



**Membrane Systems for all Industries**

**MMS**  
Membrane Systems

„Essential Partners in Membrane Technology“

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## MMS Products and Services

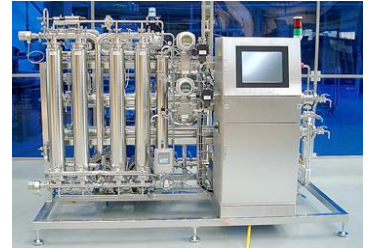
### Membrane Systems and Solutions:

- **From concept to system** using spiral, ceramic, tubular, plate and frame or hollow fibre modules
- Microfiltration Systems
- Ultrafiltration Systems
- Nanofiltration Systems
- Reverse Osmosis Systems



### From Laboratory to Pilot Units:

- Laboratory units for screening and development
- Bench units for scale up studies
- Pilot units for process validation



### Process Development Service:

- Screening of membranes to select most optimum type
- Optimization of operating parameters
- Development of complete process



### Service and Module Replacement:

- MMS have extensive know-how in trouble shooting membrane systems
- MMS can replace or retrofit any membrane modules
- Together with our development service we can potentially find a more suitable module for your process
- Membrane stock for rapid replacement





## MMS Industrial Applications

### Dairy

- Milk concentration (up to 35% TS)
- Whey protein concentrate (WPC 35-85)
- Milk protein concentrate (MPC 50-90)
- Native whey and MCC production
- Whey concentration
- Whey demineralization
- Milk and whey sterilization
- Fractionation of oligosaccharides
- Fractionation of whey proteins
- Brine water treatment

### Food & Beverage

- Protein fractionation & concentration
- Extract fractionation & concentration
- Hydrolysate fractionation & concentration
- Sugar fractionation & concentration
- De-alcoholization of beer and wine
- Juice preconcentration
- De-alcoholization
- Soya milk de-bittering and concentration
- Gelatine clarification and concentration

### Extracts

- Herbal extract fractionation and concentration
- Extract concentration
- Extract fractionation
- Selective enrichment of functional ingredients
- Aroma recovery
- Colour extraction

### Bio-Pharmaceutical

- Fermentation broth clarification
- Protein and enzyme concentration
- Concentration and desalting of pharmaceutical ingredients
- Removal of waste water contaminants
- Peptide concentration & de-salting
- API purification & concentration
- Oligosaccharide purification & concentration

### Bio-Chemical

- Solvent recovery
- Acid/caustic recovery
- Polymer purification & concentration
- Organic acid clarification & purification
- Organic acid concentration
- Sugar clarification & concentration
- Ethanol purification

### Industrial Water

- COD & TOC reduction in process water
- Oil removal from water
- Condensate water polishing
- White water treatment
- Brine water treatment
- Salat water treatment
- Sweetener wastewater treatment

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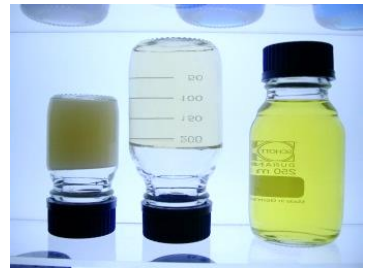
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## MMS Membrane Know-How

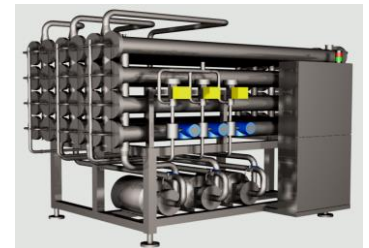
### Membrane Process Development:

- 20 years of membrane process know-how
- Over 100 industrial systems installed
- Over 250 applications developed
- Dedicated laboratory for membrane process development



### Engineering & Design:

- From concept to system is in our DNA
- Turn key solutions for customer specific solutions
- High flexibility due to in house manufacturing



### Construction & Assembly:

- Own workshop for stainless steel and high grade steel welding
- High end manufacturing using orbital welding
- GMP execution



### Automation:

- In-house automation using Siemens, Allen-Bradley and Schneider
- Programming specific for membrane systems



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