



# HIGH PERFORMANCE MEMBRANE FILTRATION MODULES PROFESSIONAL SERVICE PROVIDER



UNISOL MEMBRANE TECHNOLOGY

[www.unisol-global.com](http://www.unisol-global.com)



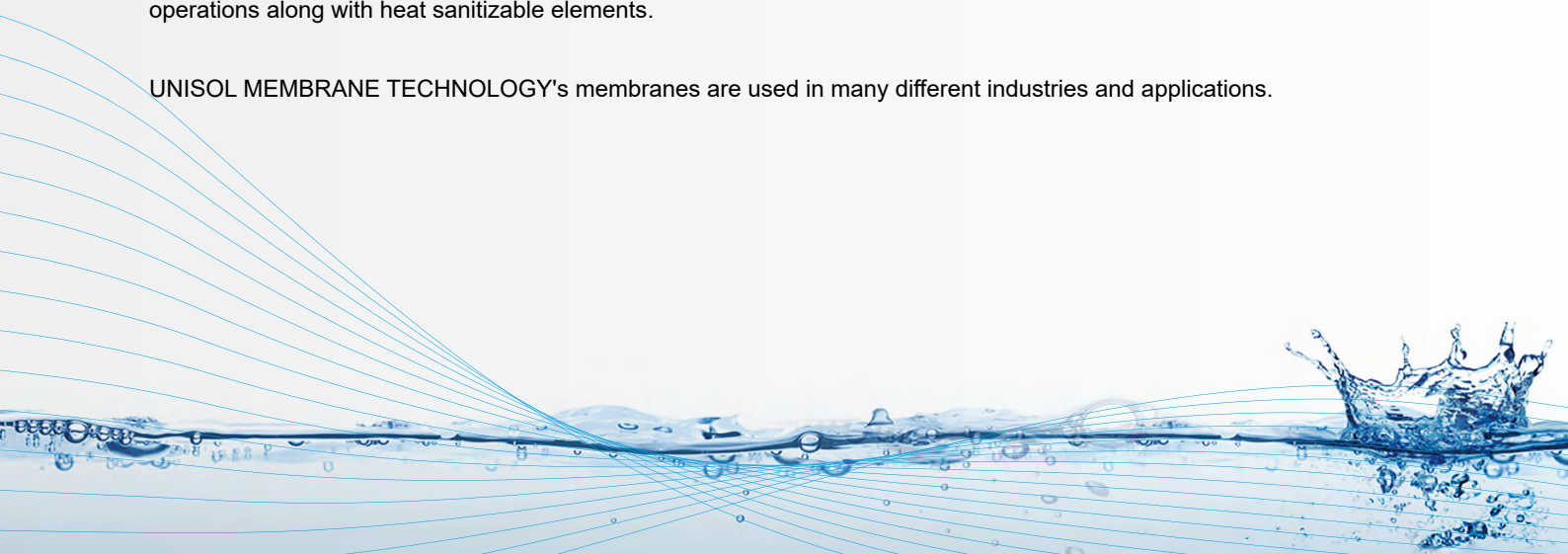
# COMPANY PROFILE

## Capabilities

UNISOL Membrane Technology is the specialty membrane manufacturer of reverse osmosis, nanofiltration, ultrafiltration and microfiltration products. With a diverse product range and unmatched flexibility, we take pride in our ability to customize our products and service offering to address customers' unique requirements.

In addition to offering standard spiral wound replacement products, UNISOL MEMBRANE TECHNOLOGY offers a wide range of specialty elements for process and sanitary applications, high and low pH, high temperature or high-pressure operations along with heat sanitizable elements.

UNISOL MEMBRANE TECHNOLOGY's membranes are used in many different industries and applications.



The General Manager of UNISOL MEMBRANE TECHNOLOGY, Mr. Hans Jörg Heckmann, provides a vast amount of experience in the field of separation technologies. He started his career from the basics in project engineering, assembling decades of work experience in the Western and the Asian business culture and he experienced the working environment in SMEs and MNCs.

His background assures the required knowledge to proceed according to the needs of the customer base and at the same time secures the leadership of a dedicated team within a dynamic business environment. Combining this experience with a state of the art operation, a customer oriented administration and a strong exposure to R&D is the base for the establishment of a successful component supplier in the industry of membrane separation.



Hans Jörg Heckmann  
General Manager

## Target Industries / Applications

### Industries

- Industrial Wastewater
- Industrial Process Water
- Power Utility
- Pulp Paper
- Chemical Industry
- Metal Finishing
- Automotive
- Ink / Dye Production
- Textile
- Plating / Coating

### Process Streams

- Food Processing
- Dairy
- Pharmaceutical Process Separations

### Light Industries

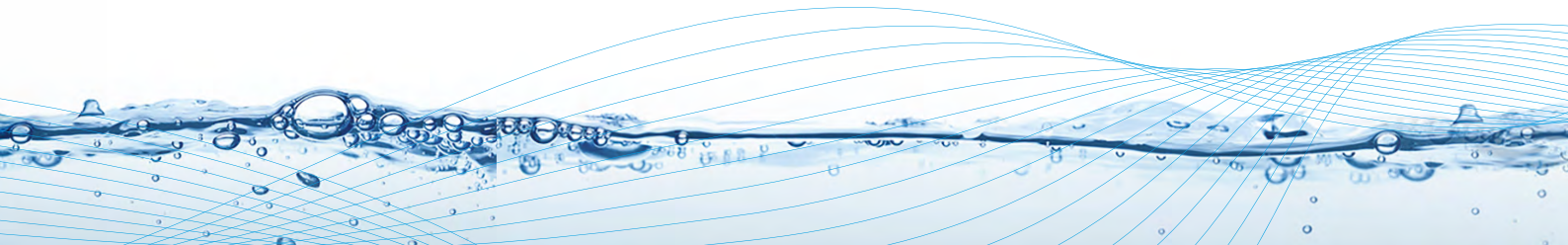
- Bottled Water Plants
- Beverage Industry
- Laundry Wastewater Reuse
- Water Park Pool
- Agricultural Use
- Greenhouse

### High Purity Water

- Dialysis
- Laboratory
- Pharmaceutical Water (WFI)

### Municipal

- Municipal Drinking Water
- Municipal Wastewater / Water Reuse



# PRODUCTION BASE

UNISOL provides a complete production and development base. The facilities, covering operations, administration and research extend over an area of 4,000 m<sup>2</sup>.

The production lines are highly automated in order to achieve high quality standards and the future intelligent production of membrane modules.



## Smart Production

Implementing robots into the processes of cutting, welding, assembling and testing allows for the improvement of efficiency, reliability and stability of our products.



## Big Data Management

The real-time data collection on all links of the production line allows for the traceability of the production process. Big data management then assures the control of the product quality at highest possible level.

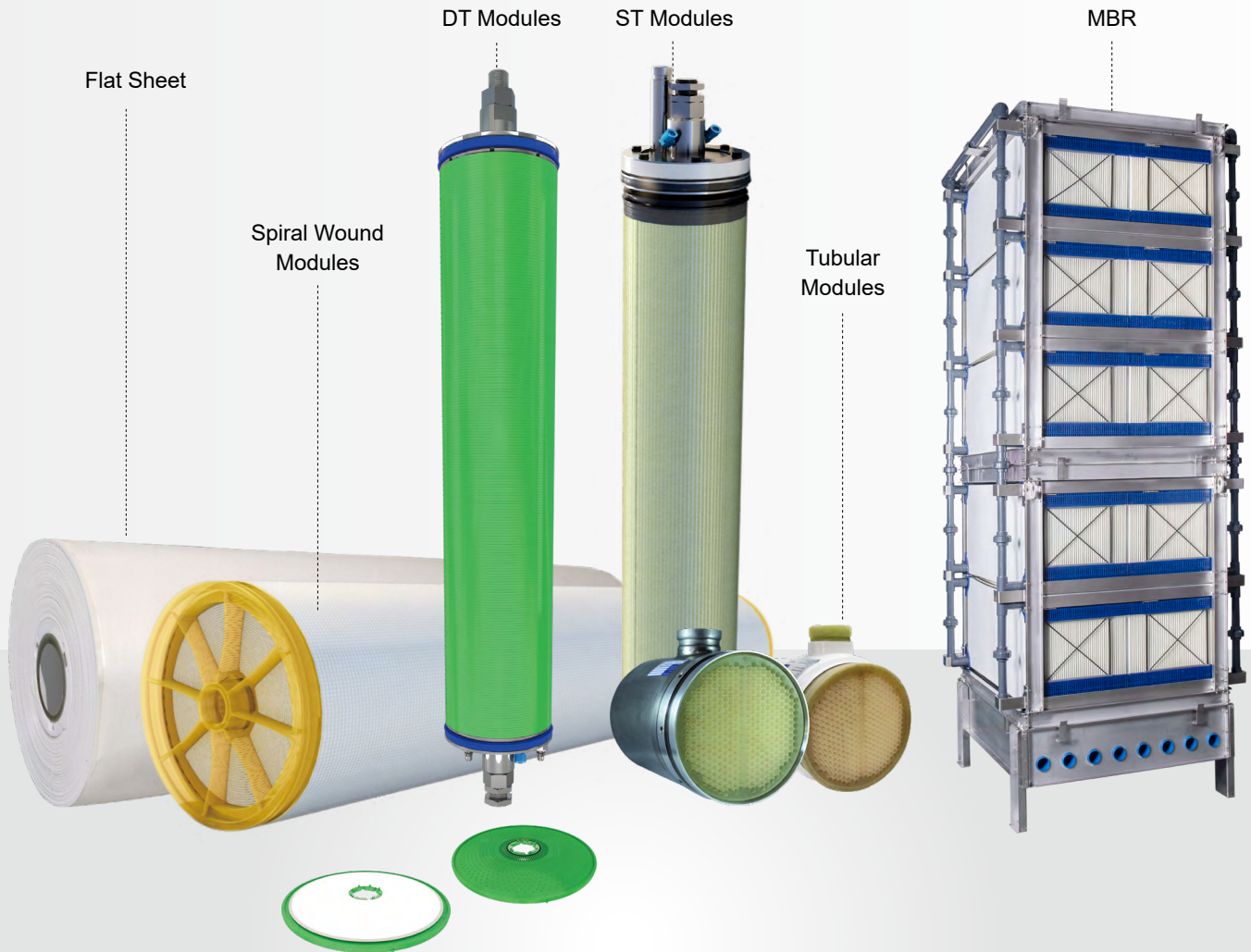


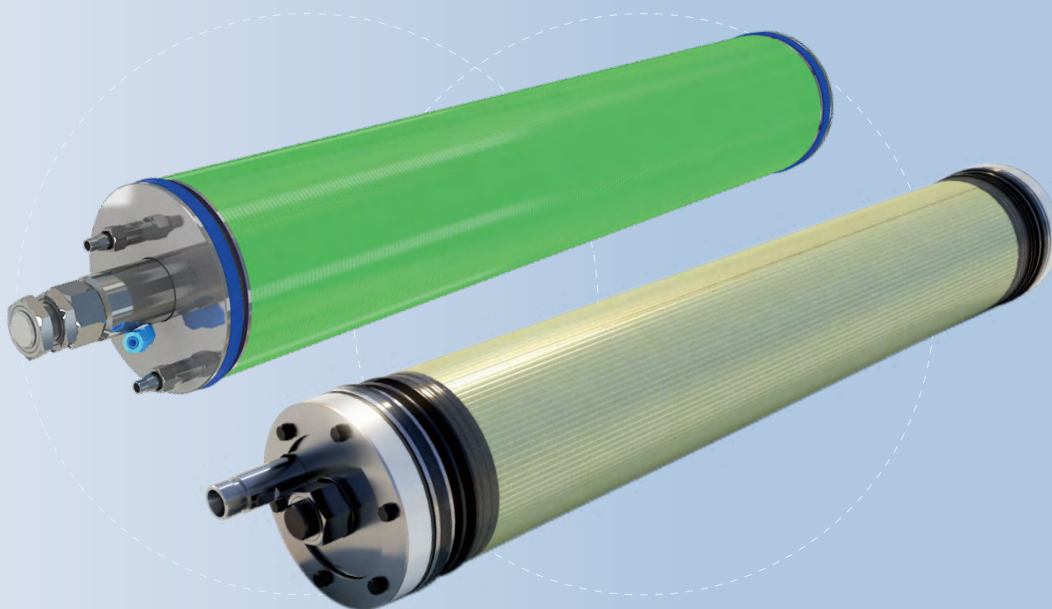


# PRODUCTS

Our product portfolio extends from standardized filtration modules to customized filtration modules, they cover microfiltration, ultrafiltration, and nanofiltration and reverse osmosis.

Our offering includes flat sheet, spiral wound modules, tubular modules, DTRO modules and a hybrid MBR.





## DT/ST MODULES

The DT/ST modules of UNISOL are cost effective solutions for the desalination or purifications of liquids. Our DT/ST module design can handle feed streams at high TDS and certainly can provide various separation characteristics.

## A new enhanced generation of DT/ST modules

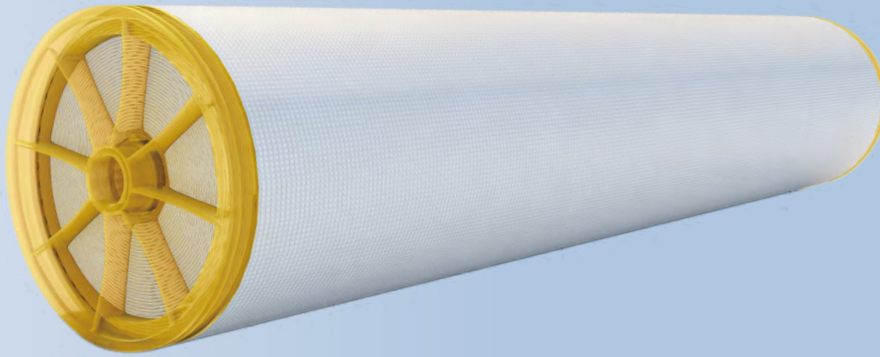
### Advantages

- High quality membrane: stable performance at high flux and rejection.
- A new generation of deflector: improved robustness, higher operating pressure and turbulence leading to higher yields and flux.
- Long membrane life: reduced cost of operation.
- High packing density: the spiral wound design allows for a maximum membrane area in the module.

### Applications

Landfill leachate treatment  
 Concentration  
 Chemical wastewater  
 Zero liquid discharge / Reduction of industrial wastewater

Wastewater desulfurization  
 High solids applications  
 Offshore seawater desalination



## SPIRAL WOUND MODULES

For the different applications of spiral wound modules, UNISOL provides a portfolio of spiral wound modules that stretches from standard modules to products that are designed precisely to the customer needs. The complete spectrum of UF, MF, NF and RO membranes is available within our spiral wound products, which are provided at high quality.

### All designs available

Standard classification:

1. Sanitary Design: 3838, 6338, 8038, 8338
2. Industrial Design: 2540, 4040, 8040
3. Temperature, Caustic and Acid, Solvent Resistant

### Advantages

- High packing density
- Sharp cut-offs
- Great mechanical strength

### Applications

Industrial component separation

Seawater desalination

Whey Protein Concentration, Fermentation broth concentration, Sweeteners, Clarification

E-Coat, Hemicellulose separation, Desalination







## FLAT SHEET

UNISOL flat sheet membranes cover the whole range from micro-, ultra-, and nanofiltration and are available in a broad range of polymers that include PES, PS, PAN and PVDF at various MWCOs.

## Customized chemistry

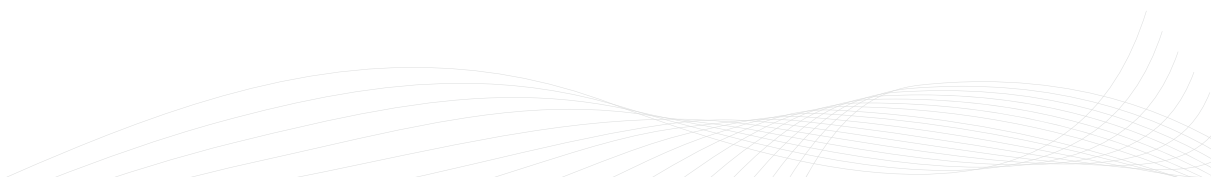
### Advantages

- High flux
- High selectivity
- Chemically enhanced membrane properties
- Low fouling & cleaning efforts

### Common Applications

WPC Gelatin  
Decolorisation  
Color removal

E-Coat  
Caustic brine regeneration  
Produced water





## MBR

Within the application of MBR the membrane serves as a physical barrier to separate the liquid phase from the biomass. A clarifier is no more required to achieve the intended effluent quality. In that way MBR allows to operate at a higher MLSS and increases the efficiency of the biological treatment, decreases the required foot print and improves the stability of the waste water treatment process.

## High packing density & Reliable performance

### Advantages

- High effluent quality
- Improved process stability
- Smart design (Reduced braiding and sludge deposition)
- Modular design (Size can be adapted to the existing space)
- High packing density
- Optimized oxygen transfer (Fine bubble aeration)
- Lower pretreatment requirements

### Applications

Municipal wastewater · Industrial wastewater · Water treatment leisure industry



## TUBULAR MEMBRANE

MEMOS tubular ultrafiltration membranes have superior performance and are widely used in various wastewater treatment processes, food and pharmaceutical.

## Innovative replaceable membrane module design

### Advantages

---

- Made in Germany, reliable quality, more than 1000 references
  - Good anti-fouling performance, easy to clean
  - A variety of sizes and specifications are available, the membrane core can be replaced
  - Long membrane life (5-8 years)
  - High throughput, 50-100L / m<sup>2</sup> · h
- 

### Applications

---

Landfill leachate and industrial wastewater treatment (external TUF / MBR)

Fruit juice, beverage clarification and separation

Wastewater softening and hardening

Treatment of oily wastewater and oily emulsions

---

# MARKET APPLICATION

Automotive

## Water & Wastewater

- Municipal sewage
- Industrial wastewater concentration
- Industrial wastewater zero discharge
- Landfill leachate treatment
- Coal chemical wastewater
- Desulfurization wastewater
- Mining wastewater

## Dairy

- WPC
- Whey desalting
- Whey fat removal





## Textile

Dyeing wastewater  
Chemical fiber textile wastewater  
PVA Application

## Food and Beverage

Juice clarification and filtration  
Gelatin

## Pharmaceutical



# REFERENCES



Singapore  
Industrial Wastewater  
150t/d



Guangdong  
Desulfurization Wastewater  
48t/h



Sichuan  
Pesticide Wastewater  
7500t/d



Inner Mongolia  
Coal Mine Water Zero Discharge  
35t/h



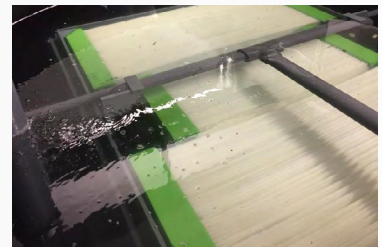
Plauen, Germany  
Municipal Wastewater



Shandong  
High-Salt Chemical Wastewater  
500t/d



Yunnan  
Landfill Leachate  
200t/d



Steinheid, Germany  
Swimming Pool Water Filtration

# COMPANY MISSION

TO SUPPORT OUR CUSTOMERS  
BY SUPPLYING A SUPERIOR PRODUCT  
WHILE SUSTAINING THE ENVIRONMENT





## UNISOL Membrane Technology

[www.unisol-global.com](http://www.unisol-global.com)

### China

- ☎ +86 592 7290586
- ✉ [infochina@unisol-global.com](mailto:infochina@unisol-global.com)
- 📍 Section B, 4th Floor, No.98, Shitou Road, Xiang'an District, 361101 Xiamen, China

### India

- ☎ +91 98330 90670 / +91 98201 89128
- ✉ [infoindia@unisol-global.com](mailto:infoindia@unisol-global.com)
- 📍 Mumbai, India

### Germany

- ☎ +49 171 7540218
- ✉ [infogermany@unisol-global.com](mailto:infogermany@unisol-global.com)
- 📍 Fritz-Bothmann-Strasse 1, 99867 Gotha, Germany

### USA

- ☎ +1 904 439 5928
- ✉ [infousa@unisol-global.com](mailto:infousa@unisol-global.com)
- 📍 120 Palencia Village Drive, #C-105/122, St. Augustine, Florida 32095, USA