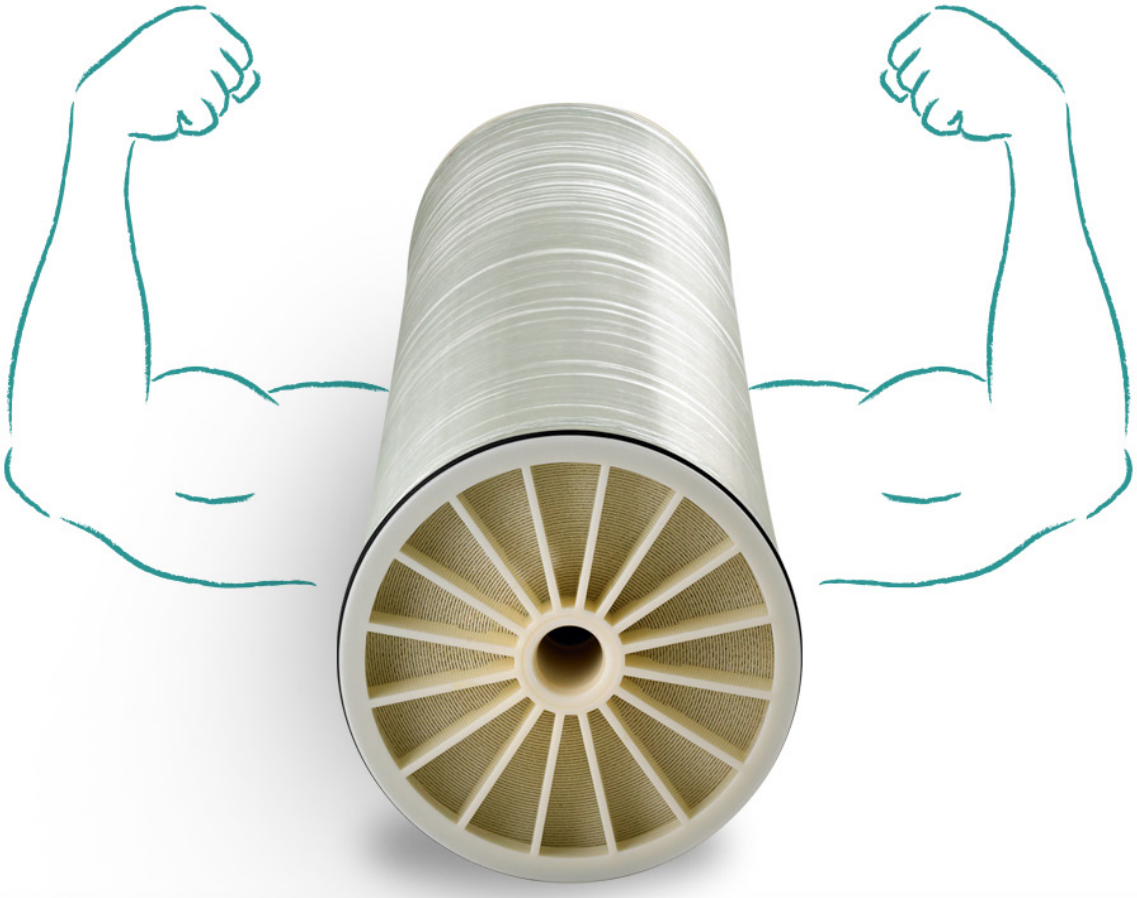
Water Solutions

DUPONT

FilmTec™ Fortilife™ Elements for Minimal Liquid Discharge (MLD)

Clean Less. Recover More. Waste Less.



Reduce cost of ZLD

Robust & Stable Performance

Maximize brine TDS for recovery and circularity

As global water scarcity intensifies, industries face growing pressure to manage water resources more efficiently and responsibly. This challenge is further amplified by increasingly stringent environmental regulations that impose tighter discharge limits. While conventional Zero Liquid Discharge (ZLD) system serves the purpose, membrane-based Minimal and Zero-Liquid Discharge (MLD/ZLD) technologies are rapidly gaining momentum, with industrial end users and system operators seeking reliable, cost optimized and high-performance water treatment solutions.

FilmTec™ Fortilife™ Elements for MLD

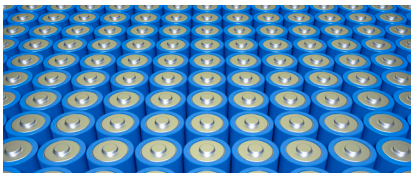
The FilmTec™ Fortilife™ product family offers solutions for industrial users to improve water efficiency by incorporating membrane and element design innovations that enable systems to clean less, recover more, and waste less. FilmTec™ Fortilife™ Reverse Osmosis elements can lower operational cost and carbon footprint by partially displacing conventional thermal treatment before crystallization step. As a part of MLD process, some end-users looking to recover resources (salts or valuable metals) from high concentrated brines can achieve their target at a cost-efficient way.

FilmTec™ Fortilife™ Element Approximate TDS Treatment Range (g/L)	Benefits
FilmTec™ Fortilife™ XC70 Element 15 – 70 g/L NaCl	• Improved productivity and stability for higher recovery operation • Fouling resistant membrane and module design for increased up-time and less frequent chemical cleanings
FilmTec™ Fortilife™ XC80 Element 15 – 80 g/L NaCl	• Reduced footprint with 440 ft^2 active area element • Module design suitable for high-scaling feed waters
FilmTec™ Fortilife™ XC120 Element 60 – 120 g/L NaCl	• Specially designed RO element to achieve higher concentrate TDS with high pressure operating condition up to 83bar
FilmTec™ Fortilife™ XC120UHP Element 60 – 120 g/L NaCl	• High quality permeate water suitable for reuse • Efficient system design with ultra-high-pressure operation up to 120 bar
FilmTec™ Fortilife™ XC160UHP Element 100 – 160 g/L NaCl	• Ultra-high-pressure RO element to achieve brine concentration up to 160 g/L NaCl and minimize liquid waste volume for thermal process
FilmTec™ Fortilife™ XC220 Element 120 – 220 g/L NaCl	• Significantly reducing water volume for final thermal treatment step, potentially bypassing evaporation process. • With efficient system design with other high-pressure FilmTec™ Fortilife™ XC series elements enabling simpler operation experience and equipment accessibility
FilmTec™ Fortilife™ XC-Max UHP Element 150 – 250 g/L NaCl	• Significantly reducing water volume for final thermal treatment step, potentially bypassing evaporation process. • With efficient system design with other ultra-high-pressure FilmTec™ Fortilife™ XC series elements, helps minimize permeate recycling and physical footprint of the system
FilmTec™ Fortilife™ NF1000 Element FilmTec™ Fortilife™ NF1000HP Element 0 – 210 g/L Na_2SO_4	• Selective membrane with high monovalent ion passage • High permeability for low energy operation • Suitable for brine reuse or recycling applications • HP element designed for operation > 400 psi (28 bar)

Key Markets and Common Challenging Water Applications

Chemical & Petrochemical

Lithium-ion battery manufacturing

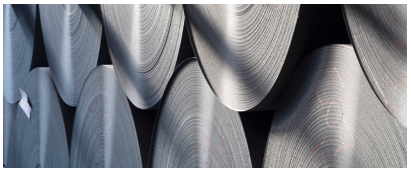


Steel & Metal

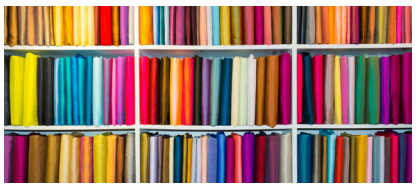
Resource Recovery

Power generation

Pulp & Paper



Textiles



Photos are courtesy of Getty Images and iStock photography.

Have a question?

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