



● Att. No.298E·04-2017

Covering needs from household to industrial

Hollow Fiber Membrane Modules

NOK CORPORATION

NOK's products meet a wide range of needs and markets with high quality and high performance

An excellent reputation in a wide range of fields from electronics to automotive to aerospace

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NOK's membrane modules cover a wide range of needs in applications such as household, industrial, public facilities and environmental

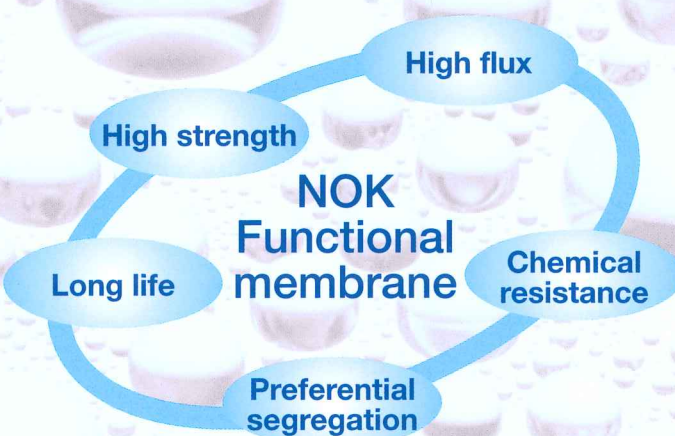
We have been offering more than 150 types of membrane modules for over 20 years. Our customer base is in the EU, the Americas, Japan and Asean countries.

A wide range of polymeric and carbon membrane materials are available



Water purification module

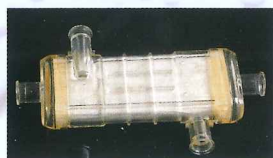
Industrial membrane modules



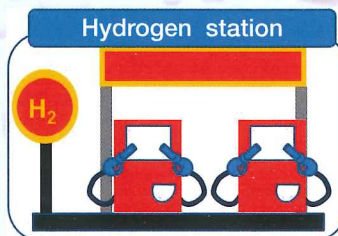
Advanced technological
development

Development of new technologies and materials towards the hydrogen economy

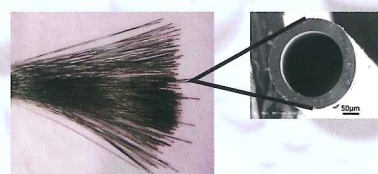
NOK participates in national and joint developments through academic institutions. Furthermore, we work to develop new technologies and materials such as gas separation membranes made of carbon, and humidifier membranes for fuel cell use in the hydrogen economy.



Humidifier membranes for fuel cells

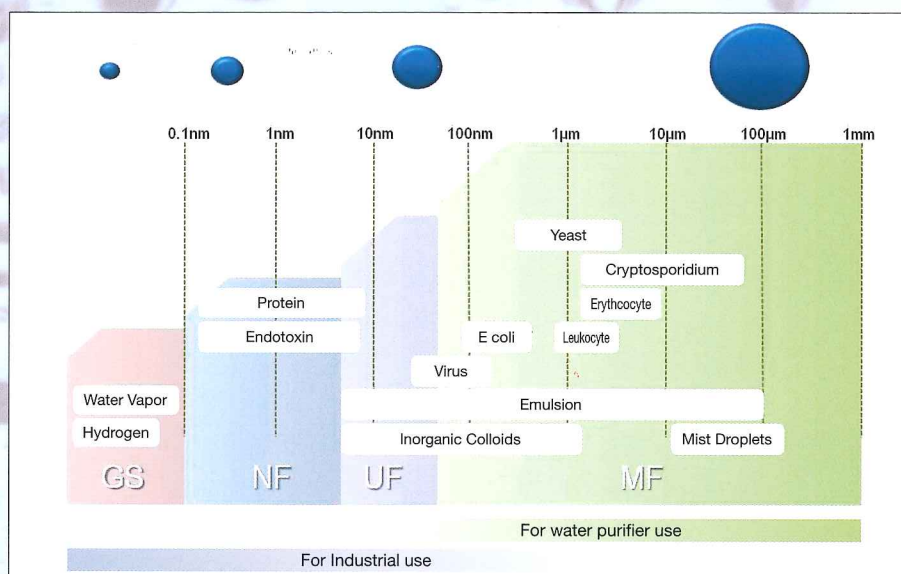


Gas separation carbon membrane for hydrogen station



Product Line-up of NOK membranes

Relative size of common materials and membranes



Industrial UF membrane modules

- Our hollow fibers have many variations of materials, pore size, and applications

Specification of NU-4500

| Filter System | | NU-4500 Series |
|------------------------------------|----------|---|
| Membrane | Material | PSU |
| | ID/OD | φ 0.9mm/φ 1.5mm |
| Max Membrane Pressure Differential | | 300 kPa (25°C) |
| Temperature Range | | 5~40°C |
| pH Range | | 2~11 |
| Molecular Weight Cutoff | | 150000 Da |
| Flow Rate of Module | | 7m³/h (25°C, 60kPa, Internal pressure) |
| Case Material | | U-PVC |
| External Module Dimensions | | 1,655 × φ 250mm |

Customized designs are available



Industrial membrane modules in actual use

polyvinylidene fluoride

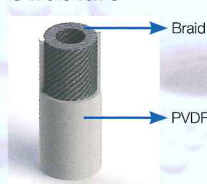
Braid-reinforced PVDF membrane. High strength for MBR and water treatment



NOK has developed a high-strength braid-reinforced PVDF membrane with excellent chemical resistance. This membrane is ideal for Membrane Bio Reactor (MBR) applications.



Structure



- Braid-reinforcement is integrated within the PVDF membrane.
- Nominal pore size of Braid-reinforced PVDF membrane is 0.2µm.
- Please contact us for customized pore sizes

Specification of braid PVDF membrane

| Specification of braid PVDF membrane | | NOK's PVDF Braid-Reinforced Membrane | Competitor's Membrane |
|--------------------------------------|------------------------|--------------------------------------|-----------------------|
| OD/ID (mm) | | φ 2.1 × φ 1.2 | φ 2.9 × φ 2.0 |
| mean pore size (µm) | | 0.2 | 0.09 |
| Fiber Tensile Strength (N) | | 400> | 240 |
| Water Permeability (ml/h/cm²) | | 88 | 55 |
| Properties | SDI (raw water 4.3) | 0.4 | 0.5 |
| | BOD5 (raw water 3.6) | >0.5 | >0.5 |
| | COD-Cr (raw water 187) | 6.1 | 7.2 |
| | SS (raw water 283) | >1 | >1 |

Membrane Modules Point-of-Use Water Filtration

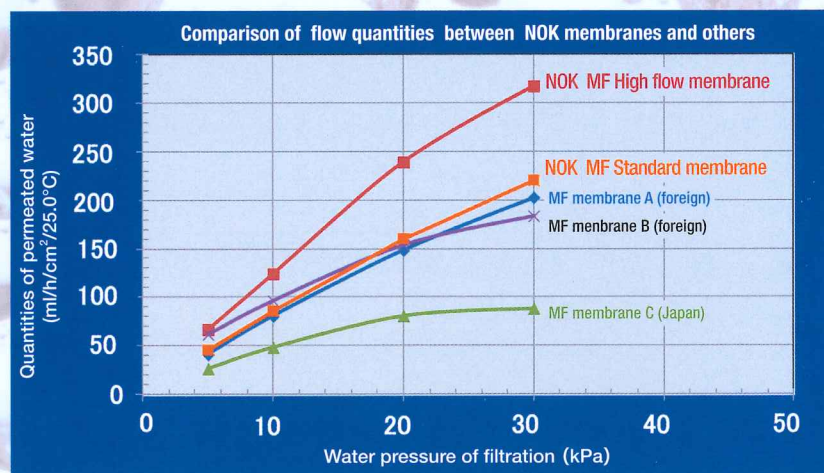
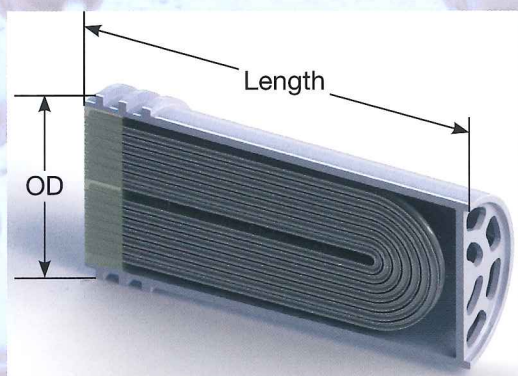
- The highest level of flow rate in household water purifiers in the membrane industry
- A wide variety of pore sizes are available in the MF and UF ranges
- By incorporating NOK's robust hydrophobic membranes, trapped air is allowed to vent and thereby resolves any air-lock concerns



NOK's standard water purifier membrane modules

| NOK Product No. | Length (mm) | Outer diameter (mm) | MF High Flow Membrane (LPM, 25°C @100kPa) | UF Membrane (LPM, 25°C @100kPa) |
|-----------------|-------------|---------------------|---|---------------------------------|
| TA1097 | 80 | 38 | 12 | 0.3 |
| TA13036 | 102 | 50 | 16.5 | 0.7 |
| TA13037 | 159 | 55 | 23 | 1.4 |
| TA13045 | 254 | 69 | 33 | 3.0 |

- NOK modules meet the JIS S 3201 test standards for household water purifiers
- NOK can accommodate other Agency standards such as NSF and ACS.
- We customize designs according to your specifications and requirements.



NOK membrane have highest flow rate for water purifier

NOK CORPORATION

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A selected standard design from this catalogue may not conform to the actual use of an application, due to unknown factors in the application.

Please confirm the actual compatibility of a selected product with your application before using it.