



PC003BK

Cation Exchange Resin
Gel Strong Acid

High Quality & Cost-Effective

Product Description

Pure PC003BK is a high capacity premium grade bead form, gel type, polystyrene sulphonate cation exchange resin and specially produced in dark brown to black color. It can be supplied in the sodium or hydrogen form. It is intended for use in all water softening, dealkalization, deionization and chemical processing applications, such as the following:

- 1.Pure PC003BK** in H form (PC003BKH), can be used in multiple and mixed bed demineralizers with strong base anion exchangers such as Pure PA101, PA102 and PA103 in OH form.
- 2.Pure PC003BK** is well suited for industrial, commercial or residential softening applications because of its high capacity and good physical stability.

Typical Physical & Chemical Characteristics

Polymer Matrix Structure	Polystyrene crosslinked with DVB
Functional Group	R-(SO ₃)-M ⁺
Ionic Form, as shipped	Na ⁺
Physical Form And Appearance	Clear Spherical Beads
Sphericity	95% min.
Screen Size Range --- U.S. Standard Screen	16-50 mesh, wet
Particle Size Range	0.3-1.25mm
Uniformity Coefficient	1.6 max.
Water Retention, Na ⁺ form	43-48%
Swelling Na ⁺ → H ⁺ Ca ²⁺ → Na ⁺	10% max. 8% max.
Shipping Weight, Na ⁺ form	780-880 g/l (51 lbs/cu.ft, approx.)
Total Exchange Capacity, Na ⁺ form	2.0 eq/l min.
pH Range	0-14

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Suggested Operating Conditions

Maximum Temperature

Na ⁺ form	120°C (248°F) max.
H ⁺ form	100°C (212°F) max.

Minimum Bed Depth	0.6 m (24 inches)
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Backwash Expansion	50-75% bed expansion
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Regeneration

Regenerant Concentration	8-20% NaCl or saturated salt water
Flow Rate	2 to 7 BV/h (0.25 to 0.90 gpm/cu.ft)
Contact Time	At least 30 Minutes

Displacement Rinse Rate	Same as Regenerant Flow Rate
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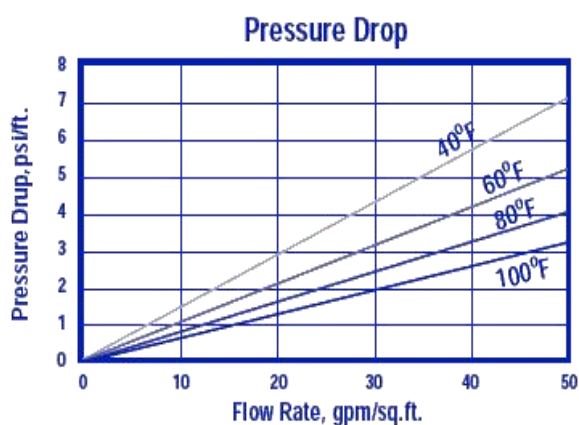
Displacement Rinse Volume	10-15 gallons/cu.ft
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Fast Rinse Rate	8-40 BV/h (1.0-5.0 gpm/cu.ft)
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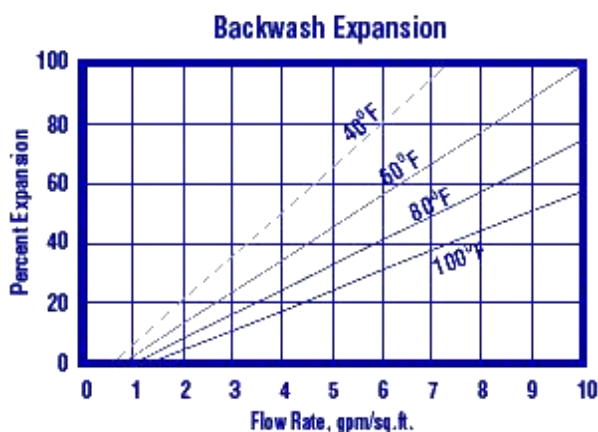
Fast Rinse Volume	3-10 BV (24-45 gal/ft ³)
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Service Flow Rate	8-40 BV/h (1.0-5.0 gpm/cu.ft)
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Hydraulic Properties



Pressure Drop: The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate at various temperatures.



Backwash: After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of PC003BK in Na⁺ form.

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