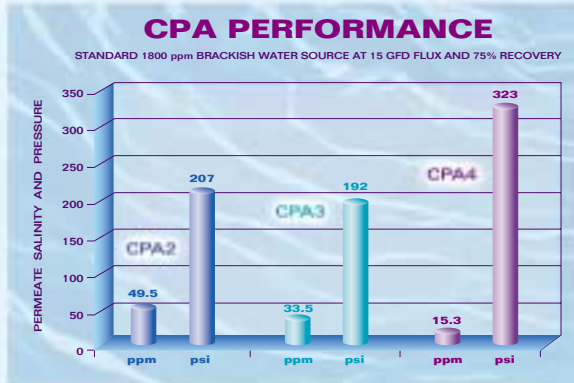


CPA

High rejection membranes



High performance for the highest quality water

When high performance counts, CPA (Composite Polyamide) membranes from Hydranautics set the standard for RO membrane elements. CPA membranes ensure reduced maintenance and more efficient power plant operation, while significantly reducing downstream ion exchange costs. Over a half-billion gallons per day of pure water are produced by CPA2 for the world's industries, and for municipal supplies around the globe.

CPA3 and CPA4 offer even higher salt rejection rates. Semiconductor manufacturers rely on Hydranautics to provide the ultrapure water needed for production of sensitive semiconductor chips. And because of their high TOC, silica and hardness rejection, CPA3 and CPA4 are ideal for producing low-scaling boiler make-up water for power generation applications.

CPA membranes provide the highest salt rejection rates available - every element on every order for every customer.

- **CPA2** - The workhorse and industry standard, CPA2 delivers consistently high performance, day in and day out

- **CPA2-HR** - The high surface area, high rejection membrane that saves time and money by significantly reducing operating costs

- **CPA3** - The element with the best combination of productivity and salt rejection available

- **CPA4** - For applications where the highest salt rejection is required



HYDRANAUTICS

A Nitto Denko Company
www.membranes.com

Test Conditions

The stated performance is initial (data taken after 30 minutes of operation), based on the following conditions:

NaCl Solution, PPM	.....1500
Applied Pressure, psig (MPa)	.....225 psi (1.55)
Operating Temperature, °F (°C)	.....77° (25°)
Permeate Recovery	.....15%
pH Range	.....6.5 - 7.0

Application Data

Maximum Applied Pressure, psig (MPa)	..... 600 (4.14)
Maximum Feed Flow, GPM (m ³ /h)	.. 4040-16(3.6), 8-inch -75(17.0)
Maximum Operating Temperature, °F (°C)	.....113° (45°)
Feedwater pH Range*	.....3.0 - 10.0
Maximum Feedwater Turbidity, NTU	.....1.0
Maximum Feedwater SDI (15 mins)	.....5.0
Maximum Chlorine Concentration, PPM	.....<0.1
Maximum Ratio of Concentrate to Permeate Flow for Any Element	..5:1
Maximum Pressure Drop for Each Element, psig	.....10

*See technical literature for extended pH tolerance



Element Performance

Element Type	Min. Salt Rej., %	Nom. Salt Rej., %	Permeate Flow, GPD	(m ³ /d)
CPA2	.....99.2	.....99.5	.....10,000	.....(37.9)
CPA2-4040	.....99.2	.....99.5	.....2,250	.....(8.5)
CPA2-HR	.....99.6	.....99.7	.....10,000	.....(37.8)
CPA3	.....99.6	.....99.7	.....11,000	.....(41.6)
CPA4	.....99.5	.....99.7	.....6,000	.....(22.7)

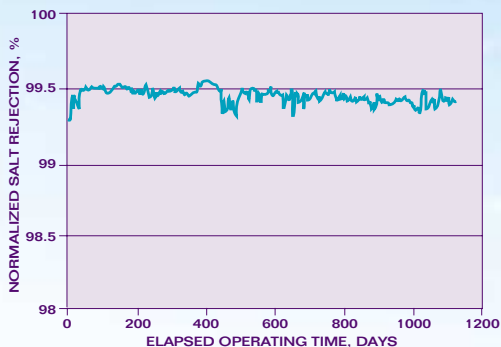


CPA2 installation, 2 MGD, in Oceanside, California

Selected Project References for Hydranautics' CPA2 Membrane Elements

The CPA membrane is installed in a variety of municipal, semiconductor and boiler feed applications worldwide to include end users such as: Hewlett Packard, Fujitsu Microelectronics, Samsung, Motorola, City of Brighton Colorado, Sasol South Africa, and Denia Spain.

TYPICAL CPA2 PERFORMANCE



Typical CPA2 systems show stable performance over element lifetime. Membranes are durable, cleanable and reliable over a wide range of operating and feedwater conditions.



Hydranautics Corporate: 401 Jones Road, Oceanside, CA 92054

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