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]	$Na^+ \rightarrow H^+$: 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.

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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_2SO_4 or 4 – 8% HCl
Temperature	Ambient or up to 60°C (140°F)

* 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin or 7.5 gals per ft^3 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)

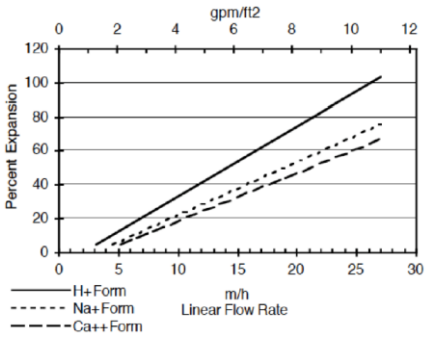
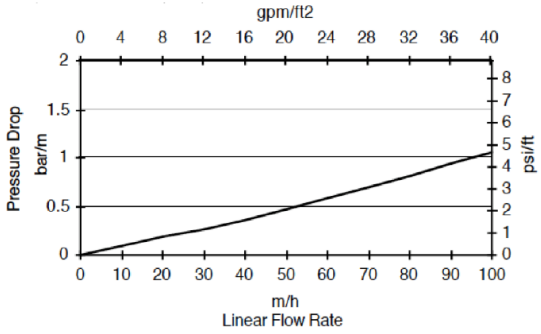


Figure 2: Pressure Drop
Temperature = 20°C (68°F)



For other temperatures use:

$F_T = F_{77°F}[1+ 0.008 (T_{°F} – 77)]$, where F ≡ gpm/ft^2

$F_T = F_{25°C}[1+ 0.008 (1.8T_{°C} – 45)]$, where F ≡ m/h

For other temperatures use:

$P_T = P_{20°C}/ (0.026 T_{°C} + 0.48)$, where P ≡ bar/m

$P_T = P_{68°F}/ (0.014 T_{°F} + 0.05)$, where P ≡ psi/ft

Packaging

25 liter bags or 5 cubic feet fiber drums.

Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

For more information, contact Customer Information Group:

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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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