

Membrane and filter development at Aqua free

A milestone in water
filtration





Your specialist
for water hygiene

A conceptual image featuring a realistic Earth globe as a planter. A small green plant with several leaves is growing out of the top of the globe. The globe is partially submerged in water, with dynamic splashes and droplets captured around it, creating a sense of freshness and movement. The background is a soft-focus green, suggesting an outdoor environment.

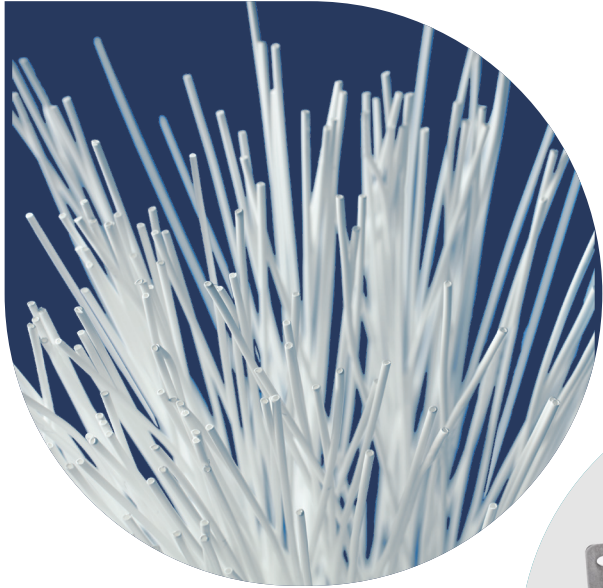
Sustainability plays a BIG role at Aqua *free*!

Inlet filtering prolongs the service life
of your devices and existing filters!

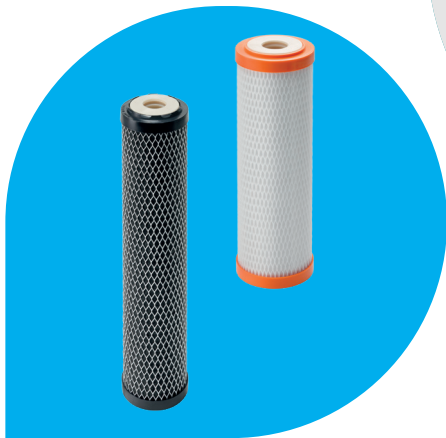


Your specialist
for water hygiene

Contents & competences



Membranes



Standard filter



OEM

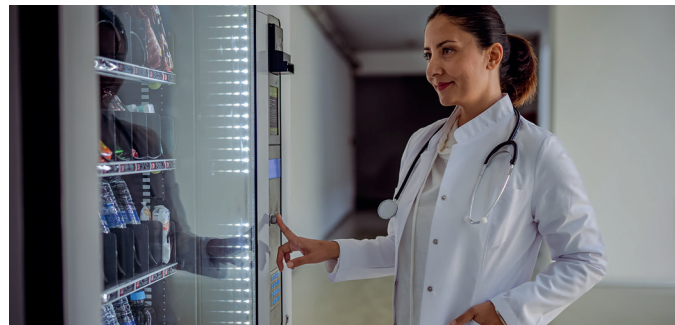
- 01 Applications and sectors
- 02 Microfiltration vs. ultrafiltration
- 03 Filter design
- 04 Our portfolio
- 05 Filter overview cartridge system
- 06 Special hygienic requirements
- 07 OEM and special products
- 08 Micro water treatment

Protect your customers and devices

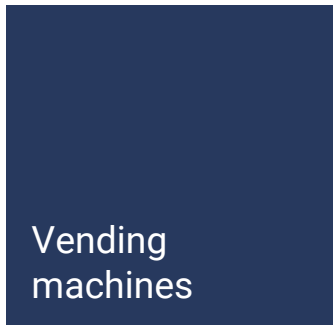
All these applications include additional pipes or water tanks. They should be protected by an integrated filter to prevent undesirable microbial contamination or retrograde contamination.



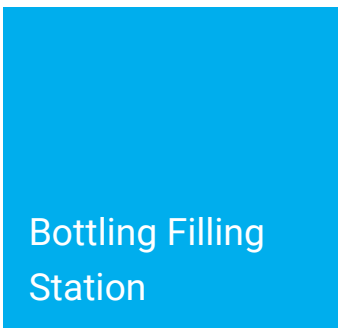
Water
dispensers



Vending
machines



Bottling Filling
Station

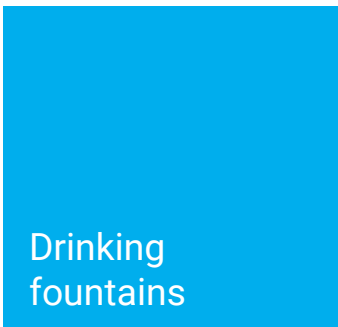


Filtration solutions

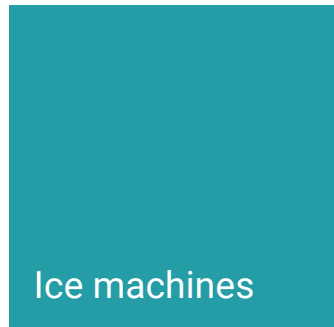
in the beverage or food industry and
in the organic or pharmaceutical sector



Drinking
fountains



Ice machines



Cleaning systems
& cleaning
devices



Whether installed, portable or temporary – we offer the ideal membrane solution for every industry

Legionella, biofilm and other bacteria present constant risks for the day-to-day use of water.



Camping



Travelling



Boat/Yacht



Sanitary facilities



Events, festivals



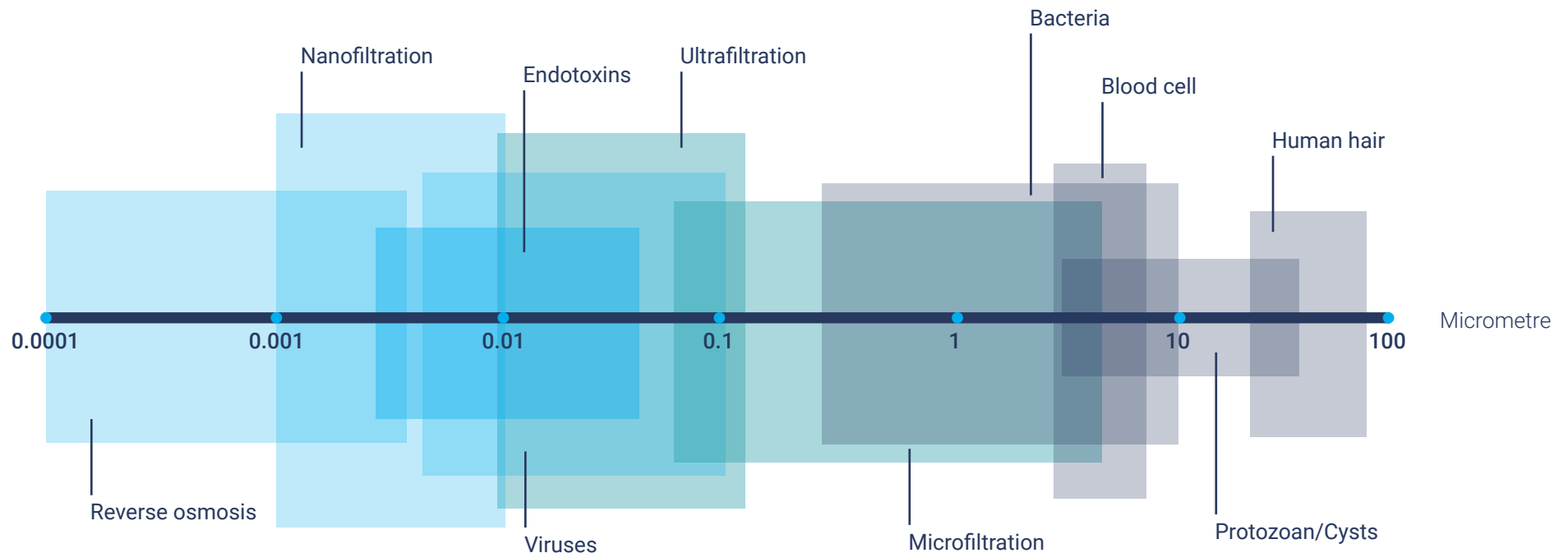
Medicine



Emergency shower

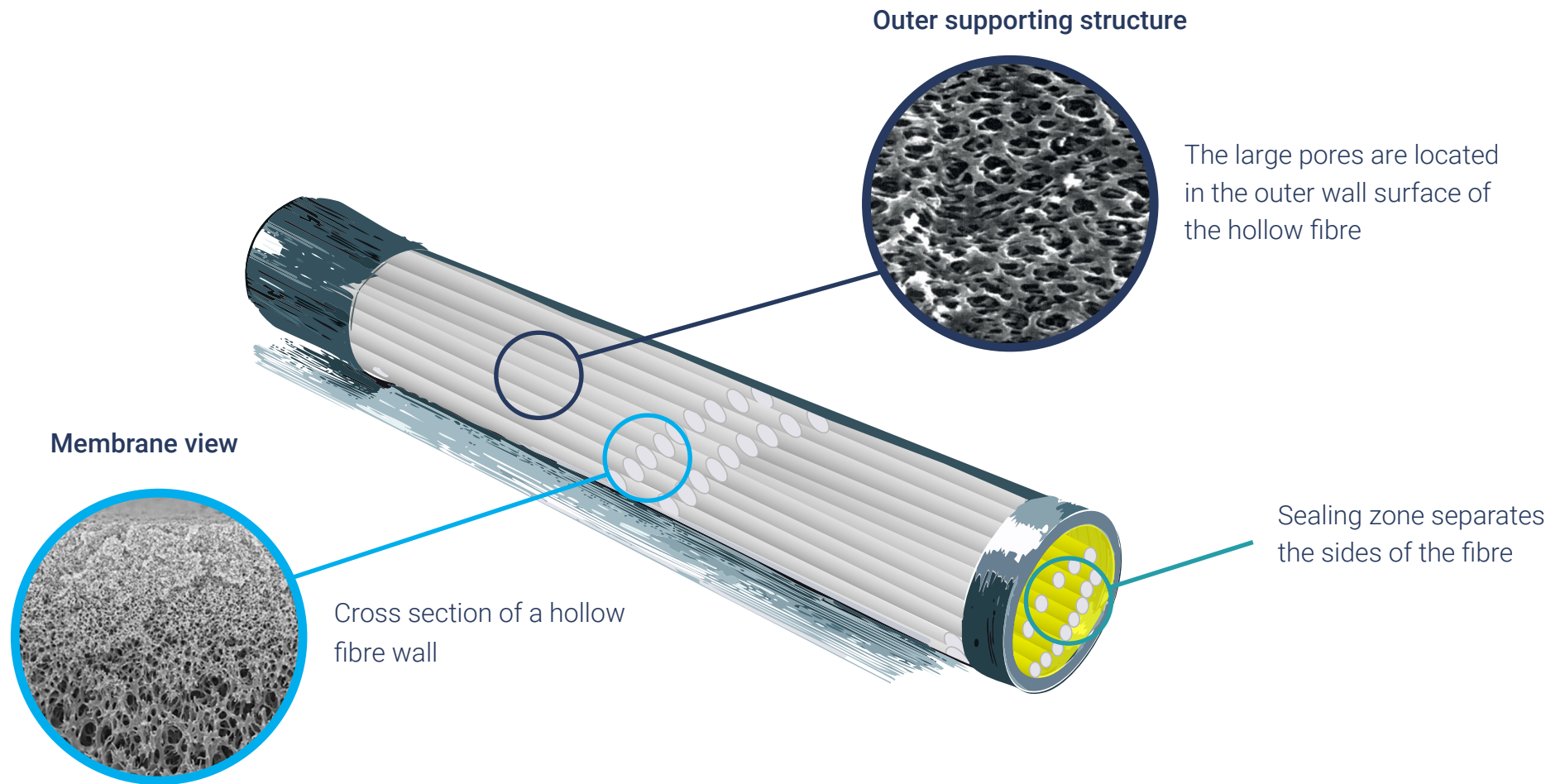
Microfiltration vs. ultrafiltration

Membranes are often labelled as offering an ultrafiltration solution but actually only meet microfiltration criteria. The term "nominal pore size" is often used to justify this. Misleading labelling like ultrafiltration suggests superior filtration performance, including additional virus retention. Retention rates are intentionally not specified. At Aqua *free*, we ensure our membrane specifications are presented clearly and comprehensively. We guarantee that our products comply with the specified filtration classes to ensure the best possible quality and safety and to provide our customers with the reliability they expect.



Filter design - hollow fibre membrane

To prevent air blockage, fibres of a permanently hydrophobic variant of our membrane are integrated in a membrane bundle. This is especially beneficial for portable filters not permanently installed in pipes or when water is with CO₂ carbonated.



Our portfolio

Membrane filtration

Microfiltration



Micro 10

Micro 20

Bacteria

Microfiltration ensures a high retention of bacteria, particles and protozoa at sterile filtration level, ideal for high-flow and high-capacity applications.

Ultrafiltration



Ultra 10

Ultra 20

Bacteria & viruses

Due to the smaller pore size, ultrafiltration offers better retention rates than microfiltration and also reliably retains viruses. It is suitable for high-flow and high-capacity applications.

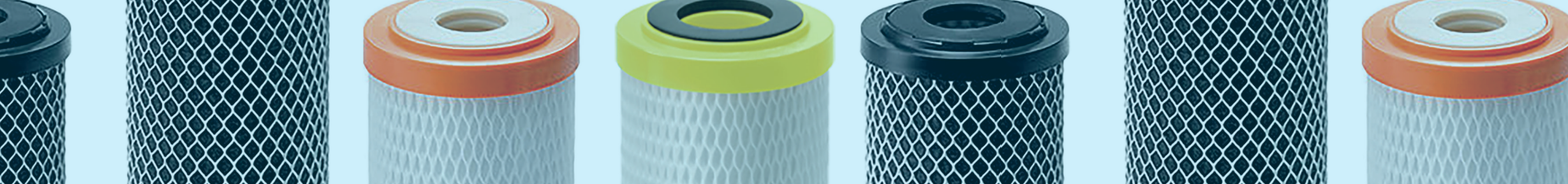
Prefilter individually and in combination

Prefiltration



PreFilter PP

High-performance prefilter made of meltblown food-grade polypropylene, manufactured from thermally bonded microfibres. Retains particles and fine suspended sediments.



Combination with microfiltration

Combination of prefilter & microfiltration



Dual Stage
MF 10-P

Combination filter combines the advantages of particle (pre)filtration and microfiltration. Specially developed for reliable retention of bacteria in water with a high particle load. Filtration has absolutely no impact on dissolved substances or chlorine.

Active carbon and microfiltration

Active carbon



Active Carbon
Block 10-C



Active Carbon
Block 10-CL

Active carbon & microfiltration



Dual Stage
MF 10-C



Dual Stage
MF 10-CL

Active carbon is a highly porous material (solid) used to purify liquids and gases. It can adsorb an extensive range of dissolved impurities. As an active carbon block, it also functions as a prefilter and extends the service life of the membrane filter. From odours and flavours to mineral oils, polycyclic aromatic hydrocarbons (PAHs), volatile organic compounds (VOCs), medical residues, herbicides, pesticides or heavy metals – our active carbon and microfiltration filters ensure reliable protection and efficient removal.

Overview of filter cartridges

Name	Micro 10, Micro 20		Ultra 10, Ultra 20		DualStage MF10-C		DualStage MF10-CL	
Art.-Nr.	501042 501379		501047 501398		501006		501009	
								
Type of filter	Membrane filter				Combination of active carbon/membrane			
Type of filtration	Microfiltration		Ultrafiltration		Active carbon & microfiltration			
Type of membrane	Asymmetrical hydrophobic hollow fibre membranes							
External filter medium	-		-		Active carbon (PAC), bonded to a fibre matrix		Active carbon, sintered	
Max. membrane pore size	0.2 µm		0.02 µm		0.2 µm		0.20 µm	
Porosity (carbon/ prefilter)	-				0.5 µm		5 µm	
Max. pressure	5 bar (75 psi)							
Flow rate l/ min @ 2bar	M10: 46 M20: 63		U10: 8.5 U20: 20		Up to 8 l/min depending on the reduction target			
Service life in l	M10: 12,000 , M20: 38,000		U10: 12,000 , U20: 18,000		Up to 10,000		Up to 5,000	
Max. temperature	40°C							
Large cartridge (ø x length in mm)	M10: 64x248, M20: 64x506		U10: 64x248, U20: 64x506		71x249		73x248	
Housing	Fits into standard 10" (9 ¾) or 20" housings, EPDM seals enable quick and easy replacement							
Bacterial retention membrane	>99.99999% (>log 7)		>>99.99999% (>>log 7)		>99.99999% (>log 7)			
Virus retention membrane	-		>99.99% (>log 4)					

Our hydrophilic polyethersulfone (PES) membranes from Belgium are suitable for sterile microfiltration and ultrafiltration filters, are manufactured to ISO 9001 and ISO 13845, meet ASTM F838 standards and deliver >Log7/cm² filtration performance. Their asymmetrical design ensures a high volume flow. Our microfilters are frost resistant and can be re-activated.

DualStage MF10-P	Active CarbonBlock 10-C	Active CarbonBlock 10-CL	PreFilter PP
501226	501007	501016	501041
			
Combination of prefilter/membrane	Active carbon filter		Prefilter
Prefilter & microfiltration	Active carbon filtration		Particle filtration
	-		-
Polypropylene, meltblown	Active carbon (PAC), bonded to a fibre matrix	Active carbon, sintered	Polypropylene, meltblown
-			
1 µm	0.5 µm	5 µm	5 or 1 µm
			-
Up to 8 l/min at 2 bar	Up to 8 l/min depending on the reduction target		Approx. 20 l/min
Approx. 3,000	Approx. 38,000 (elimination of chlorine)	Approx. 5,000	-
			-
62x248	71x249	72x248	62x248
Fits into standard 10" (9 ¾) housings			
	-		
-			

Aqua free – special hygiene requirements call for individual solutions.

In addition to germs, water often contains impurities such as organic compounds, drug residues, chlorine, heavy metals or pesticides.

Our filter cartridges provide the remedy!

There is no catch-all solution to meet the specialised hygiene requirements for many areas. We provide specialised technical solutions customised to a client's needs for the most diverse range of applications

As a medium-sized company, we are characterised by:

- High level of flexibility
- Fast response times
- Professional project management processes
- Extensive experience in the fields of design, prototype production and test procedures

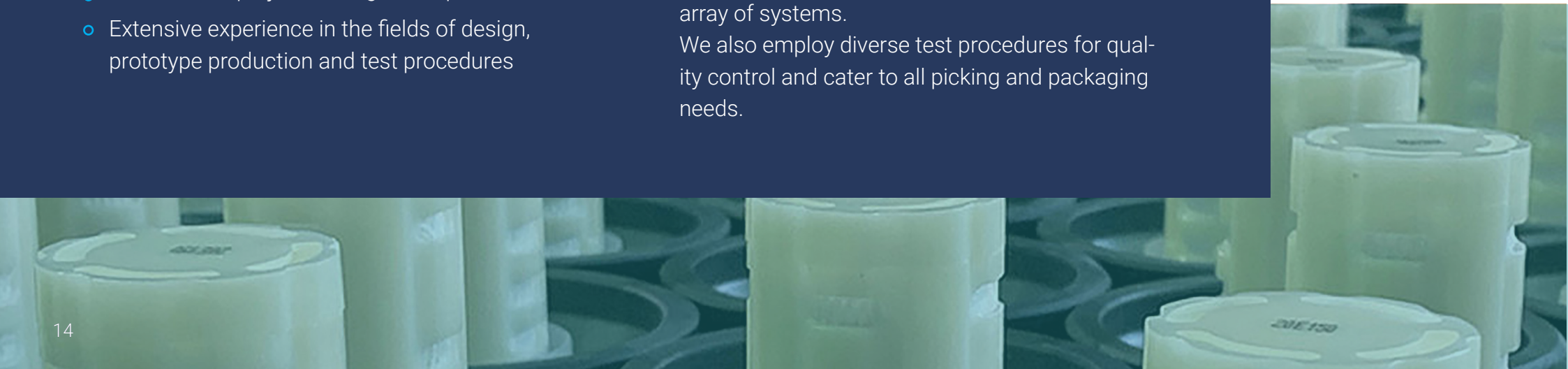
We offer extensive expertise in:

- Microbiology
- Membrane manufacturing
- Filtration technologies

Our range covers sample and prototype construction in various qualities and quantities, including small-batch production through injection moulding or 3D printing.

Thanks to our interface expertise and adapter technology, we are able to integrate filters into an array of systems.

We also employ diverse test procedures for quality control and cater to all picking and packaging needs.



OEM and special products

Our expertise makes your individual wishes come true!

End products:

Filter cartridges and inline filters for dead-end or cross-flow filtration, available as either pure membrane filters or combined with other filter media.

Membrane raw materials:

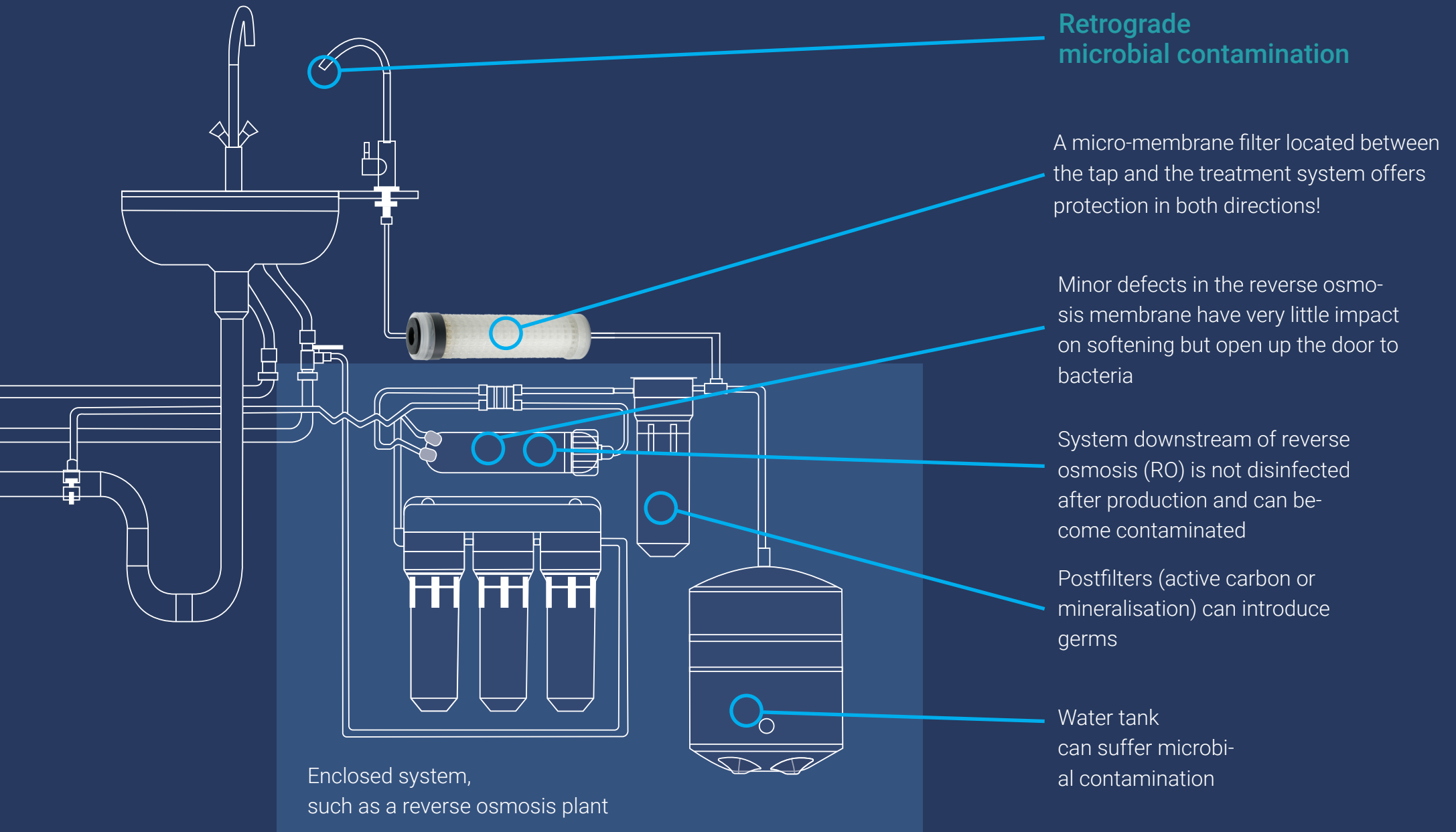
Pre-assembled membrane bundles with a defined number of fibres and measuring up to 1.5 m in length.

Semi-finished products:

Membrane filter cartridges and inserts that can be integrated into your end products.



Micro water treatment and its pitfalls



Notes



Aqua *free* – Your specialist for water hygiene in Europe

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