



nx

filtration

Advanced hollow fiber membranes

for sustainable food and beverage applications



Sustainable membrane solutions

NX Filtration is your membrane partner for filtering beverages and treating water. We offer high end microfiltration membranes and membrane modules for the food, beverage and pharma industry, as well as unique hollow fiber nanofiltration membranes to reduce your water footprint.



Our microfiltration membranes are used for the clarification of beverages, such as beer and wine and ideally suited for dairy, biotechnology and pharmaceutical applications. They offer a high-quality, sustainable and low-opex alternative for traditional filtration technologies.

Our unique direct nanofiltration membranes enable the reduction of your water footprint, by treating incoming water, enabling the recovery of valuable raw materials from wastewater and recycling wastewater.

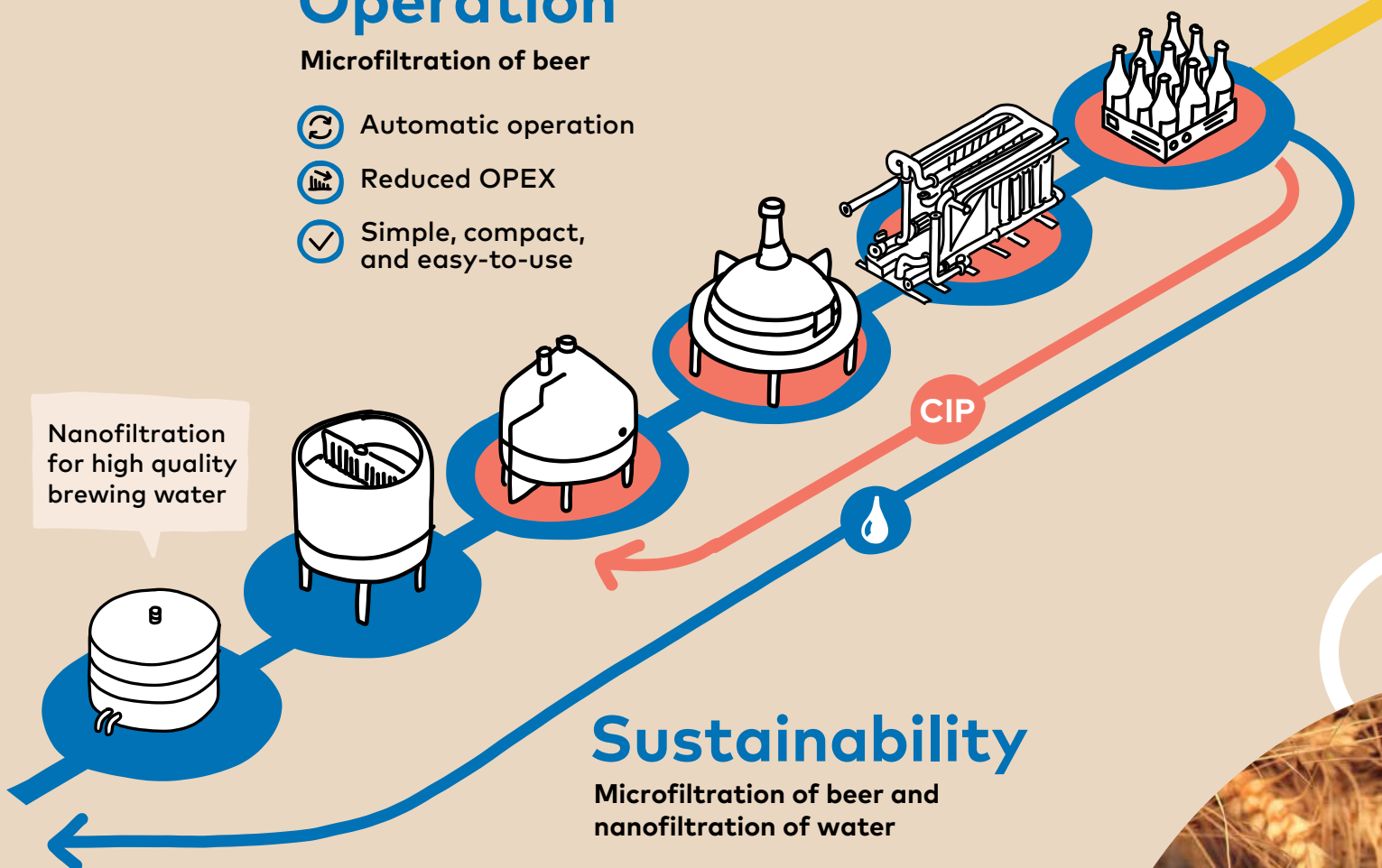
Our sustainable membrane solutions for breweries

Operation

Microfiltration of beer

- Automatic operation
- Reduced OPEX
- Simple, compact, and easy-to-use

Nanofiltration for high quality brewing water



Sustainability

Microfiltration of beer and nanofiltration of water

- 20% CO2 footprint reduction
- 35% Lower water consumption
- ~95% Water reuse
- CIP Recovery



Quality

Microfiltration of beer

-  Improved taste
-  Consistent quality
-  Prolonged shelf life

Hollow fiber membrane beer filtration

Beer membrane microfiltration is rapidly gaining momentum as the preferred filtration process at breweries, as this technique shows several important advantages over traditional diatomaceous earth filtration.

NX Filtration is amongst the few suppliers of hollow fiber beer filtration membranes globally. With our team of experts we are constantly working on further performance optimizations and innovations.

Direct nanofiltration enabling water footprint goals

NX Filtration offers a worldwide unique direct nanofiltration (dNF) concept that can be applied in many processes in the food and beverage industry, reducing water footprint, improving quality and bringing down cost. Direct nanofiltration is an innovative and proprietary technology that enables very precise and controlled rejection and flux properties of the membrane.

Applying direct nanofiltration, incoming water streams can be optimally tailored for the production of high-quality food and beverage products. This includes the removal of unwanted organics, micropollutants, color, viruses and bacteria, hardness, iron and heavy metals in a robust one-step process. In addition, wastewater from e.g. cleaning (CIP) and utilities can be treated efficiently and recycled. Various raw materials can be reclaimed since the direct nanofiltration membranes are chemically stable, enabling performance even at high caustic soda (NaOH) concentrations.





Our membrane portfolio

Filtration objective

Suspended solids and micro plastics

Bacteria

Viruses

Protein and colloidal silica

Micropollutants color and nano plastics

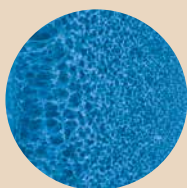
Selective salts, softening and pharmaceuticals

Cut off

Typical Flux (lmh)

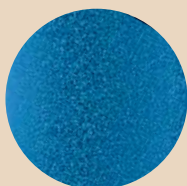
MgSO₄ rejection (%)

	Nano dNF		Ultra UF		Micro MF	
	dNF40	dNF80	UF010	UF150	MF100	MF500
Suspended solids and micro plastics	○	○	○	○	○	○
Bacteria	○	○	○	○	○	○
Viruses	○	○	○	○		
Protein and colloidal silica	○	○	○			
Micropollutants color and nano plastics	○	○				
Selective salts, softening and pharmaceuticals	○					
Cut off	400Da	800Da	10kDa	150kDa	100nm	500nm
Typical Flux (lmh)	20-40	25-50	50-100	50-100	25-100	25-100
MgSO ₄ rejection (%)	90	80	n/a	n/a	n/a	n/a



Microfiltration

Ideally suited for high quality – low energy clarification of beverages, such as wine and beer, as well as for dairy and pharmaceutical applications



Ultrafiltration

The best choice for the removal of small particles, bacteria and viruses from water. Used for RO pre-treatment, potable water and wastewater treatment



Nanofiltration

Worldwide unique nanofiltration concept, designed to remove organics from water in one single step: without pre-treatment and without the use of chemicals

Unique and patented technology

NX Filtration's hollow fiber membranes are based on unique recipes and innovative patented production methods. The base material for our membranes is PolyEtherSulfone (PES). This provides an ideal chemical and thermal stability for use in robust filtration processes. Compared to other membrane materials, PES enables the production of membranes with very small pore sizes and narrow pore size distribution. We manufacture our membranes with a patented layer-by-layer process, where nano-scale layers are deposited on a membrane support. This method enables very precise and controlled rejection and permeability properties of the membrane.

Pilots

The complete range of our membranes is also available in laboratory and pilot scale modules that can be used in pilot installations, ranging from lab-scale to full-scale pilots. This provides the opportunity to perform a quick filtration and fouling test and select the best membranes for your application.

Certifications



According to FDA and EU food and beverage regulations.



" Our hollow fiber Direct Nanofiltration (dNF) membranes are the next generation polymer membranes. They provide the ideal solution for emerging problems around micro-pollutants, including the residues from antibiotics, hormones, pesticides, pharmaceuticals and nano-plastics. dNF replaces the more traditional multi-step filtration processes with a simple single step process. This results in a significant reduction in capital and operating cost, while reducing the footprint of the installation. "

— Prof.dr.ir. Erik Roesink
founder NX Filtration