SPECIALTY RESIN

PROBLEND™ NUCLEAR GRADE HIGH CAPACITY MIXED-BED RESIN

ProBlend NG-HC (P/N ER30008) is a sturdy, general purpose grade of mixed-bed resin with high capacity and high temperature resistance. The cation component is at least 99% regenerated and the anion component is at least 90% regenerated. The product is fully tested to insure its ability to achieve greater than 15 megohm resistivity effluents under dynamic load.

FEATURES

- Conforms to paragraph 21 CFR173.25 of the Food Additives Regulations of the FDA
- Designed to provide ultra-high purity water
- Highest operating capacity
- Low effluent TOC values
- Superior thermal and physical stability
- Best choice for single use applications, cartridges, and for severe operating conditions

Physical Properties

Functional Structure	
Cation	$RSO_3^-H^+$ (Hydrogen form gelular sulfonated polystyrene copolymer)
Anion	$R_4N^+OH^-$ (Hydroxyl form Type 1 porous gel strong base alkyl quarternary ammonium polystyrene copolymer)
Physical Form	Spherical beads
Screen Size Distribution	
+16 mesh (U.S. Std.)	2% maximum
−45 mesh (U.S. Std.)	2% maximum
Moisture Content (as shipped)	60% maximum
Volume Ratio (as shipped)	
Cation (Na^+ form)	40%
Anion (Cl^- form)	60%
Total Capacity	
Cation (Na^+ form)	1.95 meq/mL minimum
Cation (H^+ form)	1.85 meq/mL minimum
Anion (Cl^- form)	1.40 meq/mL minimum
Anion (OH^- form)	1.12 meq/mL minimum
Approximate Shipping Weight	43 lb/cu.ft. (720g/l)
Standard Packaging	5 or 7 cu.ft. plastic lined fiber drums

Suggested Operating Conditions

Maximum Temperature	
Non-regenerable *	175°F (80°C)
Regenerable	140°F (60°C)
Operating Flow Rate (Typical)	2 to 10 gpm/cu.ft.
pH Range	0 to 14
Backwash Rate (See graph on next page)	
Pressure Drop (See graph on next page)	
Metals Content (Typical ppm dry weight)	
Iron (Fe)	100 ppm maximum
Copper (Cu)	50 ppm maximum
Lead (Pb)	50 ppm maximum
Percent Conversions to Ionic Form	
Cation H	99% minimum
Anion OH	90% minimum **
Anion Cl + SO_4	10% maximum
Anion CO_3	** (See note below)

Column Operating Capacity

0.60 meq/mL (13 Kgrs/cu.ft.) minimum to electrolyte breakthrough during initial cycle.

Limitations

Extended exposure to strong oxidizers, such as chlorine, hydrogen peroxide, and concentrated nitric acid, degrade the structural backbone of the resin and should be avoided.

* 6 month typical resin life at 175°F (80°C).

** Hydroxides and CO_3 levels measured immediately after production and may change during storage and shipment due to adsorption of CO_2 from the atmosphere.

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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FORM 1325
EFFECTIVE
JANUARY 2013

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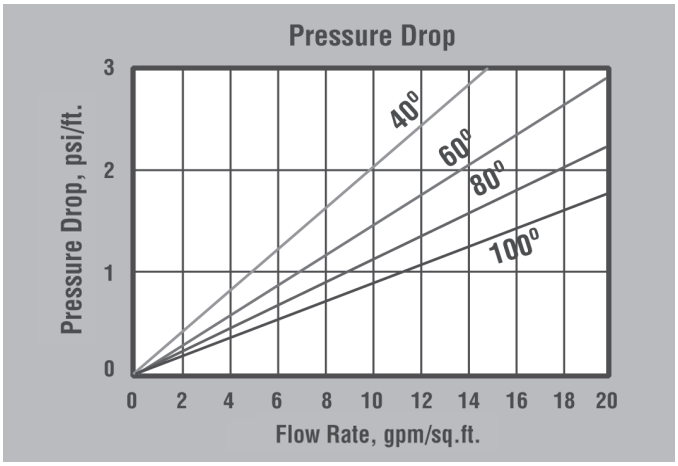

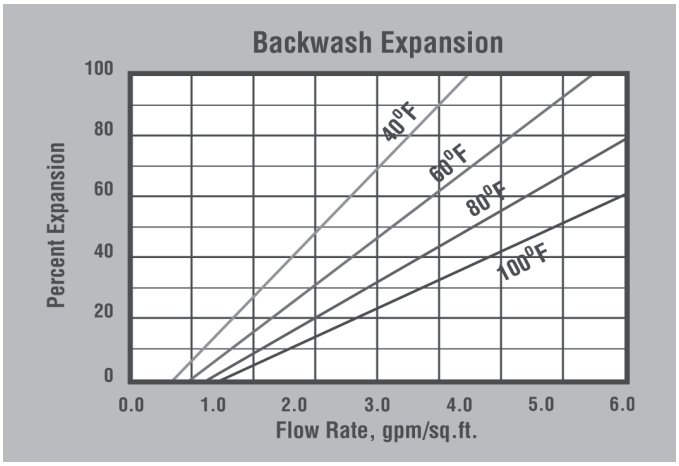

PRESSURE DROP — The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate at various temperatures.

BACKWASH — The backwash step is used to separate the components prior to regeneration and to remove particles. The separation is optimized at a bed expansion of 50 to 75 percent.

ProBlend High Capacity Resins Comparison Table

Specifications	Nuclear Grade (P/N ER30008)	Semi-Conductor (P/N ER30004)	Low TOC Throw (P/N ER30005)	Ultra Low TOC Throw (P/N ER30009)
Resistivity in polishing 18 megohm water @ 60 bed volumes per hour (megohm)	> 15 **	> 18	> 18	> 18
Leachable TOC @ 25 bed volumes from start up (ppb as C) *	No Spec	No Spec	< 25	< 25
Leachable TOC @ 50 bed volumes from start up (ppb as C) *	No Spec	< 50	< 10	< 5
Leachable TOC @ 100 bed volumes from start up (ppb as C) *	No Spec	No Spec	No Spec	< 1

* Leachable TOC measured at 0.5 bed volumes per minute at 175ºF (80ºC).

** Influent greater than 1 megohm.

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