



AMBERLITE™ FPA98 CI Ion Exchange Resin

Food- and Biopharmaceutical-grade, Acrylic, Macroporous, Strong Base Anion Exchange Resin for Cane Sugar Decolorization and Biopharmaceutical Processing

Description

AMBERLITE™ FPA98 CI Ion Exchange Resin has been specially designed for the decolorization of liquid sugar syrups. Ion exchange based decolorization technology has been used more effectively and economically than carbon or bone char based technologies. Sugar refiners, soft drink bottlers, and biopharmaceutical manufacturers around the world have installed AMBERLITE™ FPA98 CI to successfully decolorize heavily-colored solutions.

AMBERLITE™ FPA98 CI is an acrylic, macroporous, Type I strong base anion resin.

Cane Sugar Decolorization

AMBERLITE™ FPA98 CI Resin is an excellent choice for cane sugar decolorization, offering advantages such as:

- Specially designed for the decolorization of highly colored (> 500 ICUMSA) liquid sugar syrups
- Excellent desorption of the organic color bodies during regeneration, reducing the fouling associated with other types of resin such as those based on crosslinked polystyrene
- Excellent physical stability and resistance to osmotic shock

Acrylic AMBERLITE™ FPA98 CI resin can be used as a single component for gross decolorization for highly colored solutions or preceding a styrenic resin such as AMBERLITE™ FPA900UPS CI, AMBERLITE™ FPA90RF CI, or AMBERLITE™ FPA90 CI Ion Exchange Resins, where the styrenic resin is used as a polisher for very low color final products.

Biopharmaceutical Processing

AMBERLITE™ FPA98 CI Resin is an excellent resin for the decolorization of high molecular weight organic color bodies in many bioprocessing applications such as natural product extraction and recovery of antibiotics from fermentation broth, offering advantages such as:

- Effective adsorption of high molecular weight organics
- Low organic fouling properties, typical of an acrylic matrix, due to excellent desorption of the organic color bodies during regeneration

Applications

- Cane sugar decolorization
- Bioprocessing decolorization
- Heparin purification

Typical Properties

Physical Properties	
Copolymer	Crosslinked acrylic
Matrix	Macroporous
Type	Strong base anion, Type I
Functional Group	Trimethylammonium
Physical Form	White, opaque, spherical beads
Chemical Properties	
Ionic Form as Shipped	Cl ⁻
Total Exchange Capacity	≥ 0.8 eq/L
Water Retention Capacity	66 – 72%
Particle Size §	
Particle Diameter	630 – 850 µm
< 300 µm	≤ 1.0%
> 1180 µm	≤ 5.0%
Density	
Shipping Weight	700 g/L

§ 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 (Cl ⁻ form)	80°C (176°F)
Bed Depth, min.	1000 mm (3.3 ft)
Flowrates	
Service	2 – 4 BV*/h (or up to 8 BV/h)
Sweeten-off	Service flowrate for 1.5 – 2 BV
Backwash	See Figure 1
Regeneration	2 BV/h
Slow Rinse	2 BV/h
Sweeten-on	Service flowrate for 1 BV
Contact Time	
Regeneration	≥ 45 – 60 minutes
Displacement Rinse	≥ 60 minutes
Total Rinse Requirement	5 BV
Regenerant	
Concentration	NaCl + NaOH
Level, 100% basis	10% NaCl 0.2% NaOH
Co-current	180 – 200 kg/m ³ (11.3 – 12.5 lb/ft ³)
Counter-current	150 kg/m ³ (9.4 lb/ft ³)
Temperature	25 – 70°C (77 – 158°F)

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

Hydraulic Characteristics

Bed expansion of AMBERLITE™ FPA98 CI Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Pressure drop data for AMBERLITE™ FPA98 CI 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)

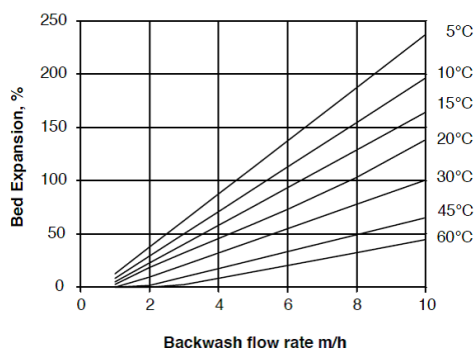
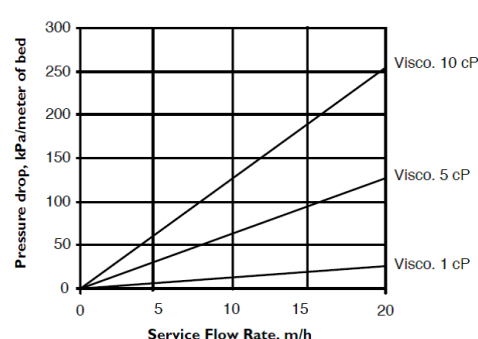


Figure 2: Pressure Drop

Viscosity = 1 – 10 cP



Limits of Use

For specific pharmaceutical and food processing applications, it is recommended that all potential users seek advice from DuPont in order to determine the proper resin selection and usage.

Product Stewardship

DuPont 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 DuPont products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

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

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.



info@lenntech.com Tel. +31-152-610-900
www.lenntech.com Fax. +31-152-616-289

All information set forth herein is for informational purposes only. This information is general information and may differ from that based on actual conditions. Customer is responsible for determining whether products and the information in this document are appropriate for Customer's use and for ensuring that Customer's workplace and disposal practices are in compliance with applicable laws and other government enactments. The product shown in this literature may not be available for sale and/or available in all geographies where DuPont is represented. The claims made may not have been approved for use in all countries. Please note that physical properties may vary depending on certain conditions and while operating conditions stated in this document are intended to lengthen product lifespan and/or improve product performance, it will ultimately depend on actual circumstances and is in no event a guarantee of achieving any specific results. DuPont assumes no obligation or liability for the information in this document. References to "DuPont" or the "Company" mean the DuPont legal entity selling the products to Customer unless otherwise expressly noted. NO WARRANTIES ARE GIVEN; ALL IMPLIED WARRANTIES OF MERCHANTABILITY OR FITNESS FOR A PARTICULAR PURPOSE ARE EXPRESSLY EXCLUDED. No freedom from infringement of any patent or trademark owned by DuPont or others is to be inferred.

DuPont™, the DuPont Oval Logo, and all trademarks and service marks denoted with ™, SM or ® are owned by affiliates of DuPont de Nemours Inc. unless otherwise noted. © 2019 DuPont.

