AQUABRANE
WATER TECHNOLOGIES PVT. LTD.

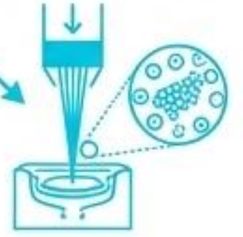
Redefining Ultrafiltration

Advanced Hollow Fiber Membrane Technology
engineered for extremely low transmembrane pressure.

Precision-Spun Phase Inversion Technology

CORE CONCEPT BLOCK

Manufactured using advanced dry-jet wet spinning phase inversion. This ensures high precision and a highly consistent structural integrity across every fiber.



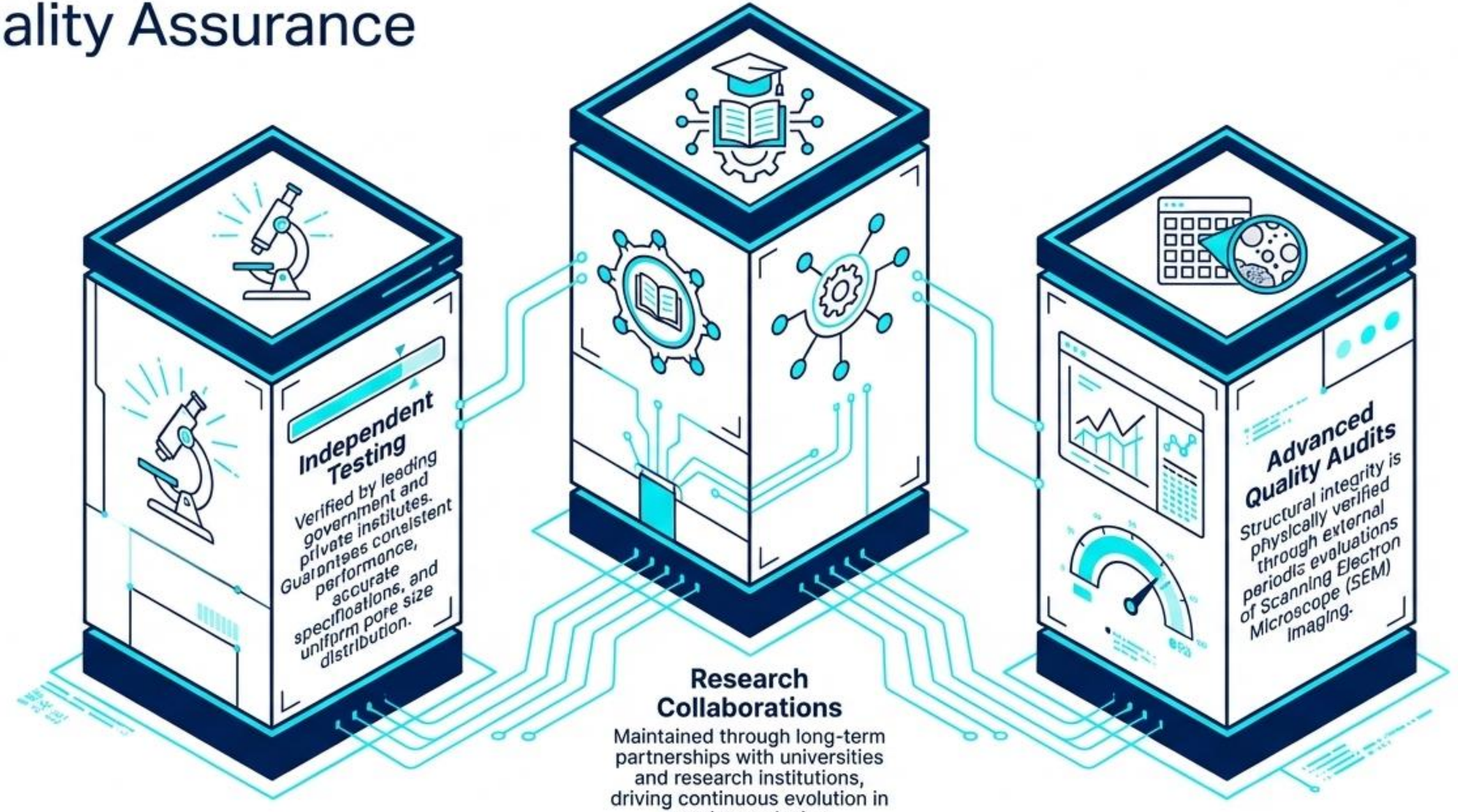
MATERIAL DETAIL

Extruded from premium-quality polymers (Modified PES) under the strict supervision of an expert scientific team.

THE PRIMARY ADVANTAGE:

The Out-to-In flow path is purposely designed to operate at extremely low Transmembrane Pressure (TMP), directly translating to **drastically reduced energy consumption** for the facility.

Rigorous Validation and Quality Assurance



Research Collaborations

Maintained through long-term partnerships with universities and research institutions, driving continuous evolution in membrane design.

The S-880 Ultrafiltration Series

60 m^2 Membrane Area

125 – 150 LMH (Clean water flux at 20°C)

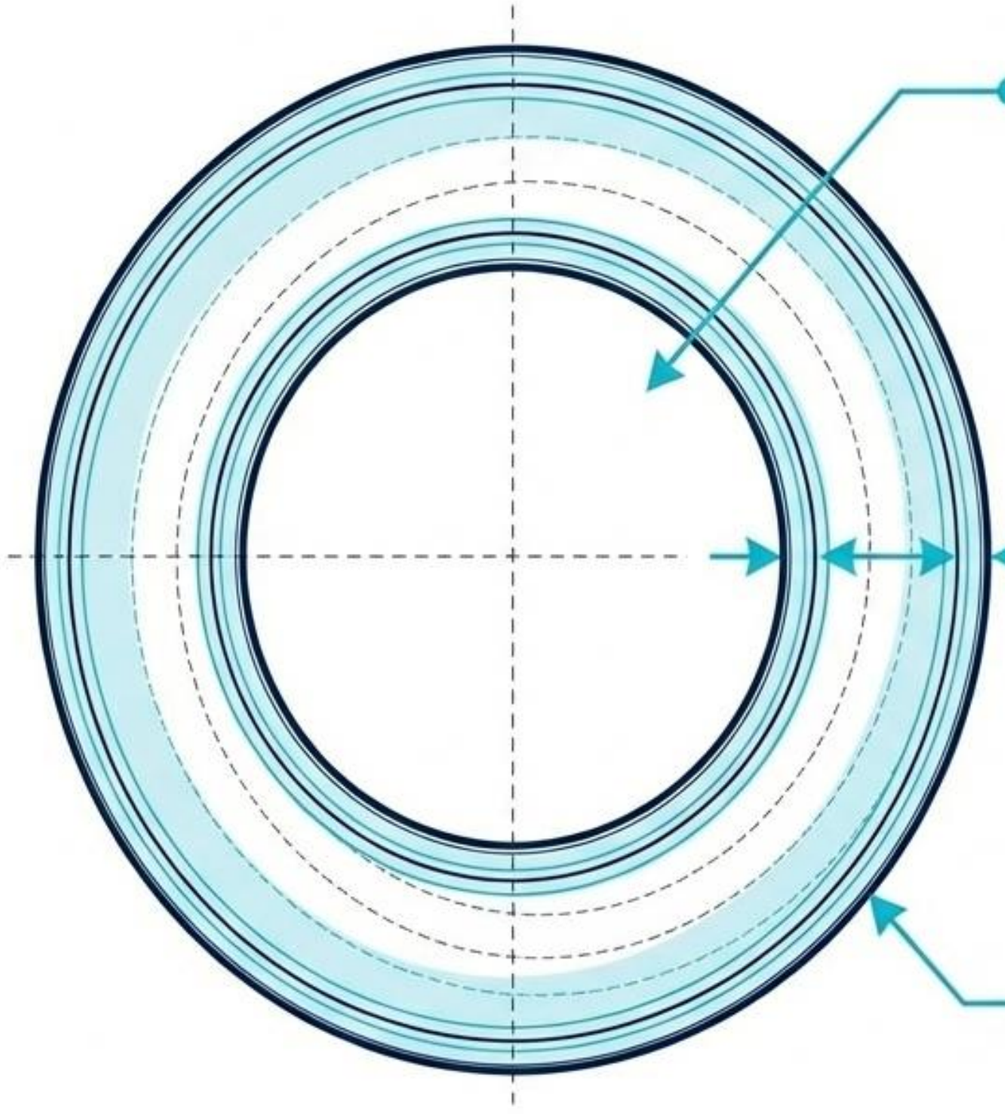
Out-to-In Flow Path
(Configurable for Dead end or Cross flow operating modes)

S-880 Variant Selection Matrix

	Non-Coated	Graphene Coated
Normal	Housing: UPVC Temp Range: 5°C to 45°C Max Oil & Grease: **<1 ppm**	Housing: UPVC Temp Range: 5°C to 45°C Max Oil & Grease: **25 ppm**
High Temperature (HT)	Housing: CPVC Temp Range: 5°C to **65°C** Max Oil & Grease: **<1 ppm**	Housing: CPVC Temp Range: 5°C to **65°C** Max Oil & Grease: **25 ppm**

Graphene Coating increases Oil & Grease tolerance by 25x. HT variants upgrade housing to CPVC to increase thermal tolerance by 20°C.

Microscopic Membrane Architecture



1.2 mm Fiber
Inner Diameter (ID)

0.4 mm Wall
Thickness

2.0 mm Fiber
Outer Diameter (OD)

Material Specifications

- **Core Material:** Modified PES (with optional Graphene Coating)
- **Surface Property:** Hydrophilic

Hardware Anatomy and Build Specifications

Glass-filled ABS End Caps

Standard 1.5 inch NPT Nozzle Size

Aquabrane Proprietary Potting Compound

Glass-filled ABS End Caps

UPVC or CPVC Housing (Variant Dependent)

Operational Weight

50 kg (Empty Dry Weight) / 60 kg (Water-Filled Operational Weight)

Continuous Operating Parameters Dashboard

Inlet Pressure

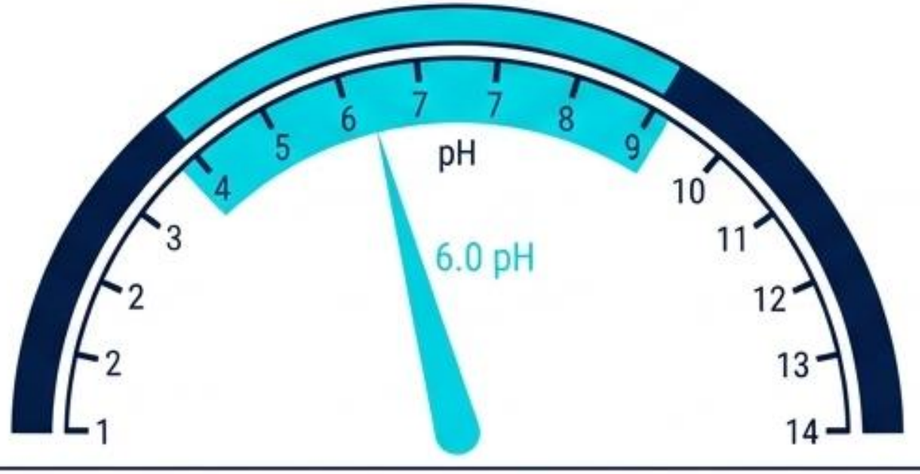
Optimal: 0.8 – 1 Bar | Absolute Maximum: 1.5 Bar

Transmembrane Pressure (TMP)

0.55 – 0.83 Bar (8 to 12 psi)

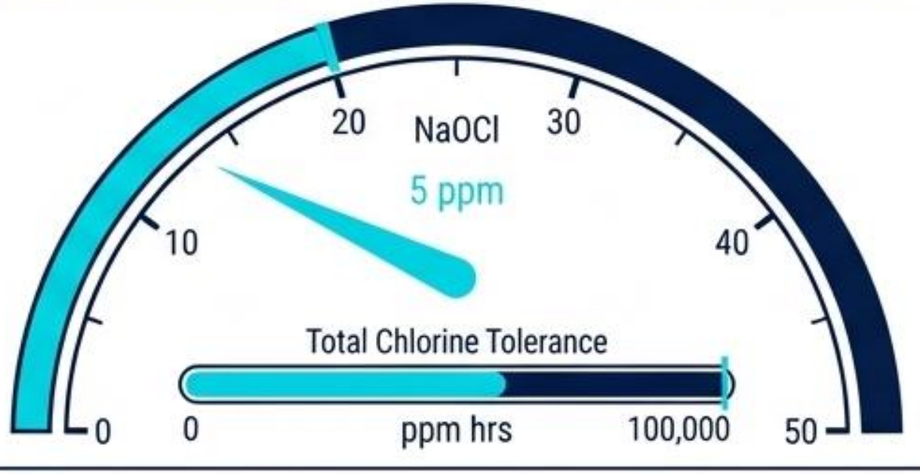
Continuous pH

Safe Operating Range: 3 to 9



Chemical Exposure

Maximum Continuous NaOCl: 20 ppm | Total Chlorine Tolerance Lifetime: 100,000 ppm hrs



Maximum Feed Water Thresholds

Maximum Total Suspended Solids (TSS): 100 mg/L

Maximum Feed Turbidity: 150 NTU

Absolute Temp Limits:
45°C (Normal Variants) / 65°C (HT Variants)

Note: Oil and Grease thresholds strictly dictate the requirement for Graphene Coated variants (see Variant Matrix).

Routine Maintenance Cycle: Backwash & Air Scour

Initiate every 20-60 mins OR at a 20% increase in TMP

Step 1: Air Scour

Pressure: 0.55 – 1 Bar (8-15 psi)

Volume: 10.5 Nm^3/hr

Duration: 30 seconds + Backwash time

Step 2: Chemical Backwash

Flux: 1.5x constant flux (or 4.5 M^3/hr)

Pressure: 1 – 1.4 Bar (14-20 psi)

Duration: 30-60 seconds with 20 ppm NaOCl

Step 3: Forward Flush

Duration: 30-45 seconds post-backwash (Alternatively: 60 seconds once every 6-12 hours)

Daily Enhanced Backwash (EBW) Protocol

Core Requirement: Must be carried out precisely once a day. Standard EBW requires 200 ppm NaOCl.

Max NaOCl during cleaning

1000 ppm (100 ppm of free Cl2)

Expanded pH Range for Cleaning

2 to 11

Contextual Note: Depending on specific feed water quality, supplementary backwashing with HCl & NaOH may be required.

AQUABRANE

Aquabrane Water Technologies Pvt. Ltd.

Engineered for extreme efficiency. Built for consistent reliability.