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AMBERJET™ UP6150

Polishing mixed bed resin for high purity applications

Introduction

AMBERJET UP6150 resin is a fully regenerated mixed bed of cation and anion exchange resins intended for use in high purity water systems after reverse osmosis. In properly designed ultrapure water systems, Amberjet UP6150 resin will deliver 18 Megohm•cm quality water with total organic carbon levels well below 5 ppb on its first operating cycle as a polishing mixed bed. This mixed bed product is particularly suitable for use in the polishing of high purity water for specialty electronics applications such as the manufacturing of disk drives, display devices, CD-ROMs, discrete semiconductor devices, lower density IC chips, or in the back-end chip dicing and mounting operations. Because of its high level of regeneration Amberjet UP6150 resin is also suited for any general purpose mixed bed applications for the economical production of high purity water. The component resins of AMBERJET UP6150 resin are uniform particle size Amberjet resins, and their size was selected to provide excellent first cycle mixed bed performance, while at the same time allowing for future separation and regeneration of the resins. The resins are mixed to give a stoichiometric equivalent of cation and anion exchange capacity, and the resin mixture exhibits no clumping. The uniform particle size of the resins maximizes kinetic performance in the service cycle of the mixed bed, while still allowing for later separation and regeneration. All these characteristics are essential to produce high purity water with a minimum volume of rinsing.

Properties

For high purity regenerated mixed beds, UPW performance is much more significant than basic resin properties. It is still important to know that the resins used in the application are of the highest quality. The typical properties of the resins used in AMBERJET UP6150 resin are shown below.

These values are listed to show that both the cation and anion resins used to make AMBERJET UP6150 resin meet the standards for high capacity, uniform particle size ion exchange resins.

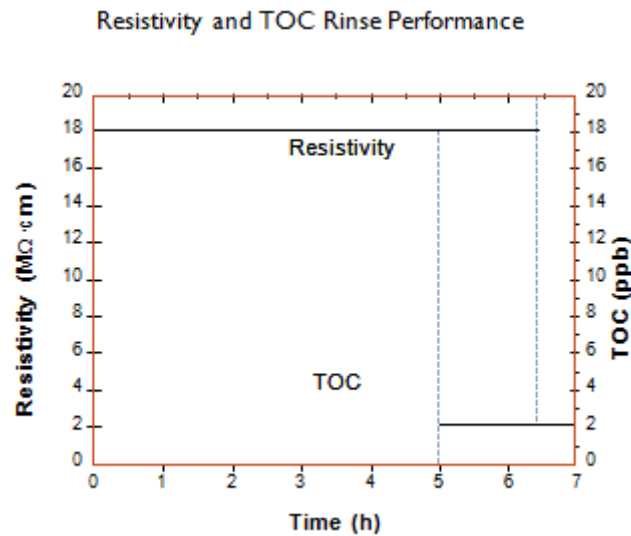
	Cation H+	Anion OH-
Total exchange capacity	≥1.80	≥1.00
Moisture holding capacity	44.0 – 54.0	54.0 – 66.0
Shipping weight		
Particle Size		
Uniformity coefficient	≤1.20	≤1.25
Harmonic mean size	0.58 to 0.68 mm	0.58 to 0.68 mm
H form % of sites	≥ 99	-
OH form % of sites	-	≥95.0
Cl form % of sites	-	≤0.5
CO3 form % of sites	-	≤5.0
SO4 form % of sites	-	≤0.1

Suggested Operating Conditions

Water Treatment	
Feed water temperature	15 to 25°C (60 to 77°F)
Minimum bed depth	900 mm (3 feet)
Service flow rate (working mixed bed)	20 to 30 BV/h
Service flow rate (polishing mixed bed)	30 to 40 Bv/h
Recommended influent water quality for polishing mixed bed application	
Inlet resistivity	>16 MΩ
Inlet silica	>5ppb
Inlet total organic carbon	<20 ppb

Quality assurance

AMBERJET UP6150 resin is tested by Rohm and Haas for resistivity, total organic carbon, and kinetic performance and will meet stringent UPW performance requirements on these most critical parameters. Rohm and Haas will fully support the quality and performance of AMBERJET UP6150 resin in UPW applications in order to assure full customer satisfaction with the product as delivered. Typical TOC and resistivity curves based on our quality control procedure for Amberjet UP6150 resin are shown below.



For more information about DOW™ resins, call the Dow Water & Process Solutions business:

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