

Technical Data Sheet
Filter housing MA03-1
Article-No. 80200001

Complete assembled units for biological wastewater treatment with submerged ultrafiltration membranes, including:

- Ultrafiltration module MicroClear® MC03
- Filter housing made of Polyethylene
- Membrane plate diffusor for medium bubble aeration in the filtration tank



Parameter	Unit	Value
dimension of filter housing	L x W x H cm	38 x 38 x 85
connection aeration	mm	25/1"
connection permeat	mm	25
total number of membrane elements MC03	No.	1
total membrane surface area	m ²	3,5
possible flow *	m ³ /day	
2 chemical cleanings/year		2,5
1 chemical cleaning/year		1,25
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		PE
medium bubble aeration membrane		EPDM
total required air flow for scouring	Nm ³ /h	6
weight	kg	approx. 16

* 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 ¹	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	0	n.d. ²⁾	n.d. ²⁾
Virus removal	%	99,9999		99.99

¹⁾ 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.

²⁾ 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 the possibility to make use of efficient air scour and backflush
- 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