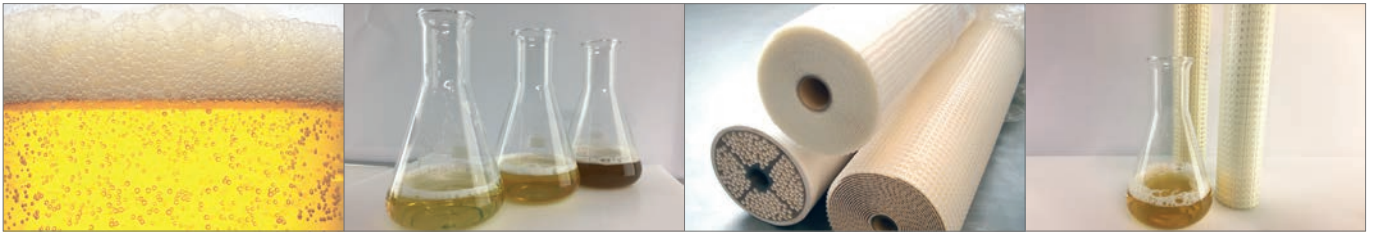


MEMBRANE FILTRATION FOR

# BREWERY APPLICATIONS

# MEMBRANE FILTRATION FOR



## MMS Filtration Solutions for the Brewery Industry

For more than 25 years MMS has developed membrane solutions for several industries, including the brewery sector. We apply the latest membrane filtration technology to enable our customers to clarify, fractionate or concentrate their liquid solutions.

MMS focus is currently in the areas of beer, cider and wine de-alcoholization, alcohol re-concentration and water treatment for re-use.

### Innovate your Product whilst reducing Water Consumption

The brewery industry is facing challenges that demand innovative and sustainable approaches. MMS help combine the development or improvement of our customers' products whilst keeping an eye on water consumption and reuse.

MMS has optimized our beer de-alcoholization concepts, improved ethanol recovery, are continuously looking to innovate water re-use solutions and have developed laboratory and pilot units to allow our customers to innovate and scale their membrane solutions.

One pressing concern is the environmental impact of greenhouse gas emissions and water pollution. To address this, the industry needs to adopt novel, sustainable practices such as renewable energy sources and responsible water usage.

MMS has developed solutions for water re-use for several industries and are ready to apply these to your sector. Our commitment to innovation and continuous improvement drives us to develop new technologies and applications that meet the evolving needs of our customers.

### Alcohol reduction in beverages

The MMS BeerMAX system allows the de-alcoholization of beer, cider and wine, through the use of a carefully selected reverse osmosis membrane.

The BeerMAX is a compact, skid-mounted plug-in unit that uses reverse osmosis membranes to filter out water and alcohol from your product, while retaining the essential ingredients that give it flavor and color. The system operates at low temperatures of 10 to 15 °C, so there is no thermal stress on your product. You can adjust the degree of dealcoholization according to your specific needs, from 0.05% ABV to higher levels.

The BeerMAX is easy to install, operate and maintain. It comes with a touchscreen for full automation and visualization, a clean-in-place (CIP) dosing unit and integrated CIP routines, and technical support by MMS specialists. The system can handle batches of 10-100 hectolitres of beer per day. If you require treatment of larger volumes, we also offer solutions with our BeerMax Conti Line.



### Alcohol Recovery

For ethanol base production we use a similar technology to our BeerMax solutions with different membrane selection and post unit operations such as activated carbon filtration. This ensures we eliminate trace amounts of tastes for the use of the ethanol base for other products.

# BREWERY APPLICATIONS

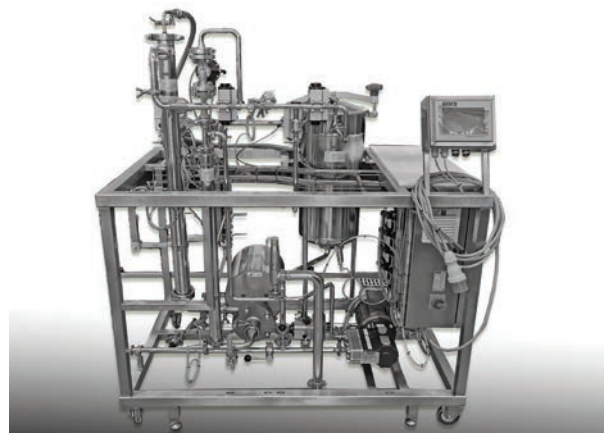


## Alcohol Concentration

MMS has developed an ultrahigh pressure reverse osmosis solution to concentrate the diluted ethanol to 10-20°. Apart from concentrating ethanol the units produce water which can be re-used during the de-alcoholization process.

## Water Reuse

MMS has a range of solutions to help our customers with the reuse of rinse waters, wastewaters, CIP solutions and biologically treated wastewater. Please contact our process specialists for more information.



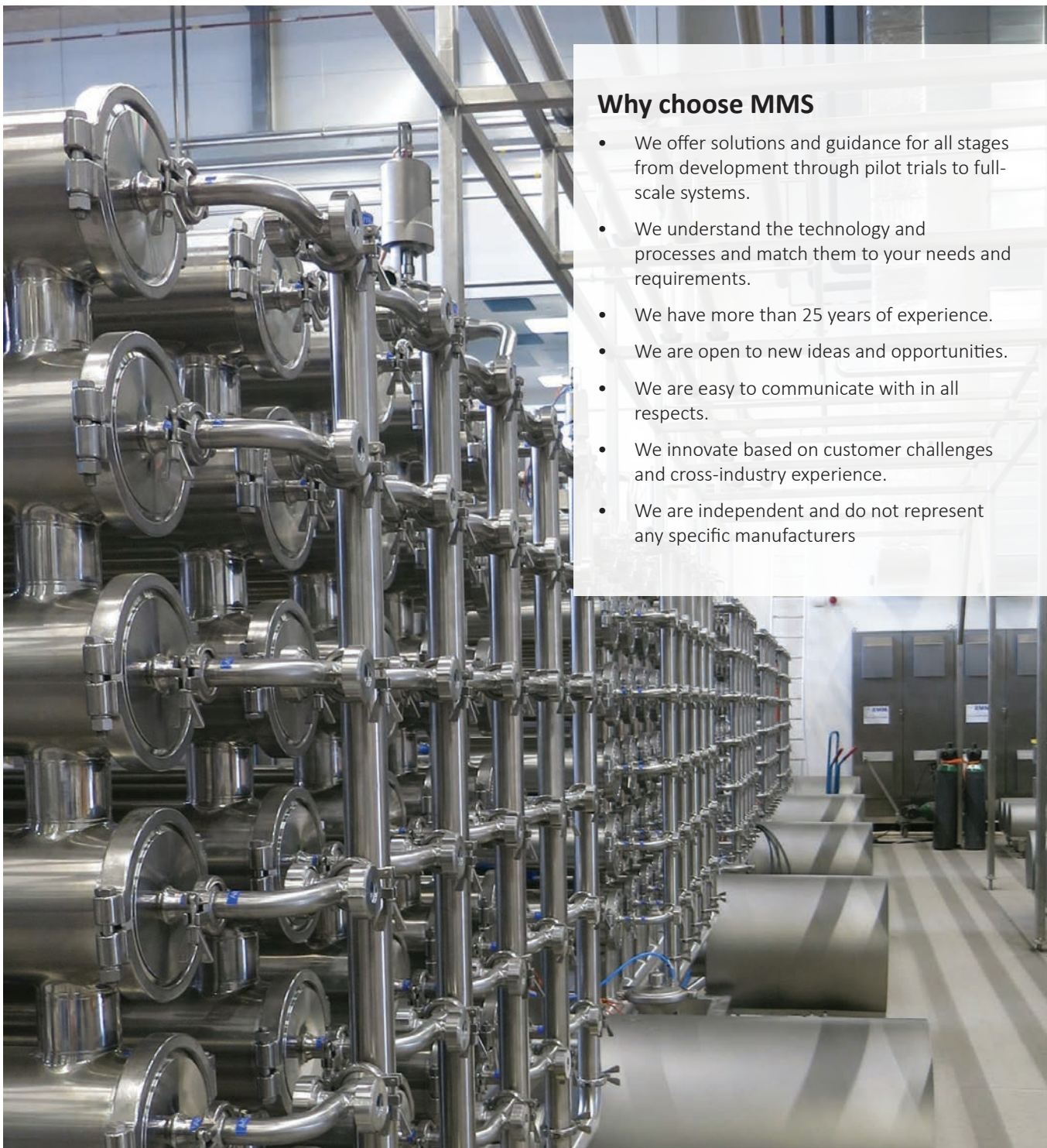
## Pilot Systems & Process Development

Over the last 25 years MMS has developed a comprehensive range of pilot systems for purchase and rent to allow our customers to test our solutions.

MMS supports our customers with process development, through a dedicated membrane laboratory in Zurich or on-site whilst we train you on our pilot units. Please refer to our leaflets on Pilot Systems and Process Development Service for more information.

## Brewery Industry Membrane Filtration Applications

APPLICATION	PROCESS	BENEFITS
Ethanol base recovery	RO/NF	Cost effective solution for production of ethanol base
Alcohol-reduction <0.5% ABV	RO/NF	Retains flavor and operates at low temperatures
Ethanol recovery	ROHP	Converts waste to value
Process water recovery	UF/RO	Reduced wastewater discharge and costs
Wastewater treatment for water reuse	UF/RO	Reduces water consumption in your factory



## Why choose MMS

- We offer solutions and guidance for all stages from development through pilot trials to full-scale systems.
- We understand the technology and processes and match them to your needs and requirements.
- We have more than 25 years of experience.
- We are open to new ideas and opportunities.
- We are easy to communicate with in all respects.
- We innovate based on customer challenges and cross-industry experience.
- We are independent and do not represent any specific manufacturers

## CONTACT US

### **Zurich Office**

MMS AG Membrane Systems  
Im Grossherweg 11  
8902 Urdorf  
Switzerland  
T: +41 (44) 735 59 00  
info@mmsx.com  
mmsx.com

### **Nordic Office**

MMS Nordic  
Ørstedsvvej 14A  
8600 Silkeborg  
Denmark  
T: +45 7090 9030  
info@mmsnordic.dk  
mmsx.com

**MMS**  
Membrane Systems