

ROTEK RSLBB

Final Polishing Mixed Bed Resin

RSLBB resin is a nuclear-grade mixed bed ion exchange resin specifically designed and manufactured for final polishing in the highest purity water treatment applications. This premixed resin product is composed of an equivalent mixture of high capacity, fully regenerated strong acid and strong base gel type ion exchange resins. The resin mixture exhibits no clumping. The particle size of the component resins is designed to reduce the natural tendency of cation and anion resins to separate when handled in a water slurry.

This ensures perfect mixed bed equilibrium performance since the resins will remain intimately mixed in the final polishing vessels. The uniform particle size of the resins maximizes the mixed bed's kinetic performance, allowing high service flow rates to achieve the ultimate balance of pressure drop and purity. All these characteristics are essential to produce water of the highest achievable purity with a minimum volume of rinse water.

RSLBB resin is designed for use in non-regenerable final polishing mixed beds in ultra-pure water systems in the semiconductor industry and similar demanding applications. The resin effectively reduces the leakage of all ionic species, silica, total organic carbon, and sub-micron particles to achieve higher water purity. Free of the limitations imposed by regenerable systems, the characteristics of this new semi-conductor grade mixed bed resin concentrate on optimum properties during service. RSLBB resin is not recommended for use in regenerable mixed bed applications.

Basic Resin Properties

In non-regenerable final polishing applications, UPW performance is much more significant than basic resin properties. It remains crucial to emphasize that the resins employed in this application boast the utmost capacity and overall quality. The typical properties of the resins used in RSLBB resin are shown below. These values underscore that both the cation and anion resins utilized in the production of RSLBB resin adhere to rigorous standards for high capacity and uniform particle size in ion exchange resins.



Volume: 25L/17KG

Typical Properties

These properties are typical but do not constitute specifications.

	Cation H ⁺	Anion OH ⁻
Total exchange capacity, eq/L	≥ 1.70	≥ 0.90
Moisture holding capacity, %	44.0 - 51.0	54.0 - 60.0
Particle size		
Uniformity coefficient	≤ 1.20	≤ 1.20
Harmonic mean size	600 - 700 μm	580 - 680 μm
H form	% of sites	-
OH form	% of sites	≥ 90.0
Cl form	% of sites	≤ 0.5
CO ₃ form	% of sites	≤ 5.0
SO ₄ form	% of sites	≤ 0.1

Suggested Operating Conditions

(Product may be operated successfully outside these conditions, but results may not be optimum)

Maximum operating temperature	60°C	(140°F)
Feed water temperature	15 to 25°C	(60 to 77°F)
Minimum bed depth	900 mm	(3 feet)
Service flow rate	20 to 40 BV*/h	
Recommended influent water quality		
Inlet Resistivity	> 17 M Ω.cm	
Inlet Silica	<2 ppb	
Inlet Total Organic Carbon	< 15 ppb	

* 1 BV (Bed Volume) = 1 m³ solution per m³ resin (1BV/h = 0.125 gpm/ft³)