



MEMBRANE FILTRATION FOR

# JUICE APPLICATIONS

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## Membrane filtration from well-known to innovative applications

MMS is an innovative company who works closely with our customers and suppliers to create new or improved membrane-based solutions. We have more than 25 years of experience in supplying large-scale applications for the juice and extract sectors. With application know-how in a wide range of industries and our dedicated laboratory in Zurich we are ideally positioned to support our customers with new applications.



### Meeting the challenges of the Juice Industry

The juice industry is currently facing challenges that demand innovative and sustainable approaches. One pressing concern is the environmental impact of greenhouse gas emissions and water pollution. To address this, the industry needs to adopt sustainable practices such as renewable energy sources, and responsible water usage.

The juice industry must navigate the complex landscape by prioritizing innovation and sustainability. By doing so, it can ensure long-term viability, meet changing consumer demands, and contribute to a more environmentally responsible future.

MMS can support these needs. Our commitment to innovation and continuous improvement drives us to develop new technologies and applications that meet the evolving needs of our customers. We have optimized our units to reduce energy consumption. We have developed smart solutions for water recovery and water re-use. We have developed a two-step nanofiltration solution to reduce sugars in juices whilst maintaining the acidity without the addition of processing agents.

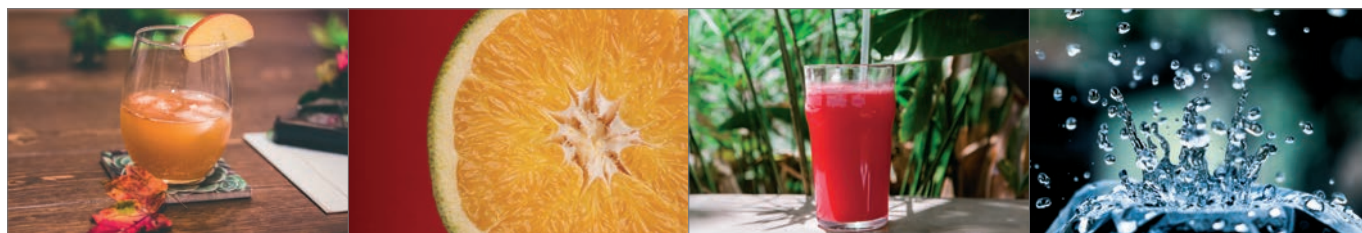


### Concentration and Fractionation Possibilities

Membrane filtration allows for concentration of juices or juice fractions such as colour or aromas. Juice colors can be selectively enriched to produce colour ingredients, and water from evaporator condensates can be purified to be used as CIP or wash water.

MMS has knowledge on many juice filtration applications. Contact our process development team for more information.

# JUICE APPLICATIONS



## Cross-industry approach

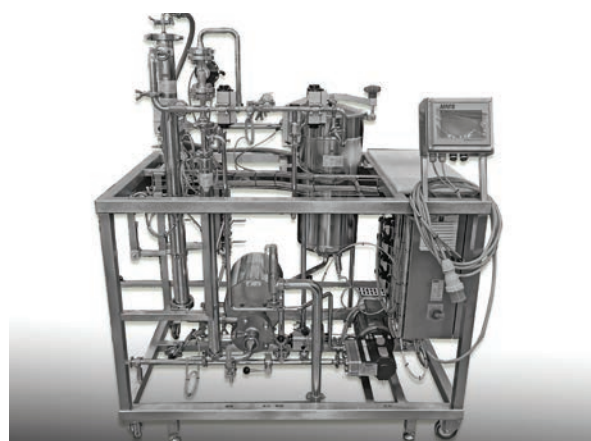
We work across many different industries: dairy, food, beverage, pharma, biotech, extracts, and water management. We have expertise in all filtration processes: microfiltration, nanofiltration, ultrafiltration, and reverse osmosis.

This provides us with a unique opportunity to combine cross-industry experiences and utilize them to enable new processes for our customers. A strong team of innovative experts pick up new market trends, ideas, and challenges from customers in different industries — and connect the dots.

## 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.



## Juice Industry Membrane Filtration Applications

APPLICATION	PROCESS	BENEFITS
Juice concentration	RO	Reverse Osmosis is a low energy and scalable process to concentrate juices prior to evaporation Reduces energy costs on evaporators
Juice clarification	MF/UF	Clarifies juices by removing turbidity
Sugar reduction	NF	Nanofiltration allows for smaller sugars to pass whilst retaining color, phenolic compounds and larger carbohydrates. Reduces monosaccharide sugar from juices
Polishers for condensate water recovery	RO	Reverse Osmosis retains most compounds to produce a clean water stream Removes impurities from water for its re-use
Juice aroma concentration	RO	Concentrates aroma at low temperatures High-pressure systems are often required with operation up to 60-80 bar



## 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  
Ørstedsvej 14A  
8600 Silkeborg  
Denmark  
T: +45 7090 9030  
info@mmsnordic.dk  
mmsx.com

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