



## 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 <sup>-</sup>
Total Exchange Capacity <sup>a</sup>	≥ 1.1 eq/L (≥ 24.0 kgr/ft <sup>3</sup> as CaCO <sub>3</sub> ) (Cl <sup>-</sup> form)
Water Content <sup>a</sup>	56 – 66% (Cl <sup>-</sup> form)
Mean Particle Size <sup>b</sup>	640 ± 50 μm (Cl <sup>-</sup> form)
Uniformity Coefficient <sup>a</sup>	≤ 1.1
Whole Beads	95 – 100%
Total Swelling	Cl <sup>-</sup> → OH <sup>-</sup> : 15%
Particle Density	1.06 g/mL (Cl <sup>-</sup> form)
Shipping Weight	670 g/L (42 lb/ft <sup>3</sup> ) (Cl <sup>-</sup> form)

<sup>a</sup> Contractual value

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

## Suggested Operating Conditions <sup>a</sup>

Maximum Operating Temperature	
OH <sup>-</sup> form	60°C (140°F)
Cl <sup>-</sup> 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 <sup>2</sup> )
Backwash	See Figure 1
Co-Current Regeneration / Displacement Rinse	1 – 10 m/h (0.4 – 4 gpm/ft <sup>2</sup> )
Counter-Current Regeneration / Displacement Rinse	5 – 20 m/h (2 – 8 gpm/ft <sup>2</sup> )
Total Rinse Requirement	
	5 – 7 BV*
Regenerant	
Concentration (%)	10% NaCl + 0.2 – 0.5% NaOH
Temperature	50 – 70°C (122 – 158°F)

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

\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin

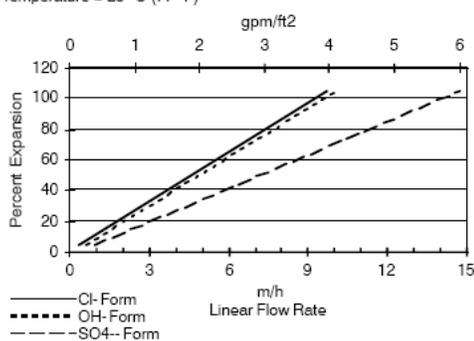
## Hydraulic Characteristics (Water Treatment)

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**

Temperature = 25° C (77° F)



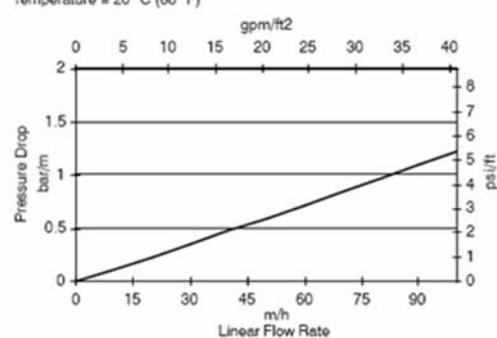
**For other temperatures use:**

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

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

**Figure 2: Pressure Drop**

Temperature = 20° C (68° F)



**For other temperatures use:**

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

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

## Packaging

- 25-liter bags
- 5-cubic foot fiber drums

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

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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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