

**Technical data sheet**  
**Ultrafiltration cassette filter MicroClear® MC03**  
**Article-No. 80200021**

Filter cassette for the filtration of water. Typical applications:

Waste water in membrane bioreactors, surface water. The cassette consists of:

- housing and header made of polypropylene (FDA approved)
- 24 active filter plates made of polypropylene (FDA approved)
- 2 protective plates made of polypropylene (FDA approved)
- laser welded membrane made of Polyethersulfone (KTW approved)



Parameter	Unit	Value
dimensions	L x B x H mm	207 x 207 x 492
outlet diameter	mm	25
protective plates		2
No. of active plates	mm	24
plate spacing	mm	5,5
total membrane area	m <sup>2</sup>	3,5
mean flux *	l/m <sup>2</sup> h	
2 chemical cleanings/year		30
1 chemical cleaning/year		15
maximum flux	l/m <sup>2</sup> h	50
membrane material		PES
cut-off	kDalton	150
pore size	µm	0,04
filtration pressure	bar	0,1-0,25
backflush pressure	bar	0,05
filter housing material		PP
weight	kg	ca. 4,5

\* depending on wastewater characteristics

The MicroClear® design and specifications are subject to change without notice.

## Design Parameters

Type of wastewater:

- domestic
- municipal
- industrial

Treated Water Quality:

Parameter	Unit	Design	DIN 19650 <sup>1</sup>	Guarantee
BOD	mg/l	< 5		
COD	mg/l	< 50		
TSS	mg/l	< 1		< 1
TKN-N	mg/l	< 5		
ph		6,5-8		
Faecal Coliforms	Counts /100 ml	< 1	< 200	< 10
Streptococcus	Counts /100 ml	< 1	< 100	< 10
Salmonella	Counts /100 ml	< 1	n.d. <sup>2)</sup>	n.d. <sup>2)</sup>
Virus removal	%	99,9999		99.99

<sup>1)</sup> DIN19650 has 4 classes for irrigation water. Class 1 is drinking water. Class 2 is for vegetables that are used for raw consumption, sporting grounds of schools, and public parks. Class 3 and 4 has less quality, then Class 2.

<sup>2)</sup> n.d. = not detectable

The flux and the retention rate of the MicroClear® system has been tested and approved by the University of Applied Sciences at Giessen-Friedberg, Germany.

The plant performance is subject to the right design of the biological treatment and the pre-treatment of the water. If the design is made according to our recommendations, the designed outlet water quality can be expected.

## The advantages of MicroClear® compared to hollow fibre systems:

- higher filtrate output and higher retention rate due to efficient air scour, plate design and optimized membrane
- less membrane area required and therefore lower invest. Lower energy consumption per cubic meter of water
- operation with air scour only is possible (up to one year of operation), less cost for chemicals
- no clogging with fibres (e.g. hair) without fine screening 0.5 mm. No expensive fine screening necessary, only 2 mm punched hole screen
- no breaking of fibres
- multiple permeate outlets enable a complete venting, no unused membrane areas

## The advantages of MicroClear® compared to other plate and frame systems:

- higher filtrate output and higher retention rate due to efficient air scour, plate design and optimized membrane
- less membrane area required and therefore lower invest
- medium size bubble aeration with optimized flow pattern leads to less energy consumption of the total system. The aeration system is maintenance free
- MicroClear® has the only state-of-the-art laser-welded membrane module
- MicroClear® is not only welded along the outer edge, but also across the inner area of the membrane. This enables true backflush and higher output
- MicroClear®'s Full-Surface-Distribution technology makes use of the total membrane surface, because the pressure across the membrane is evenly distributed.
- higher packing density and smaller footprint (minus 50%)
- MicroClear® offers ultrafiltration, whereas most competitors use microfiltration. The retention rate for virus removal is 99.9999%
- flexible, modular configuration