kuraray

External Pressure Type **PVDF** Hollow Fiber Membrane Module

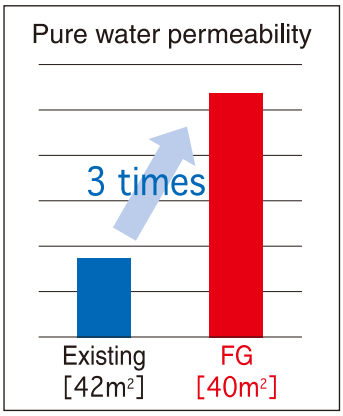
FG Module

FG-0101-S4 (US02-125) / FG-0101-S6 (US02-125)

High filtration performance with small footprint

1 High permeability

- Kuraray has developed a hollow fiber membrane module with three times higher permeability compared to its existing products. It has been observed that maximum 13m³/hr (or 8m³/m²/day) is possible in clear water filtration. With its lower transmembrane pressure difference, power cost (power for pumps) can be reduced.



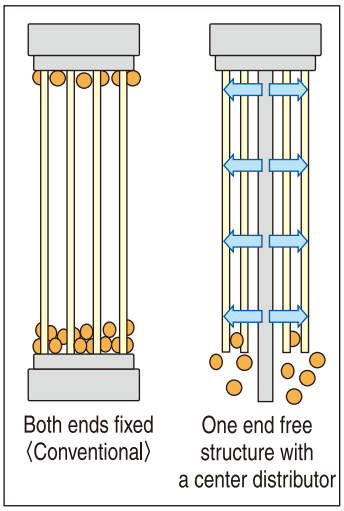
Compared to our existing product

2 High strength, high chemical resistance

- Kuraray's own hydrophilic PVDF enjoys excellent strength and chemical resistance, which enable prolonged use of the FG Module.

3 Applicable to higher turbidity

- Due to the one end free structure, suspended solids (SS) can be easily removed without accumulating between fibers.
- By ejecting air and water from the center distributor located at the center of the element, effective cleaning of the fibers can be achieved.



4 High water recovery

- The unique physical cleaning method (air backwashing) as well as the external pressure type filtration enable high water recovery with less wastewater generation*1

*1 Recovery rate (internal test result): 98%
Raw water: river-bed water with the turbidity of 0.7-10, Flow rate: 3.0m3/m2/day, Physical cleaning: every 30 min

Physical cleaning procedure

The photos show PSF membrane.


1 SS attaches to the membrane surface.


2 Attached SS is exfoliated with pressurized air.


3 SS is scrubbed off with air bubbles.


4 Membrane surface is cleaned, and the performance recovers.

5 Small footprint, low cost

- The height of the housing is as low as about 1.4 m, enabling compact system design.
- Since stainless housing is used, the system can be installed outdoor.
- Reductions in space and system cost can be achieved because a tank and pumps for backwashing are not needed.

kuraray

Applications

- Bacteria, SS, Fe and Mn removal as well as drinking water production from surface and ground water
- Purification of process water for food manufacturing, precise cleaning and etc.
- Pretreatment for RO or NF, used for ultrapure water production and seawater desalination
- Recovery and recycle of pure water washing wastewater and sand-filter backwash wastewater
- Concentration, recovery and recycle of various abrasives and other valuables

Model / Specifications

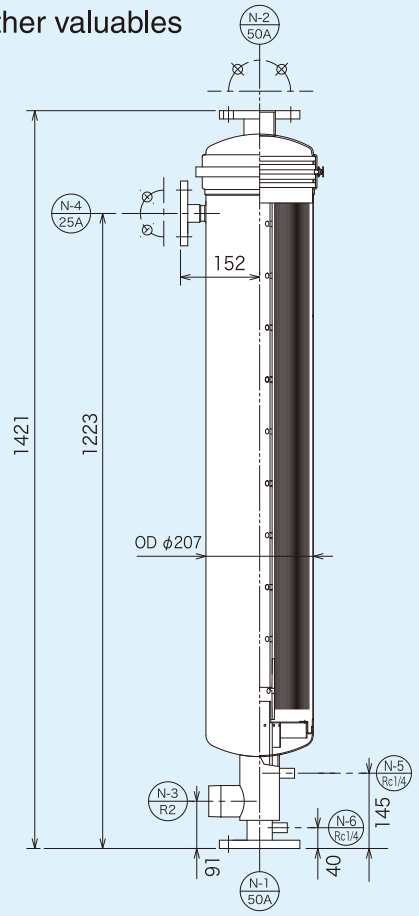
Product name			FG Module	
Module type			FG-0101-S4 (US02-125)	FG-0101-S6 (US02-125)
Element	Type		FGE-0101 (US02-125)	
	Nominal pore size (90% cutoff)		0.02μm	
	Effective membrane surface area (m^2)		40	
	Standard design flux (m^3/hr)		13 or less	
	Material	Hollow fiber membrane	Hydrophilic PVDF *1	
		Potting material	Polyurethane	
		Sheath	PVC	
		Center distributor	PVC	
		Net	Polyethylene	
		Packing	Silicon rubber	
	Filling liquid		NaClO solution*2	
Housing	Type		FGH-S4	FGH-S6
	Material		SUS304	SUS316
	Dimensions (Max. diameter x Height : mm)		ϕ207×1,421	
	Inner volume (L)		39	
Operating conditions	Filtration type		External pressure type, dead-end	
	Allowable maximum operating pressure (MPa)		0.5	
	Allowable maximum transmembrane pressure difference (MPa)		0.3	
	Allowable maximum temperature (deg.C)		40	
	pH range		1 to 11*3	

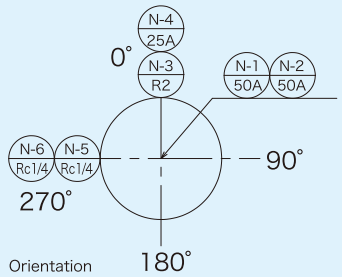
*1 Polyvinylidene fluoride (PVDF) mixed with mixed with hydrophilic resin
*2 The concentration of the NaClO solution is as follows:
- Element: 25mg/L
- Module: 5mg/L

*3 pH can excess the above range during chemical cleaning. Contact us for details.

■List of nozzles

No.	Size	Applications
N-1	10K-50	Raw water inlet
N-2	10K-50	Treated water outlet
N-3	R2	Drain outlet
N-4	10K-25	Overflow port
N-5	Rc 1/4	Air inlet (aeration board)
N-6	Rc 1/4	Air inlet (Conduit tube)





Notes:

1) Specifications and the type of the element and housing may be changed without prior notice.
2) Applications and basic data (in-house data) specified in this catalogues are standard examples. These depend on the influent to be treated, operating conditions and circumstances. Contact us before usage.
3) The nozzles shown in the above drawing are those conforming JIS.

Manufacturer

KURARAY CO., LTD.

Environmental Business Development and Promotion Division

Ote Center Building, 1-1-3 Otemachi, Chiyoda-ku,
TOKYO 100-8115, Japan
TEL: +81-3-6701-1550 FAX: +81-3-6701-1654

Distributor