Product Data Sheet

AMBERLITE™ FPA900UPS Cl Ion Exchange Resin

Uniform Particle Size, High Capacity, Macroporous Strong Base Anion Exchange Resin for Cane Sugar Decolorization

Description

AMBERLITE™ FPA900UPS Cl Ion Exchange Resin is a uniform particle size, macroporous, high capacity, Type I strong base anion resin that has exceptional physical stability, excellent resistance to osmotic shock, and very good organic fouling resistance. It is ideally suited for cane sugar decolorization, offering advantages such as:

- Maximum decolorization efficiency due to the macroporous structure
- Reduced rinsing requirements and sweetwater evaporation costs due to the uniform particle size distribution
- Ready for installation without backwashing
- Less frequent regeneration due to the high capacity
- Potential OPEX savings

Applications

- Cane sugar decolorization

Typical Physical and Chemical Properties

Matrix	Styrene-divinylbenzene copolymer, macroporous
Type	Type I strong base anion
Functional Groups	Quaternary amine
Physical Form	Uniform size, white beads
Ionic Form as Shipped	Cl^-
Total Exchange Capacity [a]	≥ 1.1 eq/L (≥ 24.0 kgr/ft^3 as $CaCO_3$) (Cl^- form)
Water Content [a]	56 – 66% (Cl^- form)
Mean Particle Size [b]	640 ± 50 µm (Cl^- form)
Uniformity Coefficient [a]	≤ 1.1
Whole Beads	95 – 100%
Total Swelling	$Cl^- \rightarrow OH^-$: 15%
Particle Density	1.06 g/mL (Cl^- form)
Shipping Weight	670 g/L (42 lb/ft^3) (Cl^- form)

[a] Contractual value

[b] For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

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Suggested Operating Conditions [a]

Maximum Operating Temperature	
OH^- form	60°C (140°F)
Cl^- form	100°C (212°F)
pH Range	0 – 14
Bed Depth, min.	800 mm (2.6 ft)
Flowrates	
Service / Fast Rinse	5 – 50 m/h (2 – 20 gpm/ft^2)
Backwash	See Figure 1
Co-Current Regeneration / Displacement Rinse	1 – 10 m/h (0.4 – 4 gpm/ft^2)
Counter-Current Regeneration / Displacement Rinse	5 – 20 m/h (2 – 8 gpm/ft^2)
Total Rinse Requirement	5 – 7 BV*
Regenerant	
Concentration (%)	10% NaCl + 0.2 – 0.5% NaOH
Temperature	50 – 70°C (122 – 158°F)

[a] Refer to the brochure Ion Exchange Resins for Cane Sugar Decolorization for additional information (Form No. 177-03556).

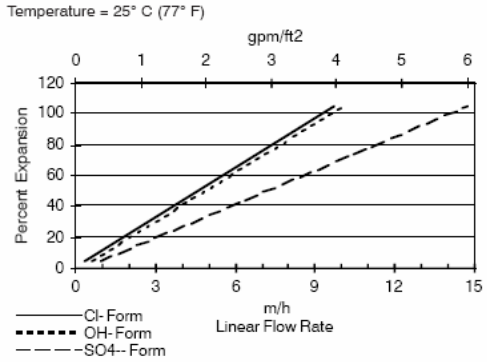
* 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin

Hydraulic Characteristics (Water Treatment)

Bed expansion of AMBERLITE™ FPA900UPS Cl Ion Exchange Resin as a function of backwash flowrate, ionic form, and water temperature is shown in Figure 1.

Pressure drop data for AMBERLITE FPA900UPS Cl as a function of service flowrate and water temperature is shown in Figure 2.

Figure 1: Bed Expansion

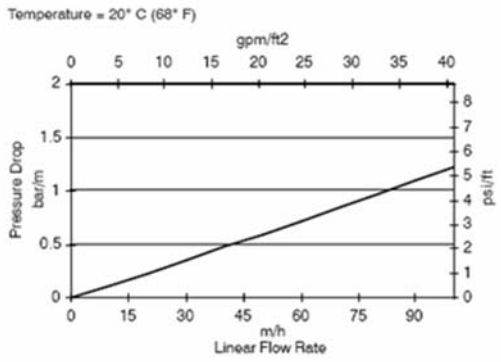


For other temperatures use:

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

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

Figure 2: Pressure Drop



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
- 5-cubic foot 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.

AMBERLITE™ Ion Exchange Resins
Contact Dow Water & Process Solutions:

North America:	1-800-447-4369
Latin America:	(+55) 11-5188-9222
Europe:	+800-3-694-6367
Pacific:	+800 7776 7776
China:	+400 889-0789

www.dowwaterandprocess.com

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