



MEMBRANE FILTRATION FOR

# FOOD APPLICATIONS

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## MMS Filtration Solutions for the Food Industry

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

The MMS approach is to work closely with our customers and develop solutions for your specific requirements in terms of clarifying, concentrating, fractionating or improving water recovery within your factory.

### Innovate your Product whilst reducing Water Consumption

The food 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.

Membrane filtration is an ideal technology for the food and beverage sector as we apply low temperature to clarify, concentrate or fractionate your product streams.



### Proteins from Plants

MMS has been working in the space of plant proteins for 15 years starting with soya milk debittering and concentration. Our ultrafiltration solution selectively concentrates protein whilst allowing smaller, bitter compounds to pass.

With a drive to produce proteins from alternative sources, we have tested our solutions on pea, wheat, oat, and even grass proteins successfully.

The main advantages of membrane filtration for plant-based protein production is functionality of the soluble proteins, taste and yield of protein, whilst optimizing the water use.

### Protein from Fermenters

Fermentation produced proteins using bacterial, yeast, mammalian, and micro-algae cultures can be treated with microfiltration and ultrafiltration solutions to produce a clarified protein concentrate.

When the density difference poses a challenge for centrifugal technology, microfiltration becomes an ideal solution for clarifying your broth. Whilst ultrafiltration can concentrate proteins at low temperatures and without the need to add chemicals.

### Proteins and Gelatine from Animals

Animal proteins from milk, blood or broth can be improved in terms of concentration or purity by clarifying and concentrating your feed stream with microfiltration and ultrafiltration solutions.

### Extract Concentration

Osmosis technology is ideally used to concentrate your extracts at low temperatures. With nanofiltration, we are able to de-ash, whilst we concentrate allowing the product to have an improved taste or function.

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## Sugar Fractionation & Concentration

Nanofiltration allows smaller sugars to be fractionated from larger sugars, enabling our customers to produce new innovative products. With reverse osmosis, we can subsequently concentrate the smaller sugars and produce clean water for your factory.

## 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.

## Food Industry Membrane Filtration Applications

APPLICATION	PROCESS	BENEFITS
Soya, pea, oat, hydrolyzed wheat protein concentration	UF	Selectively concentrates proteins with superior functionality and taste
Blood protein concentration	UF	Selective concentration of proteins whilst allowing sugars and salts to pass
Broth clarification	MF	Produces a clear, fat free broth
Yeast extract, protein fractionation and concentration	MF/UF	Clear protein concentrate production
Soya, pea, oat milk	UF	Flavour improved protein concentrates
Gelatine clarification and concentration	MF/UF	Removal of fat and selective concentration of gelatine
Hydrolyzed fish protein and gelatine	UF/NF	Removes off-flavour concentrates
Coffee and tea extract concentration	RO/NF	Low temperature concentration
Sugar fractionation	NF	Fractionation of larger sugars from monosaccharides
Salad wash water recovery	UF/RO	Re-use of water and energy
Condensate water recovery	RO	Produces clean water for water re-use



## 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

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