

Shallow Shell™ SSTC104

PRODUCT DATA SHEET

Polyacrylic Weak Acid Cation Resin - Hydrogen Form, Shallow Shell™

Principal Applications

- Dealkalization
- Deionization
- Industrial softening
- Softening of aqueous organic solutions

Advantages

- Superior regeneration
- High operating capacity
- Lower rinse volumes
- Excellent physical and chemical stability

Additional Information

- SST® is a registered trademark of Purolite Corporation.

Typical Physical and Chemical Characteristics

Application	Dealkalization, deionization; Softening of water and aqueous organic solutions – SST Version
Polymer Structure	Porous crosslinked polyacrylic
Appearance	Spherical beads
Functional Group	Carboxylic acid
Ionic Form as Shipped	H ⁺
Total Capacity (min.)	6.5 eq/kg (H ⁺ form)
Moisture Retention	39 – 45% (H ⁺ form)
Particle Size Range	300 – 1600 µm
<300 µm (max.)	1%
Reversible Swelling, H ⁺ → Ca ²⁺ (max.)	20%
Reversible Swelling, H ⁺ → Ca ²⁺ (operating)	7% (approx.)
Reversible Swelling, H ⁺ → Na ⁺ (max.)	60%
Specific Gravity	1.17
Shipping Weight (approx.)	710 – 760 g/L (44.4 – 47.5 lb/ft ³)
Temperature Limit	120°C (250°F)

Hydraulic Characteristics

Pressure Drop

The pressure drop across a property-classified bed of ion exchange resin depends on the particle size distribution, bed depth, and voids volume of the exchange material, as well as on the flow rate and viscosity (and hence on the temperature) of the influent solution. Factors affecting any of these parameters— such as the presence of particulate matter filtered out by the bed, abnormal compressibility of the resin, or the incomplete classification of the bed—will have an adverse effect, and result in an



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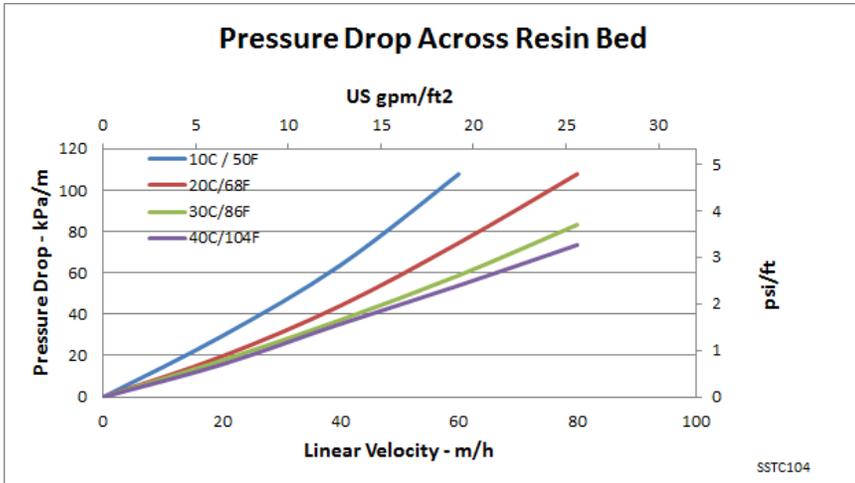
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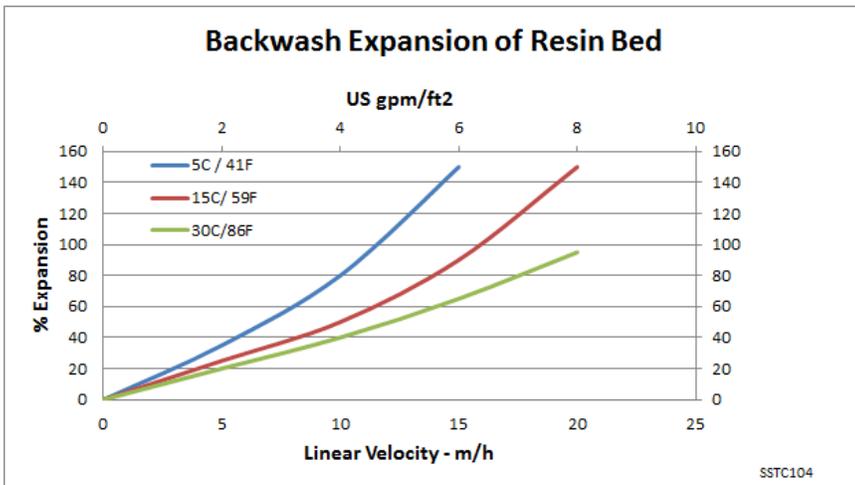
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increased head loss. Depending on the quality of the influent water, the application and the design of the plant, service flow rates may vary from 10 to 40 bed volumes per hour.



Backwash

During up-flow backwash, the resin bed should be expanded in volume between 50 and 70%. This operation will free particulate matter, clear the bed of bubbles and voids, and reclassify the resin particles ensuring minimum resistance to flow. Bed expansion increases with flow rate and decreases with temperature for the exhausted (Ca+ +/Mg+ +) form of the resin. Bed expansion of the resin in the H + form is generally higher by 10.15% for a given flow-rate, but a 50% increase in flow-rate is required for a similar bed expansion in the highly swollen Na + form. Care should always be taken to avoid resin loss by over expansion of the bed.



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