

SOFTENING RESIN



PROSOFT™ HEAVY DUTY

ProSoft™ Heavy Duty (P/N 10006) is just that. Manufactured in special runs to provide one of the toughest softening resins around. With a 10% crosslink and 35,000 grain capacity at 15 lbs of salt, ProSoft Heavy Duty is perfect for industrial applications involving rigorous backwashing or high chlorine levels.

FEATURES

- Complies with USDA & FDA regulations (paragraph 21 CFR173.25) for potable water applications *
- 10% divinylbenzene
- Uniform particle size, low pressure drop
- Superior physical stability
- Low color throw

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

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	.....7.0 gpm/sq.ft.
Regenerant Concentration †	
Sodium Cycle †	.....10 to 15% NaCl
Hydrogen Cycle †	.....10% HCl or 1 to 8% H ₂ SO ₄
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

Physical Properties

Polymer Structure	.....Styrene crosslinked with DVB
Functional Group	.....R-(SO ₃) ⁻ M ⁺
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	.....39 to 45%
Hydrogen Form	.....46 to 52%
Solubility	.....Insoluble
Approximate Shipping Weight	
Sodium Form	.....54 lbs/cu.ft.
Hydrogen Form	.....52 lbs/cu.ft.
Swelling Ca ⁺² or Na ⁺ to H ⁺Approx. 5%
Total Capacity	
Sodium Form	.....2.2 meq/ml minimum
Hydrogen Form	.....2.1 meq/ml minimum

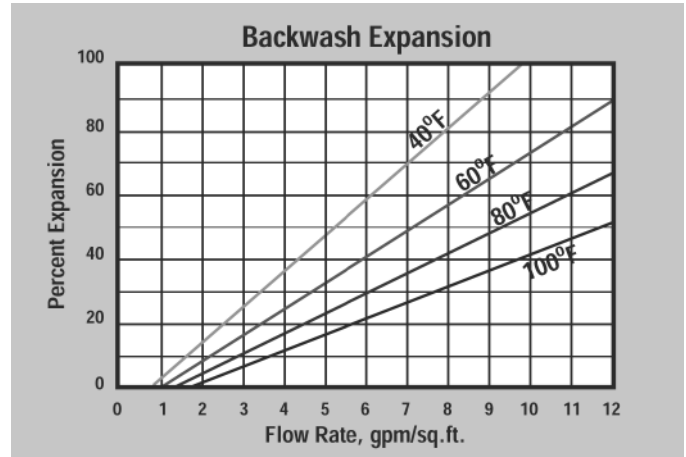
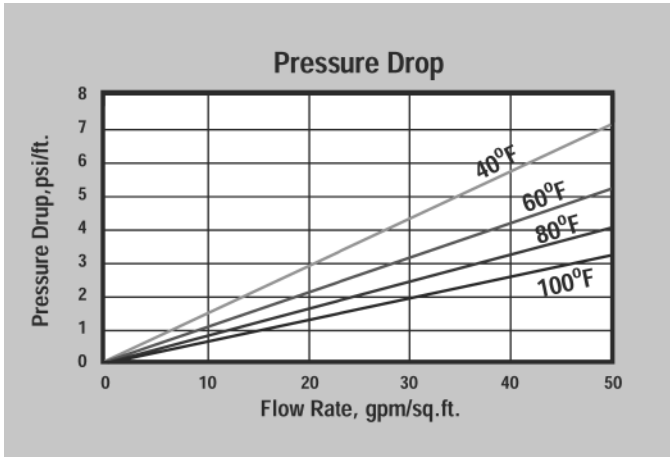
† **CAUTION: DO NOT MIX ION EXCHANGE RESINS WITH STRONG OXIDIZING AGENTS.** Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials such as ion exchange resins.

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™ Heavy Duty 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 CaCO₃, is shown in the following table.

Pounds NaCl/cu.ft.	Capacity Kilograins/cu.ft.
5	21.0
7.5	27.0
10	30.9
15	35.4

Hydrogen Sulfate (H₂SO₄) 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 CaCO₃, is shown in the following table.

Pounds H ₂ SO ₄ /cu.ft.	Capacity Kilograins/cu.ft.
5	20.0
7.5	24.5
10	27.0
15	30.1