

SPECIALTY RESIN



PROBLEND™ SEMICONDUCTOR

ProBlend™ Semiconductor (P/N ER30002) — When it's quality not quantity you're after, there is no better choice than ProBlend Semiconductor grade resin. This is the perfect polisher, with each lot tested and certified to reach 18 megaohm water when challenged with with 10 megaohm water. This is also the choice for laboratory and cartridge applications.

FEATURES

- Complies with USDA & FDA regulations (paragraph 21 CFR173.25) for potable water applications *
- Designed to provide ultra-high purity water
- High operating capacity
- Low effluent TOC values
- Superior organic fouling resistance
- Excellent regenerable capacities for inorganic and organic ions

* 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

Non-regenerable *175°F (80°C)

Regenerable140°F (60°C)

Operating Flow Rate (Typical)2 to 10 gpm/cu.ft.

Backwash Rate (See next page)

50% Bed Expansion @ 60°F2.8 gpm/sq.ft.

Pressure DropSee 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 H99% minimum

Anion OH95% minimum **

Anion Cl + SO₄5% maximum

Anion CO₃** (See note below)

Column Operating Capacity

0.55 meq/mL (12 Kgrs/cu.ft.) minimum to electrolyte break-through 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.

** Hydroxides and CO₃ levels measured immediately after production and may change during storage and shipment due to adsorption of CO₂ 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.

Physical Properties

Functional Structure

CationR₃SO₃⁻H⁺ (Hydrogen form gelular sulfonated polystyrene copolymer)

AnionR₄N⁺OH⁻ (Hydroxyl form Type 1 porous gel strong base alkyl quaternary ammonium polystyrene copolymer)

Physical FormSpherical beads

Screen Size Distribution16 to 45 nominal

+16 mesh (U.S. Std.)2% maximum

-45 mesh (U.S. Std.)2% maximum

pH Range0 to 14

Moisture Content65% maximum

Approximate Shipping Weight43 lbs/cu.ft.

Volume Ratio (as shipped)

Anion/Cation64/36

Total Capacity

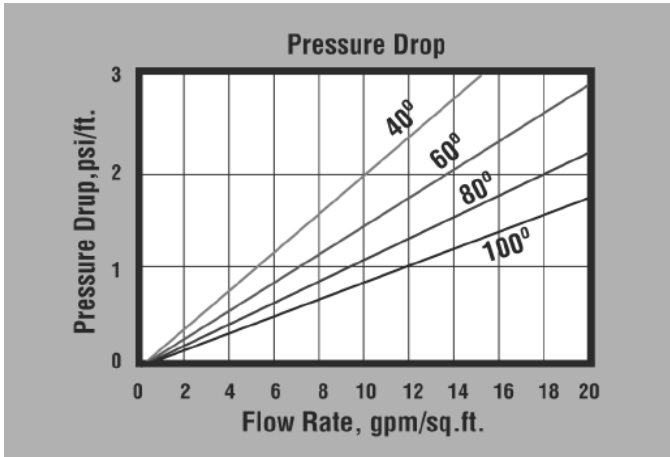
Cation (Na⁺ form)1.95 meq/ml minimum

Anion (Cl⁻ form)1.25 meq/ml minimum

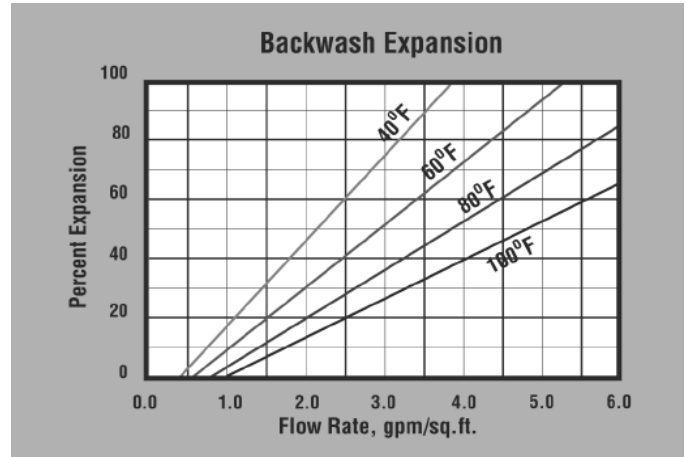
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PRESSURE DROP — The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate at various temperatures.



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	Semi-Conductor	Low TOC Throw	Ultra Low TOC Throw
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	2

* Leachable TOC measured at 0.5 bed volumes per minute at 175°F.

** Influent greater than 1 megohm.