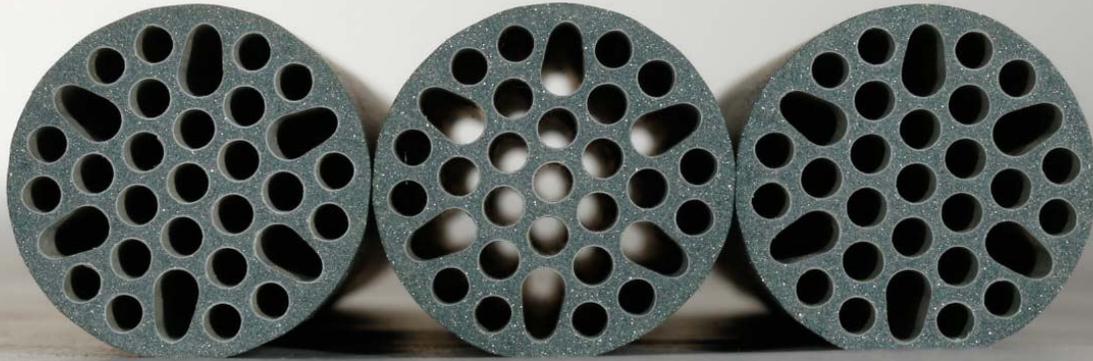


ADVANCED FILTRATION

SILICON CARBIDE ULTRAFILTRATION



WATER FILTRATION

INDUSTRY PROBLEMS

- INDUSTRIAL WASTE WATER ISSUES:
 - HIGH ORGANIC LOADS & OIL IN FEEDWATER
 - CHANGING FEED WATER CHEMISTRY
 - VARIABLE TURBIDITY & TEMPERATURE LEVELS
- CONVENTIONAL TREATMENT SOLUTIONS:
 - POLYMERIC MEMBRANES UNABLE TO HANDLE FEEDWATER CHARACTERISTICS
 - CHEMICAL TREATMENT IS EXPENSIVE AND GENERATES COSTLY WASTE BYPRODUCT
 - POOR FILTRATION OUTPUTS INCONSISTENT WATER QUALITY – COMPROMISES CUSTOMER ENVIRONMENTAL DISCHARGE
 - RESIDUAL, HIGH COST WASTE STREAMS

WATER FILTRATION

H2O SOLUTION

H2O SYSTEMS ADVANCED SILICON CARBIDE SYSTEMS SET A NEW FILTRATION STANDARD:

- CAPABLE OF HANDLING A WIDE FEED WATER VARIABLE TO GENERATE A CONSISTENT OUTPUT
- EXCELLENT OIL-WATER SEPARATION CHARACTERISTICS
- HIGH CHEMICAL & THERMAL TOLERANCE
- SMALL SYSTEM FOOTPRINT WITH LOW LIFECYCLE COST – LOW POWER & LONG-LIFE COMPONENTS
- HIGH RECOVERY RATE - SIGNIFICANT WASTE REDUCTION
- REDUCED DISPOSAL COSTS
- RANGE OF PORE SIZES AVAILABLE: 0.25µm, 0.60µm, 1.0µm & 3.0µm

RECYCLE, REMEDIATE, RECOVER

***DELIVERING NON-CHEMICAL, ENVIRONMENTALLY SUSTAINABLE SOLUTIONS
FOR HARD TO TREAT WATER APPLICATIONS***

WWW.H2OSYSTEMSGROUP.COM



ADVANCED FILTRATION

SILICON CARBIDE ULTRAFILTRATION

HIGH PERFORMANCE, LONG-LIFE FILTRATION

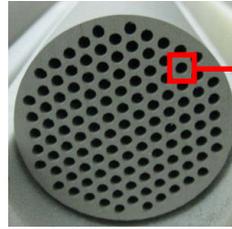
H₂O Silicon carbide (SiC) ceramic membrane filters resist extreme mechanical, thermal and chemical stresses, making it ideal for challenging industrial water and wastewater applications.

SiC is a water loving material and naturally repels oil. The membranes have unmatched performance in oil/water separation.

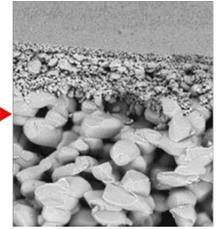
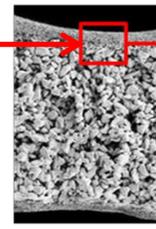
Feature	Benefit
Temperature resistant	High temperature stability and excellent thermal shock resistance Low thermal expansion, high thermal conductivity Can handle extreme feed water temperatures without any drop off in performance
Chemical resistant (pH0-14)	High corrosion resistance for harsh chemical cleaning Ability to treat acids and alkalis
High Porosity	High porosity structure (>40%) = high flux, compact system footprint, low power consumption
Low Organic Matter Adsorption	Low reversible and irreversible fouling Easy to backwash & clean-in-place to ensure continuous out-of-box performance
Hydrophillic material	Naturally repels oil - outstanding oil/water separation capabilities SiC material has low resistance to water
Stable & Consistant Performance	High and stable permeate flow rate High permeate recovery rate (>97%) Backwash & CIP efficiency - less backwash water losses, fast clean-in-place Handles water with high oil & solid loadings
Extreme Hardness	9-10 Mohs scale Robust and long-life material



Multiple membranes mounted inside a common housing to minimize footprint



Significant performance advantages compared to competing membranes

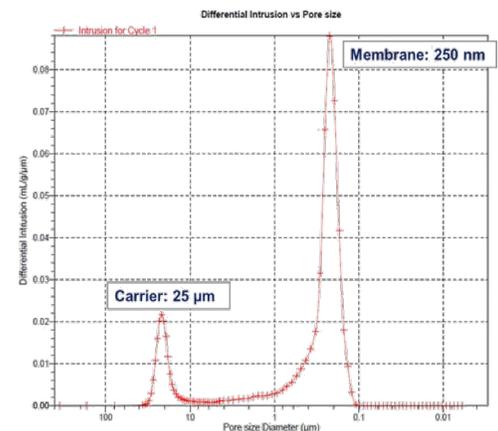


High porosity = high flux
High flow rate, low power & small footprint

The SiC membrane pore size range is **0.25µm**, **0.60µm** (ultrafiltration range) or as high as **1µm** and **3µm** (microfiltration).

The SiC carrier material is extruded to form monolithic honeycombs. The material exhibits a very high open porosity (>40%) with the carrier structure having larger pores, in the range of 5-10 micron. This guarantees an excellent permeability for the filtrate.

The high membrane porosity of the SiC material enables the system to operate at low pressure, which reduces system footprint and system costs (less pipes, valves, smaller pumps, low power consumption).



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ADVANCED FILTRATION

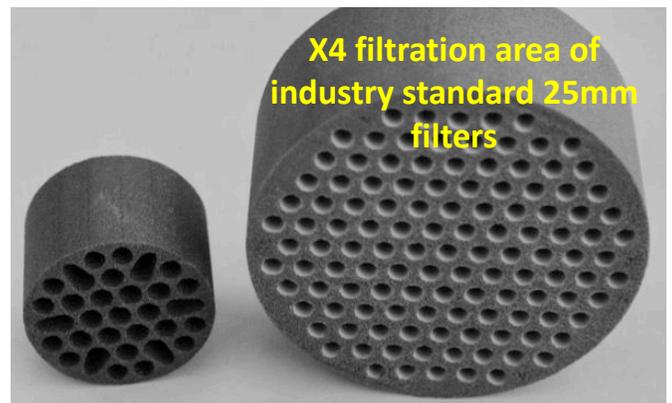
SILICON CARBIDE ULTRAFILTRATION

REDUCED FOOTPRINT, REDUCED CAPEX & OPEX

H2O designs a proprietary large diameter SiC membrane geometry, providing enhanced savings & advantages over competing ceramic membrane systems.

H2O's large diameter SiC membrane, provides x4 filtration area compared to industry standard elements. This significant increase in membrane filtration area creates several notable advantages:

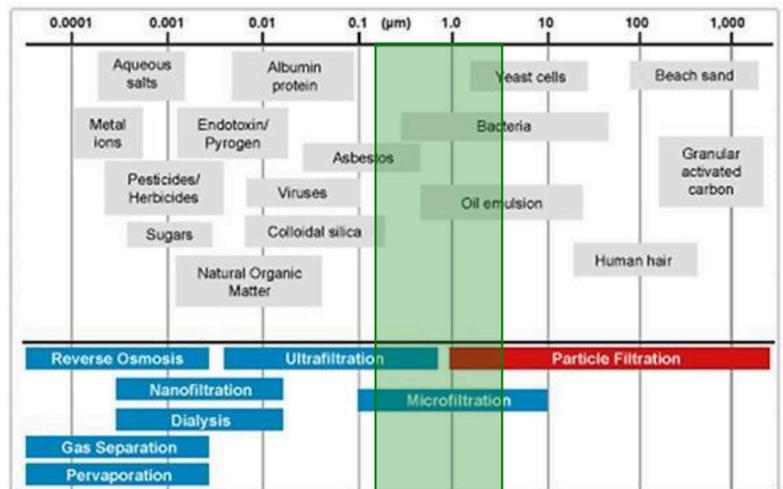
- Reduced footprint of ultrafiltration system
- Reduced number of multi-housings
- Reduced number of valves, plumbing, pumps, sensors & automation controls
- Reduced capital cost
- Reduced maintenance & operating cost.



GUARANTEED BARRIER

H2O SiC systems remove suspended solids, as well as oil & hydrocarbons, bacteria & viruses to output a high-pure water containing dissolved salts.

SiC membranes provide a guaranteed barrier to ensure environmental compliance & high-purity output quality.



 SiC UF 0.25µm, 0.60µm
SiC MF 1.0µm, 3.0µm

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