# SOFTENING RESIN

## PROSOFT™ HEAVY DUTY

**ProSoft Heavy Duty** 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 lb of salt, ProSoft Heavy Duty is pefect for industrial applications involving rigorous backwashing or high chlorine levels.

**FEATURES**

- 10% divinylbenzene
- Uniform particle size, low pressure drop
- Superior physical stability
- Low color throw
- Conforms to paragraph 21CFR173.25 of the Food Additives Regulations of the US FDA
- Certified to NSF/ANSI Standard 61 *

* NSF/ANSI-61 compliance requires conditioning with a minimum 20 bed volume rinse prior to first use.

**Physical Properties**

| | |
|---|---|
| Polymer Structure | Styrene/DVB |
| Polymer Type | Gel |
| Functional Group | Sulfonic Acid |
| Physical Form | Spherical beads |
| Resin Color | Amber |
| Ionic Form, as shipped | Sodium or Hydrogen |
| Total Capacity | |
| Sodium Form | > 2.2 meq/mL |
| Hydrogen Form | > 2.0 meq/mL |
| Water Retention | |
| Sodium Form | 39 to 45% |
| Hydrogen Form | 46 to 52% |
| Swelling, Na to H | 4 to 8% |
| Screen Size Distribution | 16 to 50 (US mesh) |
| Maximum Fines Content | 1% (< 50 mesh) |
| Minimum Sphericity | 93% |
| Uniformity Coefficient | 1.6 approx. |
| Approximate Shipping Weight | |
| Sodium Form | 54 lb/cu.ft. |
| Hydrogen Form | 52 lb/cu.ft. |

**Part Number**

| | |
|---|---|
| Sodium Form | ER10006 |
| Hydrogen Form | ER10007 |

**Suggested Operating Conditions**

| | |
|---|---|
| Maximum Temperature | |
| Sodium Form | 280°F (138°C) |
| Hydrogen Form | 265°F (130°C) |
| Minimum Bed Depth | 24 inches |
| Backwash Expansion | 25 to 50% |
| Maximum Pressure Loss | 25 psi |
| Operating pH Range | 0 to 14 |
| Regenerant Concentration | |
| Salt Cycle | 10 to 15% NaCl |
| Hydrogen Cycle | 5 to 10% HCl |
| Hydrogen Cycle | 1 to 8% $H_2SO_4$ |
| Regenerant Level | 4 to 15 lb/cu.ft. |
| Regenerant Flow Rate | 0.5 to 1.5 gpm/cu.ft. |
| Regenerant Contact Time | > 20 minutes |
| Displacement Flow Rate | Same as dilution water |
| Displacement Volume | 10 to 15 gal/cu.ft |
| Rinse Flow Rate | Same as service flow |
| Rinse Volume | 35 to 60 gal/cu.ft. |
| Service Flow Rate | 1 to 10 gpm/cu.ft. |

† **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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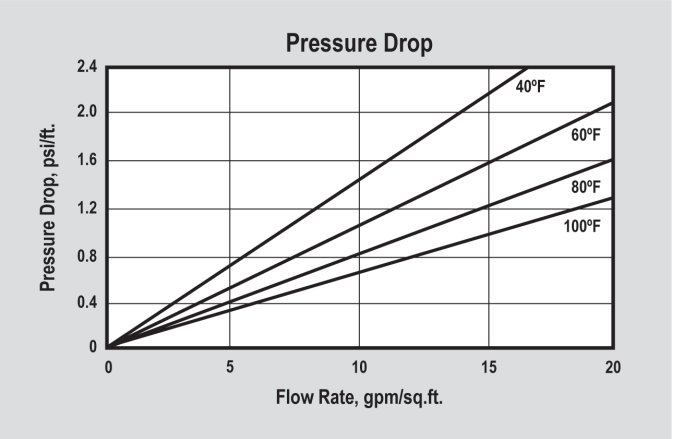
MEMBER Water Quality ASSOCIATION

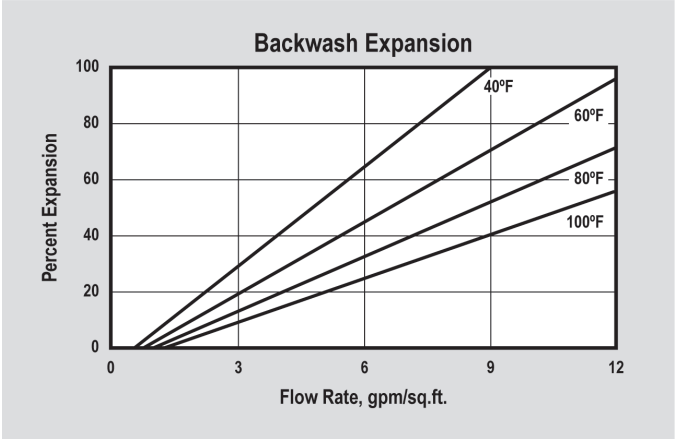
FORM 1135
EFFECTIVE
AUGUST 2021

# SOFTENING RESIN

## PROSOFT™ HEAVY DUTY



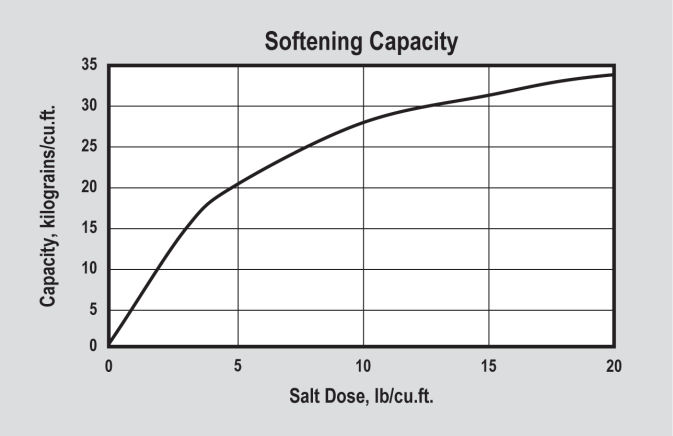

PRESSURE DROP — *The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate at various temperatures.*




BACKWASH — *The graph above shows the expansion characteristics as a function of flow rate at various temperatures.*

## APPLICATIONS

### Softening



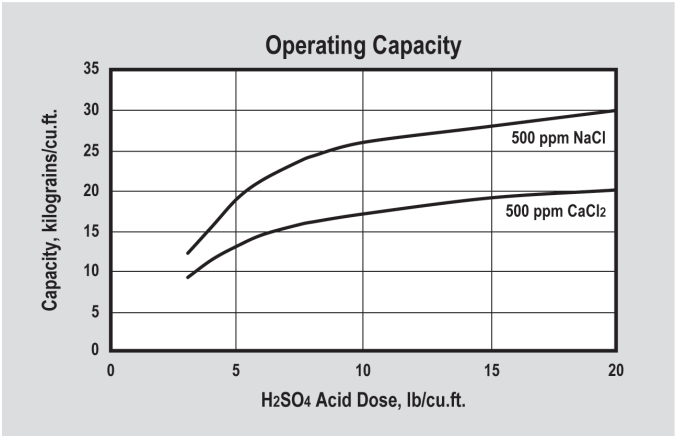

SOFTENING CAPACITY — *Capacity is based on 2:1 Ca:Mg ratio, 500 ppm TDS as $CaCO_3$, 0.2% hardness in the salt, and 10% brine concentration applied co-currently through the resin over 30 minutes. No engineering downgrade has been applied.*

### High Temperature Use

ProSoft Heavy Duty is suitable for operation at temperatures as high as 280°F. At temperatures above 212°F, dissolved oxygen in the feedwater is a powerful oxidant and can chemically damage the resin. Oxygen levels in the feed should be reduced to less than 0.05 ppm to ensure a reasonable service life of the resin.

### Demineralization

ProSoft Heavy Duty (Hydrogen Form) can be used as the cation component in a variety of demineralization configurations where a hydrogen form cation resin is coupled with a hydroxide form anion resin. The high density of ER10007 provides ideal separation in polishing mixed beds. ProSoft Heavy Duty (Hydrogen Form) has higher total capacity and lower chemical efficiency compared to ProSoft Premium (Hydrogen Form).




OPERATING CAPACITY — *Capacity is based on 500 ppm of stated salt (as $CaCO_3$) with 0% alkalinity, 36 inch bed depth, flow rate of 2 to 4 gpm per cu.ft., and a minimum of 30 minutes chemical injection time. Sulfuric acid concentration must be stepwise when calcium concentration exceeds 20% of total cations. No engineering downgrade has been applied.*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