

# SOFTENING RESIN



## PROSOFT™ PREMIUM

**ProSoft™ Premium (P/N ER10002)** is the best value for an all-around, hard working, softening resin. It is primarily used on the types of chlorinated waters associated with municipal water treatment. Its full 8% crosslinking makes ProSoft Premium more resistant to chlorine attack and the vigorous backwashes of commercial applications and turbulators.

### FEATURES

- Complies with USDA & FDA regulations (paragraph 21 CFR173.25) for potable water applications \*
- Uniform particle size, low pressure drop
- Superior physical stability
- Low color throw
- Certified to NSF/ANSI Standard 61

\* For potable water applications, the resin must be properly pre-treated, usually by multiple exhaustion and regeneration cycles, to insure compliance with extractable levels.

### Physical Properties

Polymer Structure	Styrene crosslinked with DVB
Functional Group	R-(SO <sub>3</sub> ) <sup>-</sup> M <sup>+</sup>
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, spherical beads
Screen Size Distribution	.16 to 50 nominal
+16 mesh (U.S. Std.)	.5% maximum
-50 mesh (U.S. Std.)	.1% maximum
pH Range	.0 to 14
Sphericity	.93% minimum
Uniformity Coefficient	Approx. 1.6
Water Retention	
Sodium Form	.42 to 49%
Hydrogen Form	.47 to 54%
Solubility	Insoluble
Approximate Shipping Weight	
Sodium Form	.52 lbs/cu.ft.
Hydrogen Form	.50 lbs/cu.ft.
Swelling Ca <sup>+2</sup> or Na <sup>+</sup> to H <sup>+</sup>	.5 to 9%
Total Capacity	
Sodium Form	.1.9 meq/ml minimum
Hydrogen Form	.1.8 meq/ml minimum

### Suggested Operating Conditions

Maximum Temperature	
Sodium Form	280°F (138°C)
Hydrogen Form	265°F (130°C)
Minimum Bed Depth	.24 inches
Backwash Rate (see next page)	
50% Bed Expansion @ 60°F	4.5 gpm/sq.ft.
Regenerant Concentration †	
Sodium Cycle †	10 to 15% NaCl
Hydrogen Cycle †	10% HCl or 1 to 8% H <sub>2</sub> SO <sub>4</sub>
Regenerant Flow Rate	.0.5 to 1.5 gpm/cu.ft.
Regenerant Contact Time	.20 minutes minimum
Regenerant Level	.4 to 15 lbs/cu.ft.
Displacement Rinse Rate	Same as Regenerant Flow Rate
Displacement Rinse Volume	.10 to 15 gal/cu.ft
Fast Rinse Rate	Same as Service Flow Rate
Fast Rinse Volume	.35 to 60 gal/cu.ft.
Service Flow Rate	.2 to 10 gpm/cu.ft.
Pressure Drop	See next page

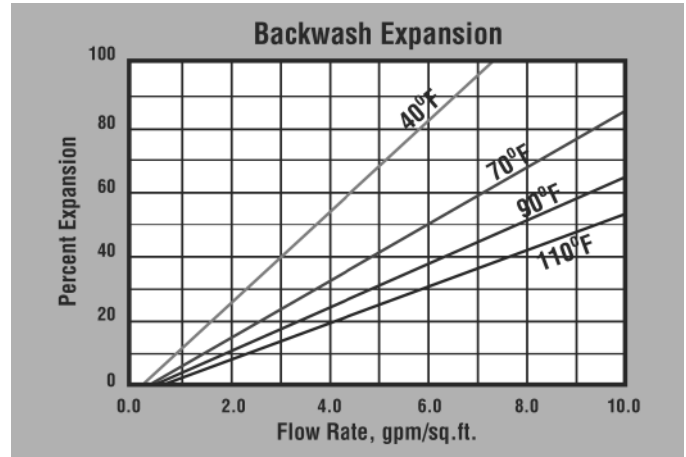
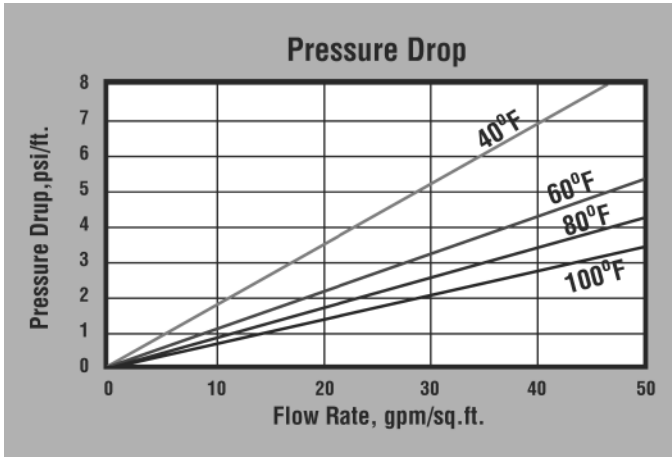
† **CAUTION: DO NOT MIX ION EXCHANGE RESINS WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials such as ion exchange resins.

Note: These suggestions and data are based on information we believe to be reliable. However, we do not make any guarantee or warranty. We caution against using these products in any unsafe manner or in violation of any patents. Further, we assume no liability for the consequences of any such actions.

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**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 25 to 50 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of ProSoft™ Premium in the sodium form.

## OPERATING CAPACITY

### Sodium Chloride (NaCl) Regeneration

The sodium cycle operating capacity for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO<sub>3</sub>, is shown in the following table.

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	25.4
10	29.0
15	33.0

### Hydrogen Sulfate (H<sub>2</sub>SO<sub>4</sub>) Regeneration

The hydrogen cycle operating capacity for hardness removal at various regeneration levels with an influent calcium/magnesium ratio of 2/1 and a hardness level of 500 ppm, as CaCO<sub>3</sub>, is shown in the following table.

Pounds H <sub>2</sub> SO <sub>4</sub> /cu.ft.	Capacity Kilograins/cu.ft.
5	19.0
7.5	23.0
10	25.3
15	28.1