RESINTECH INC
INNOVATIONS IN ION EXCHANGE

POWERMAX

PXA40 OH - UNIFORM PARTICLE SIZE

Type 1 Macroporous Anion Resin - OH Form

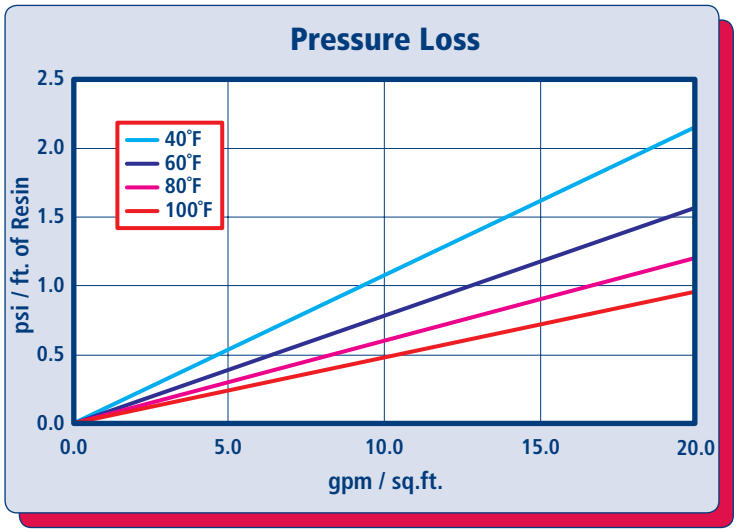
PowerMax PXA40 OH is manufactured specifically for the power industry by ResinTech, Inc. as a narrowly graded hydroxide form type 1 macroporous strong base anion resin. *PXA40 OH* is a uniform particle size resin which results in increased void space and lower coefficient of drag. *PowerMax PXA40 OH* is intended for use where resin uniformity is an important attribute to help reduce pressure loss.

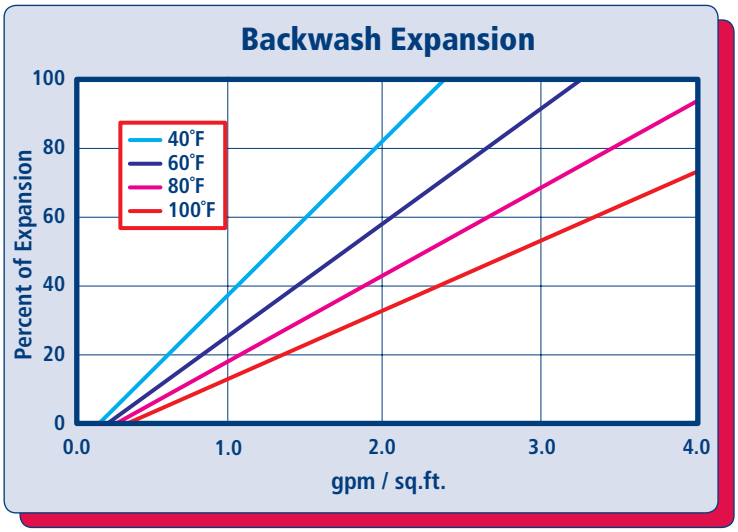
PowerMax PXA40 OH is available in the chloride form when ordered as *PowerMax PXA40 Cl*.

FEATURES & BENEFITS

- **SUPERIOR PHYSICAL STABILITY**
  Close to perfect sphericity with minimal cracked or broken beads and high crush strength
- **RAPID EXCHANGE KINETICS**
  High surface area and homogeneous functionalization results in rapid exchange kinetics and high mass transfer coefficients
- **HIGH THROUGHPUT CAPACITY**
  High uniformity and surface area coupled with rapid kinetics provides high throughput capacities
- **LOW RINSE REQUIREMENT**
  Uniform bead diameter plus careful manufacturing results in very short rinse up time and low rinse volume
- **HIGH REGENERATION EFFICIENCY**
  Rapid kinetics and reduced bead size results in high regeneration efficiency and consistently good regeneration profiles

HYDRAULIC PROPERTIES





PRESSURE LOSS

The graph above shows the expected pressure loss of *PXA40 OH* per foot of bed depth as a function of flow rate at various temperatures.

BACKWASH

The graph above shows the expansion characteristics of *PXA40 OH* as a function of flow rate at various temperatures.

160 Cooper Road • West Berlin, NJ 08091 USA • p: 856.768.9600 • f: 856.768.9601 • e: ixresin@resintech.com • w: resintech.com

RESINTECH® PXA40 OH

PHYSICAL PROPERTIES

Polymer Structure	Styrene/DVB
Polymer Type	Macroporous
Functional Group	Trimethylamine
Physical Form	Spherical beads
Ionic Form as shipped	Hydroxide
Total Capacity	>1.1 meq/mL
Water Retention	56 to 60 percent
Approximate Shipping Weight	42 lbs./cu.ft.
Swelling, Cl to OH	18 to 25 percent
Mean Particle Diameter	0.6 (+/- 0.1 mm)
Maximum Fines Content (<50 mesh)	0.5 percent
Minimum Sphericity	98 percent
Uniformity Coefficient	1.15 approx.
Resin Color	Tan to brown

Note: Physical properties can be certified on a per lot basis, available upon request

SUGGESTED OPERATING CONDITIONS

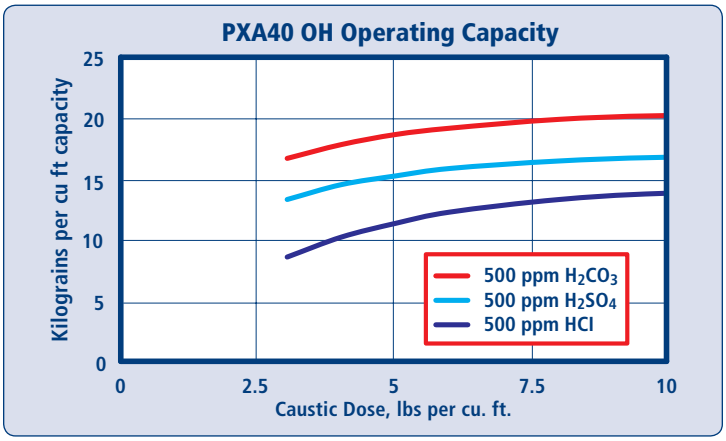
Maximum continuous temperature	170˚F
Minimum bed depth	24 inches
Backwash expansion	25 to 50 percent
Maximum pressure loss	20 psi
Operating pH range	0 to 14 SU
Regenerant Concentration	
Hydroxide cycle	2 to 6 percent NaOH
Salt cycle	2 to 10 percent NaCl
Regenerant level	4 to 10 lbs./cu.ft.
Regenerant flow rate	0.25 to 1.0 gpm/cu.ft.
Regenerant contact time	>40 minutes
Displacement flow rate	Same as dilution water
Displacement volume	10 to 15 gallons/cu.ft.
Rinse flow rate	Same as service flow
Rinse volume	35 to 60 gallons/cu.ft.
Service flow rate	1 to 10 gpm/cu.ft.

Note: These guidelines describe average low risk operating conditions. They are not intended to be absolute minimums or maximums.
For operation outside these guidelines, contact ResinTech Technical Support

PACKED BEDS

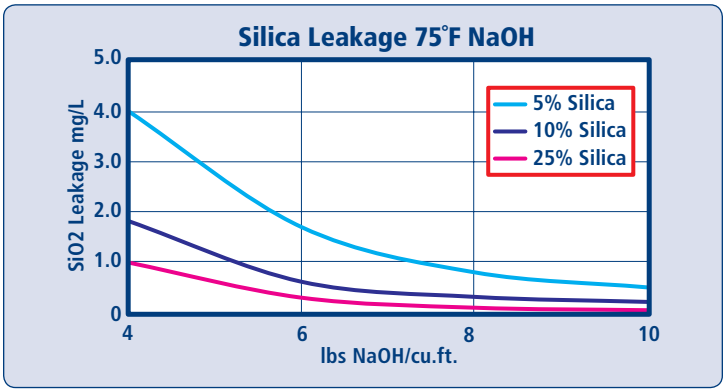
POWERMAX PXA40 OH has a very narrow particle size range. The uniformity allows a slightly smaller bead size to be used which results in faster exchange of ions, more efficient regeneration and lower leakage. *PXA40 OH* is ideal for packed beds and other types of counter-current ion exchangers where consistent operation is important cycle after cycle. Higher void space and minimal fine mesh beads provides low pressure loss and helps prevents channeling and other distribution problems. Packed beds typically have limited freeboard (only a few inches with the resin in the swollen form).

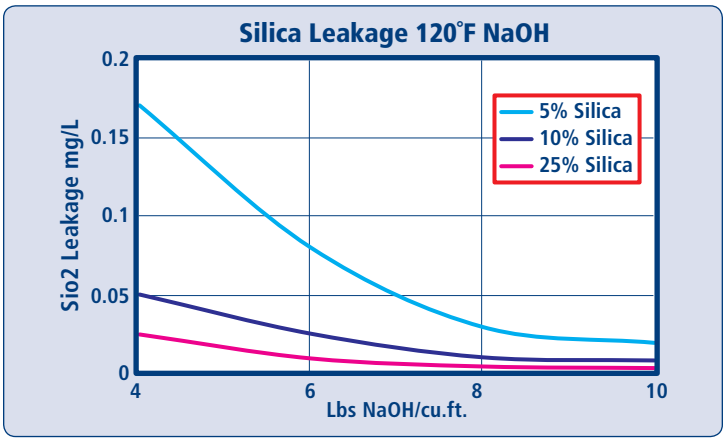
OPERATING CAPACITY



Capacity based on 500 ppm of stated acid (as $CaCO_3$). Capacity based on 36 inch deep bed depth, flow rate of 2 to 4 gpm per cu. ft. and greater than 40 minute caustic injection time. No engineering downgrade has been applied.

SILICA LEAKAGE





The above charts illustrate the effect of caustic dose and temperature on silica leakage for co flow regenerated strong base anion exchangers. The data is based on inlet TDS between 100 and 500 ppm as CaCO3 and does not include any engineering factors. For leakage predictions at other doses and for counter currently regenerated systems please contact ResinTech Technical Support

RESINTECH INC.
INNOVATIONS IN ION EXCHANGE

East Coast - West Berlin, NJ p:856.768.9600 • Midwest - Chicago, IL p:708.777.1167 • West Coast - Los Angeles, CA p:323.262.1600