

SOFTENING RESIN



PROSOFT™ ER10011-NA

ProSoft ER10011-NA (P/N ER10011-NA) is a premium grade, high capacity, weak acid gel type cation resin supplied in the sodium form (also available in hydrogen form) as moist, tough, uniform, spherical beads. Ion exchange activity is based on its carboxylic functional group. ER10011-NA is intended for use in dealkalization, deionization, and chemical processing applications.

FEATURES & BENEFITS

- **High capacity**—Over 80 kilograins total capacity per cubic foot assures maximum operating efficiency and capacity compared with other carboxylic type resins.
- **Carboxylic functional groups**—Gives extremely high regeneration efficiencies and high operating capacities.
- **Highly uniform particle size**—16 to plus 50 mesh range; gives a lower pressure drop while maintaining superior kinetics.
- **Superior physical stability**—90% plus sphericity together with a uniform gel structure and a very uniform particle size provide greater resistance to bead breakage.

Suggested Operating Conditions

Maximum Temperature	250° F
Minimum Bed Depth	30 inches
Service Flow Rate	2 to 5 gpm/cu.ft.
Backwash Rate	50 to 75 percent
	Bed Expansion
Regenerant Concentration	
HCl	1 to 4 percent
H ₂ SO ₄	0.8 to 8 percent
Regenerant Flow Rate	0.3 to 0.75 gpm/cu.ft.
Regenerant Contact Time	At least 30 minutes
Regenerant Level	Depends on Alkalinity
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.

Applications

Demineralization—Can be used to remove cations associated with alkalinity in multiple bed demineralizers.

Softening—Can be operated as a softener, in the sodium cycle. This requires a two stage regeneration using a strong acid first stage to remove multivalent ions from the bed followed by a neutralization rinse with an alkali.

Dealkalization—Bicarbonate alkalinity associated with multivalent cations such as hardness can be effectively removed using the hydrogen form. When operated in this manner both hardness and alkalinity are removed. The reaction is limited by the amount of alkalinity and the ratio of hardness (multivalent cations) to alkalinity.

(See the graphs at the bottom of the reverse side of this page.)

Typical Properties

Polymer Structure	Acrylic/Divinylbenzene
Functional Group	R ⁻ (COOH) ⁻
Ionic Form, as shipped	Sodium or Hydrogen
Physical Form	Tough, Spherical Beads
Screen Size Distribution	16 to 50
+ 16 mesh (U.S. Std.)	< 10 percent
- 50 mesh (U.S. Std.)	< 1 percent
pH Range	0 to 14
Sphericity	90+ percent
Water Retention	53 to 58 percent
Solubility	Insoluble
Approximate Shipping Weight	
Sodium Form	44 lb/cu.ft.
Hydrogen Form	47 lb/cu.ft.
Swelling H ⁺ to Na ⁺	Approx. 100 percent
Total Capacity	
Sodium Form	2.0 meq/mL
Hydrogen Form	> 4.0 meq/mL

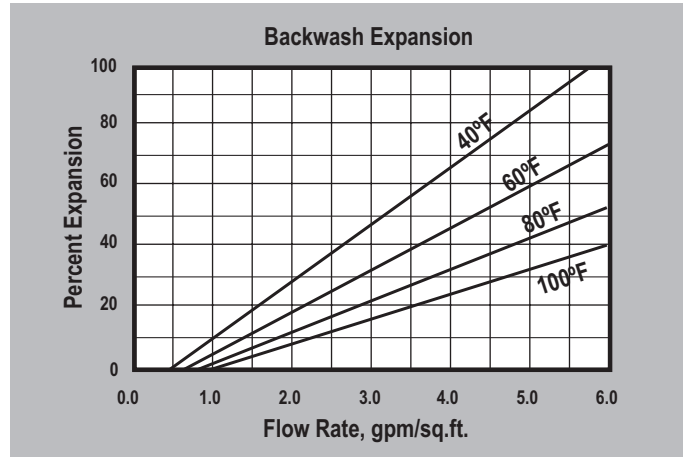
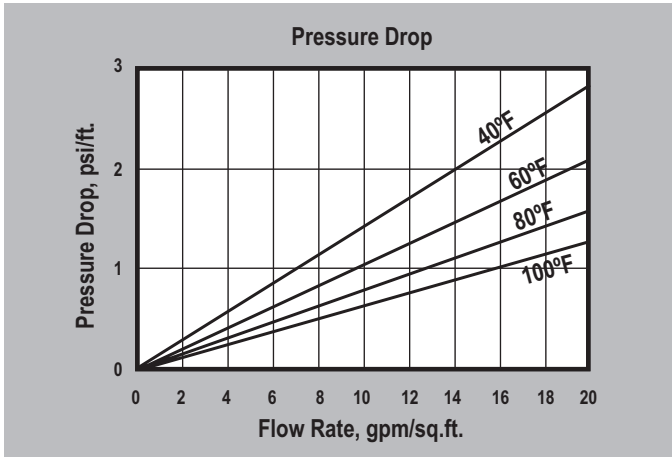


This product has been tested and certified by the Water Quality Association according to NSF/ANSI-61 for materials safety only.

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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 50 to 75 percent. This will remove any foreign matter and reclassify the bed. The graph above shows the expansion characteristics of ProSoft ER10011-NA in the hydrogen form.

ALKALINITY — These three graphs show the base operating capacity according to the ratio of hardness to alkalinity, and the effects of exhaustion flow rate and temperature to a 10% alkalinity leakage endpoint.

