



Product Data Sheet

AMBERJET™ 1500 H Resin

Uniform Particle Size Strong Acid Cation Exchange Resin for Mixed Bed Demineralization and Condensate Polishing Applications for the Power Industry.

Description

AMBERJET™ 1500 H Resin cation exchange resin is a premium quality, uniform particle size gel resin designed specifically for use in mixed beds. It is ideally suited to the high flow rate demands of condensate polishing applications. The bead size uniformity is tailored to complement the smaller, less dense macroporous AMBERJET 9000 OH or gel AMBERJET 4500 OH anion exchange resins. Together, these resins offer near perfect separation in mixed beds.

The color distinction between the two resins allows easy visual confirmation of separation following backwash. AMBERJET 1500 H Resin has outstanding mechanical strength and very good stability to oxidation.

Typical Physical and Chemical Properties

Matrix	Styrene – DVB gel
Functional Groups	Sulfonic Acid
Physical Form	Dark Amber Uniform Translucent Spherical Beads
Ionic Form as Shipped	H ⁺ form
Total Exchange Capacity ^a	≥ 2.0 eq/L (H ⁺ form) ≥ 43.7 kgr/ft ³ (as CaCO ₃)
Water Retention Capacity ^a	46 – 51% (H ⁺ form)
Shipping Weight ^d	785 g/L (49 lb/ft ³)
Bead size distribution ^c	
Particle Diameter ^a	650 ± 50 µm
Uniformity Coefficient ^a	≤ 1.10
Fines Content ^a	< 300µm : 0.5% max
Coarse Beads ^a	> 850µm : 5% max
Whole Uncracked Beads ^a	≥ 95%
Friability	
Average ^a	≥ 500 g/bead
>200 g/bead ^a	≥ 95%
Ionic conversion ^a	≥ 99.7%
Trace Metals, Dry Resin ^a	Na (100); Fe (50); Cu (50); Al (50); Heavy Metals [as Pb] (20) ppm max
Maximum Reversible Swelling ^b	Na ⁺ → H ⁺ : 7%

^a Contractual value

^b Typical value

^c For additional particle size information, please refer to Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

^d As per the backwashed and settled density of the resin, determined by ASTM D-2187

Note: Test methods are available upon request.

Suggested Operating Conditions (Water Treatment)

Maximum Operating Temperature	130°C (265°F)
pH Range	0 – 14
Bed Depth	> 450 mm (1.5 ft)
Flow Rates	
Service/Fast Rinse	12 – 60 m/h (5 – 24 gpm/ft ²)
Service/Condensate Polishing	25 – 150 m/h (10 – 60 gpm/ft ²)
Backwash	See Figure 1
Regeneration/Displacement Rinse	2 – 8 BV/h (0.25 – 1 gpm/ft ³)
Total Rinse Requirement	2 – 3 BV *
Regenerant	1 – 10% H ₂ SO ₄ or 4 – 8% HCl
Temperature	Ambient or up to 60°C (140°F)

* 1 BV (Bed Volume) = 1 m³ solution per m³ resin or 7.5 gals per ft³ resin

Hydraulic Characteristics (Water Treatment)

Figure 1 shows the bed expansion of AMBERJET™ 1500 H Resin as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for AMBERJET 1500 H Resin as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with clear water and a correctly classified bed.

Figure 1: Bed Expansion
Temperature = 25°C (77°F)

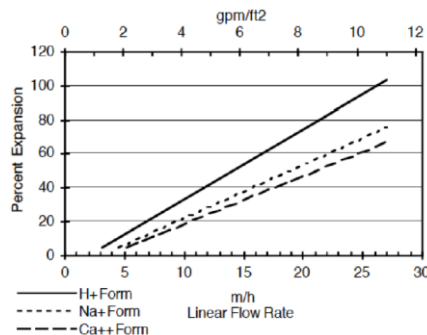
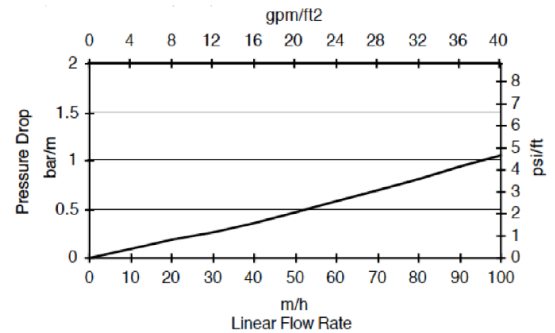


Figure 2: Pressure Drop
Temperature = 20°C (68°F)



For other temperatures use:

$$F_T = F_{77°F} [1 + 0.008 (T_F - 77)], \text{ where } F \equiv \text{gpm/ft}^2$$

$$F_T = F_{25°C} [1 + 0.008 (1.8T_C - 45)], \text{ where } F \equiv \text{m/h}$$

For other temperatures use:

$$P_T = P_{20°C} / (0.026 T_C + 0.48), \text{ where } P \equiv \text{bar/m}$$

$$P_T = P_{68°F} / (0.014 T_F + 0.05), \text{ where } P \equiv \text{psi/ft}$$

Packaging

25 liter bags or 5 cubic feet fiber drums.

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WARNING: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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