ROHM AND HAAS

LENNTECH Water treatment and Air purification

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PRELIMINARY PRODUCT DATA SHEET

AMBERJET™ 9000 OH

Macroreticular Strong Base Anion Exchange Resin

AMBERJET 9000 OH resin is a uniform particle size, MR type, strong base anion exchange resin specifically designed for use in regenerable mixed bed condensate demineralizer systems. Amberjet 9000 OH resin now combines a proven MR (macroreticular) structure with the hydraulic and kinetic benefits of uniform particle size to deliver the best possible condensate polishing performance and resin life in both PWR nuclear and high pressure fossil power plants. One of the most critical parameters for an anion exchange resin in mixed bed polishing applications is fast kinetics for sulfate removal. In condensate polishing plants the anion resin is often exposed to materials which can foul the resin surface and dramatically reduce its capability to remove sulfate at high flow rates. In many power stations, loss of sulfate mass transfer kinetics is the most frequent cause of water chemistry problems, and the leading cause of polisher resin replacement. As compared to gel type uniform size anion resins which are commonly used, the unique MR structure of Amberjet 9000 OH resin is specifically designed to provide improved resistance to surface fouling and the resulting loss of sulfate mass transfer coefficient.

Amberjet 9000 OH resin is best paired with Amberjet 1600 H resin, for the ultimate in polisher performance. Amberjet 1600 H resin is a highly crosslinked uniform size gel cation exchange resin with exceptional resistance to release of polystyrene sulfonate leachables, which can foul anion resins. The combination of a low leachables cation resin, with a fouling resistant anion resin delivers the lowest possible sulfate levels in steam generators and the longest possible resin life. This is especially critical in PWR plants where organic amines are used.

PROPERTIES

Physical Form	Light tan opaque spherical beads
Matrix	Macroreticular styrene-divinylbenzene copolymer
Functional Group	Quaternary ammonium
Conversion to OH^- form [1]	93% minimum
Total Exchange Capacity [1]	0.80 meq/ml minimum (OH^- form)
Moisture Holding Capacity [1]	66 to 75% (OH^- form)
Shipping Weight	41.2 lb/ft^3 (660 g/L)
Particle size	
Uniformity Coefficient	1.25 maximum
Harmonic Mean Size	0.58 to 0.70 mm
Retained on 20 mesh (0.850 mm) [1]	5% maximum
Through 45 mesh (0.425 mm) [1]	1% maximum

[1] *Contractual value*

SUGGESTED OPERATING CONDITIONS

Maximum Operating Temperature	60 to 140° F (15 to 60 °C)
Service Flow Rate (Linear Velocity)	50 gpm/ft², maximum
Regeneration	
Regenerant	NaOH
Level (100% basis)	8 to 15 lbs/ft³
Flow Rate	0.25 to 0.5 gpm/ft³
Concentration	4 to 6%
Slow Rinse Volume (at regeneration flow rate)	8 to 15 gal/ft³
Fast Rinse	30 to 60 gal/ft³
Transfer of Mixed Beds in Condensate Polishers	Take steps to minimize re-separation of mixed beds, including minimizing the volume of free water or transfer water used. A remix is recommended in the service vessel before use.

HYDRAULIC CHARACTERISTICS

Figure 1 shows the pressure drop data for AMBERJET 9000 OH resin, as a function of service flow rate and water temperature. Pressure drop data are for clean, classified beds which have not accumulated solids during the service run. If the bed accumulates solids, the pressure drop would increase. The pressure drop of a mixed bed can be approximated by summing the component pressure drops. Figure 2 shows the bed expansion of AMBERJET 9000 OH resin, as a function of backwash flow rate and water temperature.

Figure 1: Pressure Drop

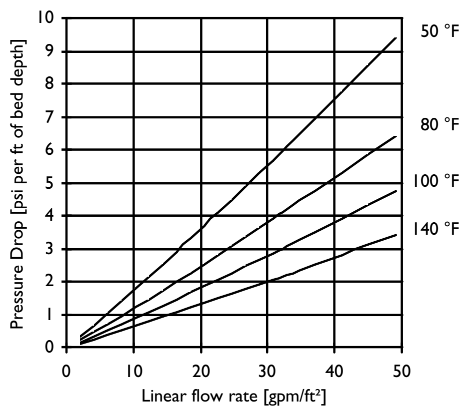

Figure 2 : Bed Expansion