

GC-003BK

Gel Strong Acid Cation Exchange Resin

Product Description & Applications

G-ion GC-003BK is a high capacity premium grade bead form, gel type, polystyrene sulphonate cation exchange resin and specially produced 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. G-ion GC-003BK in H form (GC-003BK), can be used in multiple and mixed bed demineralizers with strong base anion exchangers such as G-ion GC101, GC102 and GC103 in OH form.
2. G-ion GC-003BK is well suited for industrial, commercial or residential softening applications because of its high capacity and good physical stability.

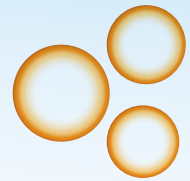


Typical Physical & Chemical Characteristics

Polymer Matrix Structure	Polystyrene crosslinked with 8% DVB
Functional Group	R-(SO ₃)-M ⁺
Ionic Form, as shipped	Na ⁺
Physical Form And Appearance	Clear Spherical Beads
Puerility	95% min.
Screen Size Range-U.S. Standard Screen	16-50 mesh, wet
Particle Size Range	0.315-1.25mm
Uniformity Coefficient	1.6 max.
Water Retention, Na ⁺ form	43-48%
Swelling Na ⁺ H ⁺ → Ca ²⁺ → Na ⁺	10% max. 5% 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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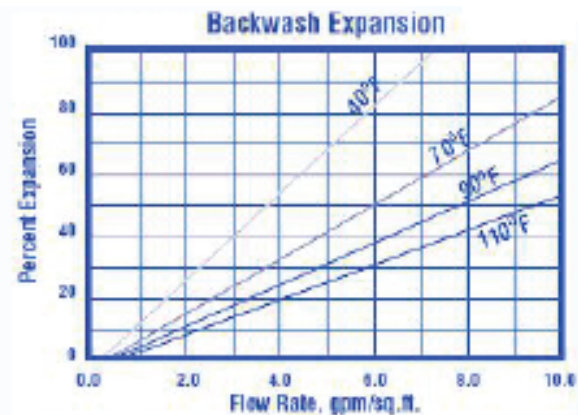
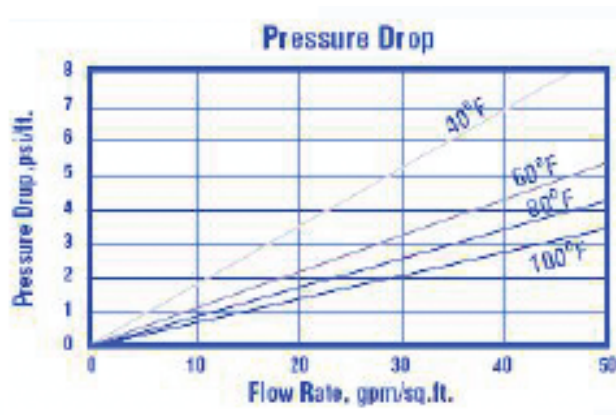
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Suggested operating conditions

Maximum Temperature	Na ⁺ form	120°C (248°F) max.
	H ⁺ form	100°C (212°F) max.
Minimum Bed Depth		0.6 m (24 inches)
Backwash Rate		25-50% Bed Expansion
Regeneration	Sodium Cycle	8-20% NaCl
	Hydrogen Cycle	10% HCl, 2-8% H ₂ SO ₄
	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
Displacement Rinse Volume		10 -15 gallons/cu.ft
Fast Rinse Rate		Same as Service Flow Rate
Fast Rinse Volume		35-60 gallons/cu.ft
Service Flow Rate		4-8 BV/h (1.0-5.0 gpm/cu.ft)

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. That will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of Pure G-ion GC-003BK in the sodium form.