

AK H Series

FACT SHEET

High performance, high rejection, and ultra-low energy RO elements

The AK H Series of thin-film reverse osmosis (RO) elements provides all of the features expected of high performance low energy elements including very high rejection, low operating pressure, and longer element life-times. These AK H Series brackish water elements also offer very high rejection of uncharged and lightly charged species including silica and many micropollutants. AK H Series elements combine Veolia chemistry and manufacturing advancements to deliver differentiated performance that is ideal for any brackish water salinity with applications such as drinking water treatment for removal of emerging contaminants and second-pass RO systems in front of further polishing by ion exchange or electro-deionization. AK H Series elements are a reliable source of energy savings with minimal compromise in contaminant removal.

All AK H Series elements have NSF/ANSI/CAN 61 certification and 8-inch diameter elements also have halal certification.

Table 1: Element Specification

Membrane		Thin-film membrane (TFM), polyamide		
Model	Average permeate flow gpd (m ³ /day) ^(1,2)	Typical NaCl rejection ^(1,2)	Minimum NaCl rejection ^(1,2)	
AK-90 H	2,250 (8.5)	99.65%	99.40%	
AK-400 H	11,000 (41.6)	99.65%	99.50%	
AK-440 H	12,000 (45.4)	99.65%	99.50%	

(1) Average salt rejection after 24 hours of operation. Individual flow rate may vary ±20%..

(2) Testing conditions: 500ppm NaCl solution at 115 psi (793 kPa) operating pressure, 77°F (25°C), pH 7 and 15% recovery.

Table 2: Element Properties (3)

Model	Active area ft ² (m ²)	Outer wrap	Feed Spacer (mil)	Part number
AK-90 H	90 (8.3)	Fiberglass	31	3194886
AK-400 H	400 (37.2)	Fiberglass	34	3150326
AK-440 H	440 (40.9)	Fiberglass	28	3150327

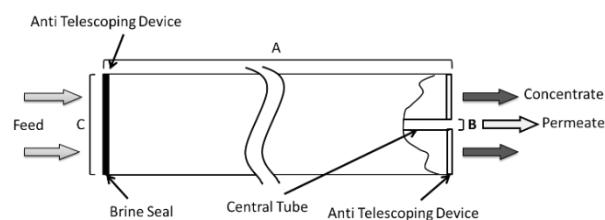


Figure 1: Element Dimensions Diagram – Female

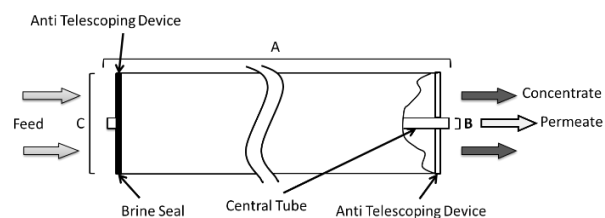


Figure 2: Element Dimensions Diagram – Male

Table 3: Dimensions and Weights (3)

Model	Type	Dimensions, inches (cm)			Boxed weight lbs (kg)
		A	B	C	
AK-90 H	Male	40.0 (101.6)	0.75 (1.9)	3.9 (9.9)	9 (4)
AK-400 H	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	40 (18)
AK-440 H	Female	40.0 (101.6)	1.125 (2.86)	7.9 (20.1)	42 (19)

Table 4: Operating and CIP Parameters (3)

Typical Operating Pressure	100 psi (689 kPa)
Typical Operating Flux	10-20 GFD (15-35 LMH)
Maximum Operating Pressure	400 psi (2,756 kPa)
Maximum Temperature	Continuous operation: 122°F (50°C) Clean-In-Place (CIP): 122°F (50°C)
pH Range	Optimum rejection: 7.0-7.5 Continuous operation: 2.0-11.0 Clean-In-Place (CIP): 1.0-12.0 (4)
Maximum Pressure Drop	Over an element: 15 psi (103 kPa) Per housing: 50 psi (345 kPa)
Chlorine Tolerance	1,000+ ppm-hours, dechlorination recommended
Feedwater²	NTU < 1 SDI ₁₅ < 5

(3) Element properties and parameters are indicative numbers. Specific values by element may vary within normal element manufacturing tolerances.

(4) Please refer to Cleaning Guidelines Technical Bulletin TB1194.

Additional Information

- As with any product, use of the products mentioned in this publication in a given application must be tested (including field testing, etc.) by the user in advance to determine suitability.
- Treat RO elements with care; do not drop the element.
- Each RO element is wet tested. The 8-inch diameter elements are preserved in a 1% weight sodium bi-sulfite solution and vacuum packed in oxygen barrier bags. The 4-inch diameter elements are packaged with oxygen scavenger packets in oxygen barrier bags.
- During storage, avoid freezing and direct sunlight. The temperature should be below 35°C (95°F).

After Installation

- Keep the RO elements wet and use a compatible preservative for storage duration longer than 7 days.
- During the initial start-up, discharge the first permeate to drain for 30 minutes.
- Permeate back pressure should not exceed feed pressure at any time.
- The RO elements shall be maintained in a clean condition, unfouled by particulate matter or precipitates or biological growth.
- Consider cleaning, if the pressure drop increases by 20% or water permeability decreases by 10%. Use only chemicals which are compatible with the membrane.