



Product Data Sheet

AMBERLITE™ FPA91 Cl Ion Exchange Resin

Food-grade, Macroporous, Strong Base Anion Exchange Resin

Description

AMBERLITE™ FPA91 Cl Ion Exchange Resin is a macroporous, Type II strong base anion resin with a crosslinked polystyrene matrix for use in the nutrition and bioprocessing industries.

Nutrition Applications

AMBERLITE™ FPA91 Cl Ion Exchange Resin has been specially designed for use in mixed beds for the final polishing of fructose syrups. When paired with either AMBERLITE™ FPC22 H or AMBERLITE™ FPC23 H Ion Exchange Resins, AMBERLITE™ FPA91 Cl (used in the OH-form) removes trace contaminants such as weak organic acids and nitrogen-containing compounds that can cause odors, off-flavors, and color stability problems with stored syrups.

The macroporous structure of AMBERLITE™ FPA91 Cl permits the removal of large, soluble organic molecules typically found in processed liquid sugar solutions and it also imparts excellent resistance to mechanical and osmotic shock.

Bioprocessing Applications

AMBERLITE™ FPA91 Cl Ion Exchange Resin is the resin of choice for many decolorization processes of high molecular weight organic color bodies found in natural products extracts as well as in some antibiotics fermentation broths.

Applications

- Nutrition applications
 - Fructose mixed bed polishing
- Bioprocessing applications
 - Decolorization of natural product extracts or antibiotic fermentation broths

Typical Properties

Physical Properties

Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong base anion, Type II
Functional Group	Dimethylethanolamine
Physical Form	Amber, opaque, spherical beads

Chemical Properties

Ionic Form as Shipped	Cl ⁻
Total Exchange Capacity	≥ 1.0 eq/L
Water Retention Capacity	54 – 61%

Particle Size [§]

Particle Diameter	530 – 800 µm
< 300 µm	≤ 2.5%
> 1180 µm	≤ 5.0%

Stability

Swelling	Cl ⁻ → OH ⁻ : 15%
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Density

Shipping Weight	700 g/L
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[§] For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 177-01775).

Suggested Operating Conditions

Maximum Operating Temperature	35°C (95°F)
Bed Depth, min.	700 mm (2.3 ft)
Flowrates	
Service	5 – 20 BV*/h
Backwash	See Figure 1
Regeneration	2 – 8 BV/h
Slow Rinse	Regeneration flowrate for 2 BV
Fast Rinse (if applicable)	Service flowrate for 4 – 8 BV
Contact Time	
Regeneration	≥ 30 – 45 minutes
Regenerant	
Concentration	NaOH 2 – 4%
Level	40 – 100 kg/m ³ (2.5 – 6.3 lb/ft ³)

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

Hydraulic Characteristics

Estimated bed expansion of AMBERLITE™ FPA91 Cl Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AMBERLITE™ FPA91 Cl as a function of service flowrate and viscosity is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean feed and a well-classified bed.

Figure 1: Backwash Expansion

Temperature = 5 – 60°C (41 – 140°F)

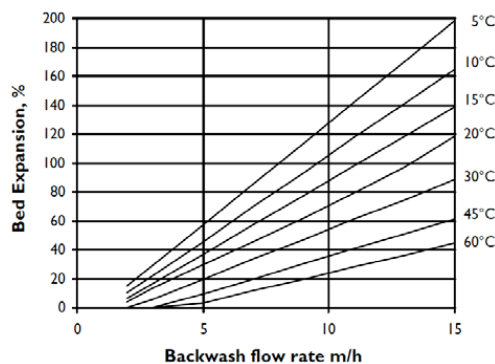
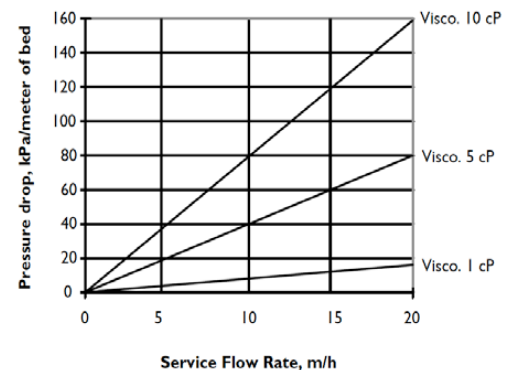


Figure 2: Pressure Drop

Viscosity = 1 – 10 cP



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Please be aware of the following:

- **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.

Have a question? Contact us at:

www.dupont.com/water/contact-us

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