

PRODUCT DATA SHEET

AMBERJET™ UP6150

Polishing Mixed Bed Resin for High Purity Applications

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.

BASIC RESIN 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.

	<i>Cation H⁺</i>	<i>Anion OH⁻</i>
Total exchange capacity, eq/L _____	≥ 1.80	≥ 1.00
Moisture holding capacity, % _____	44.0 - 54.0	54.0 - 66.0
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
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)

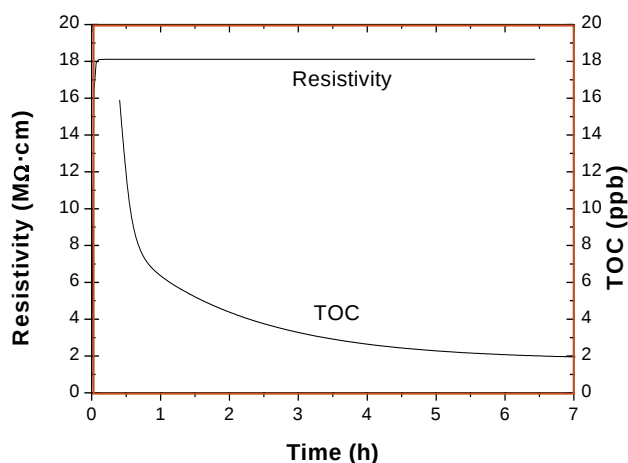
Feed water temperature _____	15 to 25°C (60 to 77°F)
Minimum bed depth _____	900 mm (3 feet)
Service flow rate (working mixed bed) _____	20 to 30 BV*/h
Service flow rate (polishing mixed bed) _____	30 to 40 BV/h
Recommended <i>influent</i> water quality for polishing mixed bed application	
Inlet Resistivity _____	> 16 MΩ·cm
Inlet Silica _____	< 5 ppb
Inlet Total Organic Carbon _____	< 20 ppb

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

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.

Resistivity and TOC Rinse Performance



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Ion exchange resins and polymeric adsorbents, as produced, contain by-products resulting from the manufacturing process. The user must determine the extent to which organic by-products must be removed for any particular use and establish techniques to assure that the appropriate level of purity is achieved for that use. The user must ensure compliance with all prudent safety standards and regulatory requirements governing the application. Except where specifically otherwise stated, Rohm and Haas Company does not recommend its ion exchange resins or polymeric adsorbents, as supplied, as being suitable or appropriately pure for any particular use. Consult your Rohm and Haas technical representative for further information. Acidic and basic regenerant solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. Nitric acid and other strong oxidising agents can cause explosive type reactions when mixed with Ion Exchange resins. Proper design of process equipment to prevent rapid buildup of pressure is necessary if use of an oxidising agent such as nitric acid is contemplated. Before using strong oxidising agents in contact with Ion Exchange Resins, consult sources knowledgeable in the handling of these materials.

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