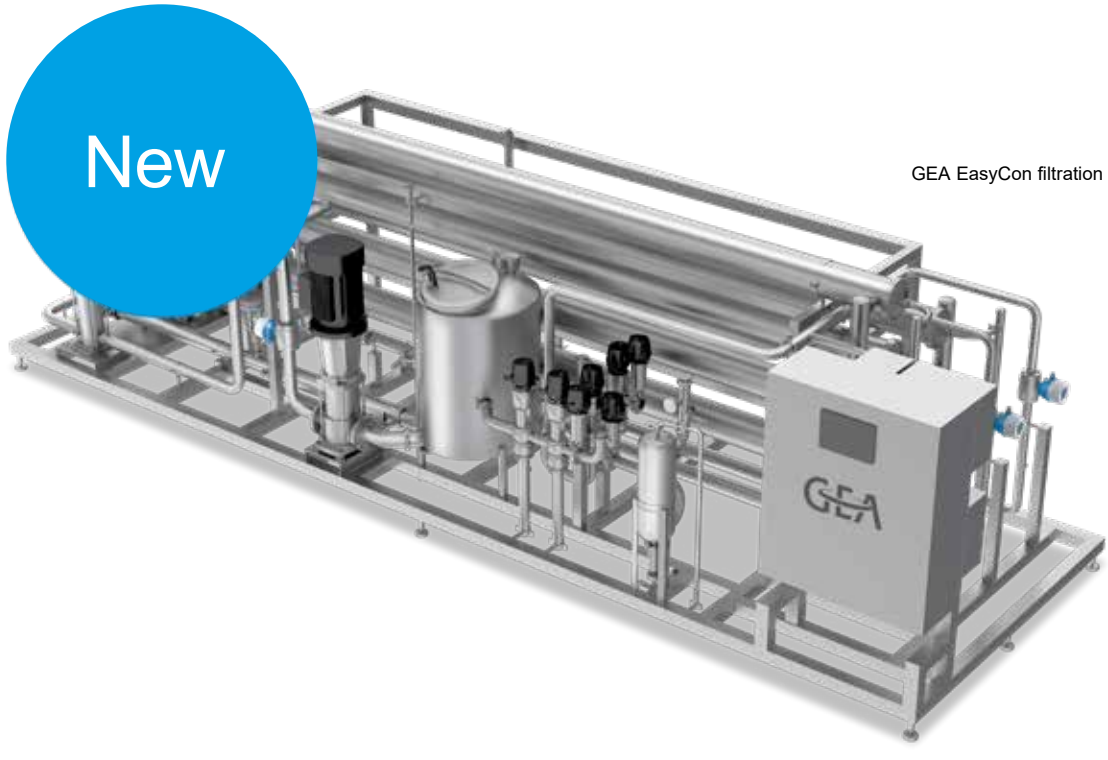
For concentration applications, reverse osmosis membranes should be used. If a partial demineralization is required, nanofiltration membranes are recommended. Operating at temperatures of approximately 10–15 °C, the filtration unit eliminates the risk of thermally stressing the product.

EasyCon - easy to install and operate

Frame-mounted and ready for installation, the EasyCon unit includes filtration modules, pumps, instruments, a clean-in-place (CIP) dosing unit and control technology for automatic and easy operation.

EasyCon at-a-glance

- Plug & play design for fast installation and commissioning
- Compact system design for small footprint
- No assembly on site as all components are frame-mounted
- Automatic control and visualization with touchscreen for easy operation
- Processing of multiple products possible
- Spiral-wound nanofiltration or reverse osmosis membranes
- Standardized modular design to reduce investment costs and improve the return on investment



GEA EasyCon filtration unit

Condensate Polisher

Condensate from evaporation plants can be purified in a condensate polisher to convert a waste stream into a water stream, using reverse osmosis. This high quality water can then be re-used as boiler feed water, process, cooling, and rinsing water or be discharged directly into a drainage ditch.

Condensate from evaporation processes contains impurities such as CSB, ions and other unwanted components. For re-use as process water, these impurities need to be removed. Using reverse osmosis it is possible to produce a high grade process water for re-use in the production facility with a low content of ions and a low conductivity level.

The operating pressure and process design depends on the quality of the condensate and the level of purification required.

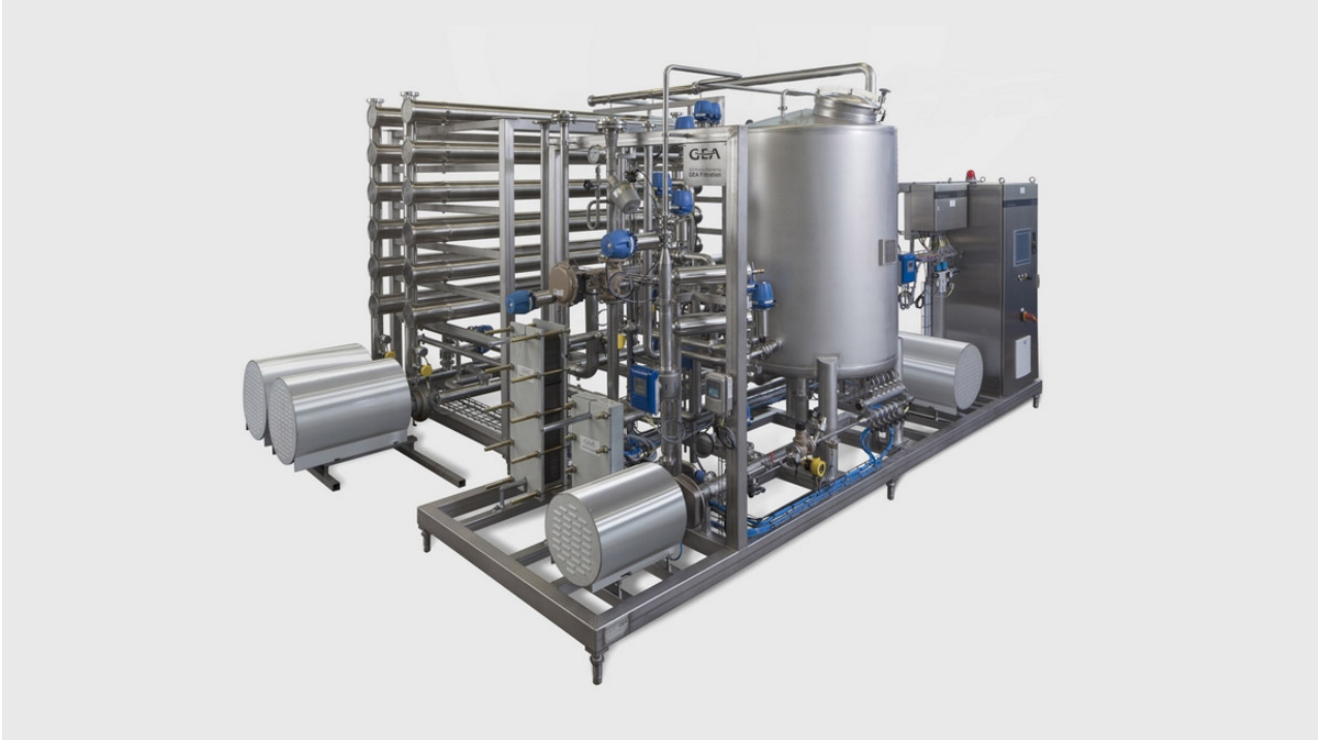
If the capacity of the plant increases, requiring higher volumes of condensate to be treated by a waste water system, the hydraulic load to the waste water system can be reduced up to factor five when installing a condensate polisher. The filtrate can be discharged directly if the purity requirements are met.

Benefits of process water recovery:

- High quality filtrate
- Re-use of filtrate in production processes
- Reduction of fresh or well water consumption
- Reduction of waste water
- Energy recovery

De-Alcoholization Membrane Unit

In addition to proven evaporation technology for the de-alcoholization of beer, GEA offers an efficient process for removing alcohol at low feed rates using reverse-osmosis membrane filtration. This allows GEA to offer technology to all sizes of breweries for the removal of alcohol to meet their individual requirements for capital investment, operating costs and beer quality. Evaporation plants are typically used for feed rates in excess of hl/h; reverse osmosis provides the most practical alternative for smaller plants.



GEA offers two plant configurations: 5 hl/h (40 hl/batch in 8 hours) and 10 hl/h (80 hl/batch in 8 hours). The modular structure of the plants means that filtration modules can be easily retrofitted any time as capacities increase. Achieved throughput is dependent upon the alcohol inlet concentration and the final alcohol level required in the product.

Standard plants help to reduce investment for the operator and increase profitability. Membrane filtration plants are simple to operate and supplied on plug and play skids for fast installation and commissioning.

Benefits and advantages

- Low filtration temperature (< 10 °C) ensures high quality beer
- CIP for easy cleaning; Simple design with small footprint
- Semi-automatic operation saves labor costs and helps to ensure operational safety
- Standard, modular product for reduced costs and fast return on investment

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