



# C-100x10

## PRODUCT DESCRIPTION

**PuroLite C-100x10** is a gel type polystyrenic strong acid cation exchange resin that can be used either in water softening (where high chlorine levels are prevalent), in mixed bed demineralization (for better separation due to the higher density than the standard resin, C-100), in dealkalization, or in condensate polishing (where a more rugged physical structure is needed). C-100x10 is crosslinked with styrene and divinylbenzene polymers and classified as a 10% crosslinked resin. PuroLite C-100x10 has outstanding resistance to bead fracture from attrition or osmotic shock and offers a minimum of pressure drop across the bed. C-100x10 has an average whole clear bead count of 95% minimum with a bead strength averaging over 300 grams.

C-100x10 can be regenerated with sulfuric acid, hydrochloric acid or nitric acid to operate in the hydrogen form and with sodium chloride (salt-brine) to operate in the sodium form.

## TYPICAL PHYSICAL AND CHEMICAL PROPERTIES

Polymer Matrix Structure	Gelular, styrene/divinylbenzene
Appearance	Hard spherical beads
Functional Group	R-SO <sub>3</sub> <sup>-</sup>
Ionic form (as shipped)	Na <sup>+</sup> or H <sup>+</sup>
Whole Clear Beads	95% minimum
Moisture Holding Capacity	40 - 43%
Swelling (Na <sup>+</sup> → H <sup>+</sup> )	5%
Shipping Weight	865 gm/liter (54 lbs/ft <sup>3</sup> )
Total Exchange Capacity	2.2 eq/l minimum 5.1 eq/l minimum
Screen Sizing	- 0.3 <2%, + 1.0mm <2% (+16 mesh <2%, - 40 mesh <2%)
pH limitations	None
Chemical Resistance	Insoluble in all common solvents
Maximum Operating Temperature	300° F (150°C)
DVB content	10%

<b>STANDARD OPERATING CONDITIONS</b>				
<b>CO-FLOW DEMINERALIZATION</b>				
<b>OPERATION</b>	<b>RATE</b>	<b>SOLUTION</b>	<b>MINUTES</b>	<b>AMOUNT</b>
Service	1 – 5 gpm/ft <sup>3</sup>	Influent Water		
Backwash	See Fig. 1	Influent Water	5 - 20	10 – 25 gals/ft <sup>3</sup>
Regeneration	0.2 – 0.8 gpm/ft <sup>3</sup>	0.5 – 5% H <sub>2</sub> SO <sub>4</sub> 4 – 10% HCl	30	4 – 10 lbs/ft <sup>3</sup>
Rinse (slow)	0.2 – 0.8 gpm/ft <sup>3</sup>	Decationized	60 approx.	20 gals/ft <sup>3</sup>
Rinse (fast)	1 – 5 gpm/ft <sup>3</sup>	Decationized	60approx.	30 gals/ft <sup>3</sup>
Backwash Expansion	50 – 75%			
Design Rising Space	75%			

**CHEMICAL STABILITY:**

Purolite C-100x10 is insoluble in acids, alkali and all common solvents. However, exposure to free chlorine and other strong oxidizing agents over a long period of time will systematically decrosslink the resin.

Purolite C-100x10 offers better resistance to oxidation than C-100 though oxidation continues to take place no matter what the crosslinking of the resin. Exposure to oxidants may also come from the regenerants used.

**BACKWASHING:**

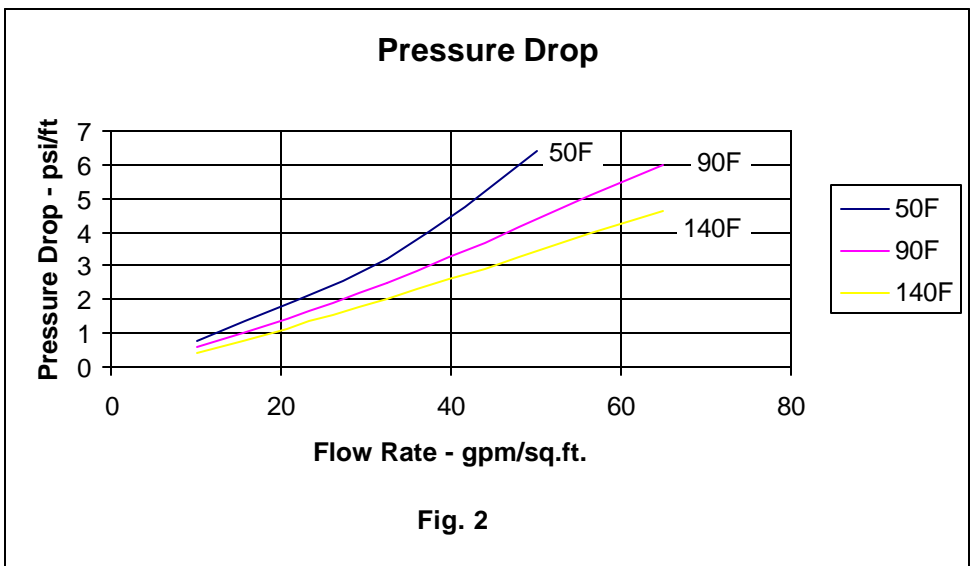
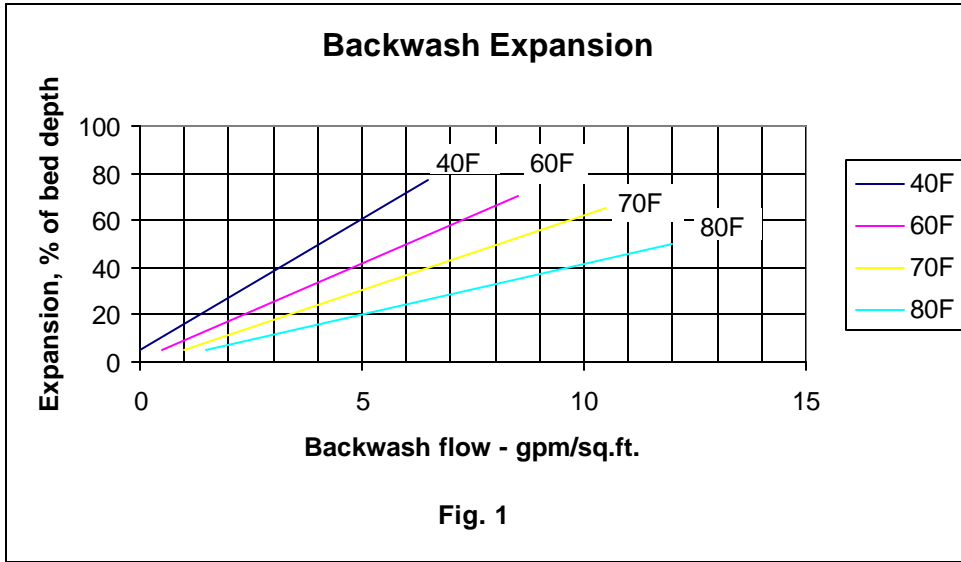
Do not underestimate the importance of backwashing, since it serves to remove particulate matter, eliminate gas pockets, reclassify resin beads and remove resin fines. Refer to Figure 1 for the appropriate rate to use.

**PRESSURE DROP:**

Please refer to Figure 2 for estimating the pressure drop across the resin bed. Pressure drop across the equipment itself must be added to these values.

**CAPACITY AND LEAKAGE:**

Use the C-100H bulletin for both capacity and leakage for C-100x 10 when used in the hydrogen form. When used in the sodium form for softening, use our C-100 bulletin.



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