

GENERAL TECHNOLOGIES, SPC

- High-Quality Services & Products

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MB-1USTD (High Purity, Low TOC), H/OH HIGH PURITY GRADE STRONG ACID/STRONG BASE MIXED CATION/ANION ION EXCHANGE RESINS (Designed for use in high purity water treatment applications)

Product Description

MB-1USTD (High Purity, Low TOC) resin is designed to provide high purity water required for many applications such as micro-electronic, pharmaceutical productions and high pressure boiler feed water. The component resins are specially selected to ensure high purity grade water with low conductivity (resistivity > 18 megohms) and very low effluent TOC values.

The product is a special blend of specially processed Type I strong base gel type anion exchange resins with dark black, 8% cross-linked strong acid porous gel type cation exchange resins. The special blending is to ensure excellent hydraulic characteristics and regeneration capabilities to produce water free of total dissolved solids.

The dark black color of the cation resin also allows the operator to easily visualize the separation of cation and anion resins in a mixed-bed ion exchange polisher during the hydraulic separation of the resin bed. **MB-1USTD (High Purity, Low TOC) is the perfect product for applications where regeneration of resin is required.**

Typical Physical, Chemical & Operating Characteristics

Typical Cation/Anion Mix Ratio	40% : 60% by Volume (other ratios available upon request)
Polymer Structure	Polystyrene cross-linked with Divinylbenzene
Physical Form and Appearance	Cation: Tough black spherical beads Anion: Tough white spherical beads
Whole Bead Count	90% Min.
Functional Groups	Cation: -SO ₃ H+ (H form) Anion: -N+(CH ₃) ₃ OH- (OH form)
Ionic Form (as shipped)	(Cation/Anion) H+/OH-
Shipping Weight, approx.	720 g/l (43 lb./ft. ³)
Mesh Size (U.S. Std)	Cation: mesh size 16-50 Anion: mesh size 16- 50
Moisture retention, H ⁺ /OH ⁻ form	Cation: 49-55% Anion: 53-60%
Total Capacity in regenerated form	Cation: 1.8 meq/mL minimum Anion: 1.2 meq/mL minimum
pH Range, Stability	0-14
Effluent Quality Guarantee	>18 meg Ohms and after initial rinse of 50 BV's (with >16 MΩ·cm DI water as feed water).

CHEMICAL AND THERMAL STABILITY

MB-1USTD (High Purity, Low TOC) mixed bed resin is insoluble in dilute or moderately concentrated acids, alkalis, and in all common solvents. However, exposure to significant amounts of free chlorine, "hypochlorite" ions, or other strong oxidizing agents over long periods of time will eventually break down the crosslinking. This will tend to increase the moisture retention of the resin, decreasing its mechanical strength, as well as generating small amounts of extractable breakdown products. The product's thermal stability is limited by its anion component, which is thermally stable to 90 °C (195 °F). The hydroxide functional groups of the anion resins tend to degrade in water temperatures appreciably higher than 70°C(160°F), thereby losing capacity, as the functional groups are gradually replaced by hydroxyl groups.