EPOCHEMMIE CO., LTD

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DATA SHEET

Commodity: Gel Strong Acid Cation Exchange Resin **Type**: **C003**

Application: **C003** is a high capacity premium grade bead form, conventional gel polystyrene sulphonate cation exchange resin 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. **C003** in H form (**C003H**), can be used in multiple and mixed bed demineralizers with strong base anion exchangers such as A101, A102 and A103 in OH form.
2. **C003** is well suited for industrial, commercial or residential softening applications because of its high capacity and good physical stability.

Product Description:

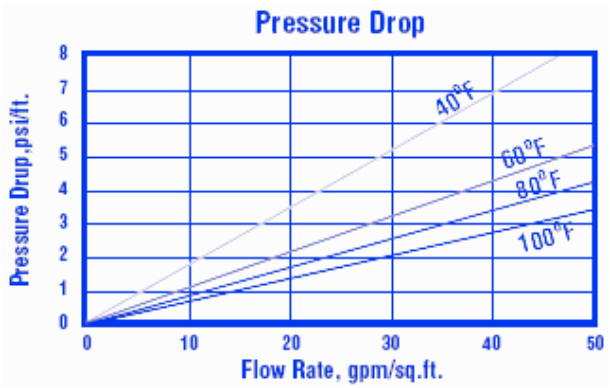
Typical Physical &Chemical Characteristics

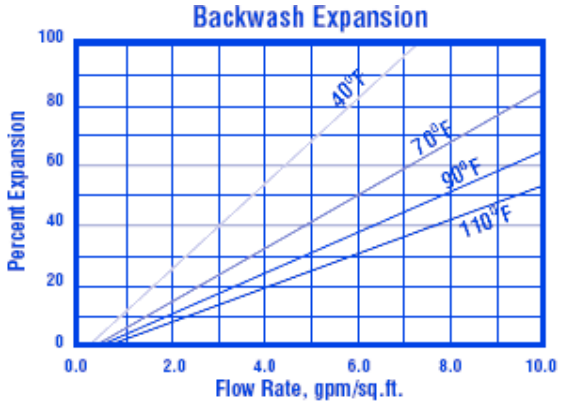
Polymer Matrix Structure	Polystyrene crosslinked with 8% DVB
Functional Group	$R\text{-}(SO_3)^-M^+$
Ionic Form, as shipped	Na^+ / H^+
Physical Form And Appearance	Clear Spherical Beads
Puerility	95% min.
Screen Size Range --- U.S. Standard Screen	16-50 mesh, wet
Particle Size Range	+1.2 mm < 5%, -0.3 mm < 1%
Uniformity Coefficient	1.6 max.
Water Retention, Na^+ form	43-48%
H^+ form	50-56%
Swelling $Na^+ \rightarrow H^+$	10% max.
$Ca^{2+} \rightarrow Na^+$	5% max.
Shipping Weight, Na^+ form	780-880 g/l (51 lbs/cu.ft, approx.)
H^+ form	770-870 g/l (50 lbs/cu.ft, approx.)
Total Exchange Capacity, Na^+ form	2.0 eq/l min.
H^+ form	1.9 eq/l min.
pH Range	0-14

Suggested Operating Conditions

Maximum Temperature	
Na^+ form	150ºC (300ºF) max.
H^+ form	100ºC (212ºF) 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_2SO_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 C003 in the sodium form.