



Product Data Sheet

AmberLite™ FPC23 H Ion Exchange Resin

Food-grade, High Capacity, Macroporous, Strong Acid Cation Exchange Resin

Description

AmberLite™ FPC23 H Ion Exchange Resin is a macroporous, high capacity, strong acid cation resin designed for the deashing of corn syrups and the softening of beet sugar syrups. It is recommended for use where severe conditions exist such as those present in the Quentin process to soften beet sugar juices.

The black color of AmberLite™ FPC23 H makes it easy to confirm a clean separation from AmberLite™ FPA91 OH Ion Exchange Resin when used in polishing mixed bed applications.

AmberLite™ FPC23 H has exhibited a very efficient and economical use of acid regeneration, as well.

Applications

- Corn and starch sweetener deashing
- Beet sugar softening
- Sweetener mixed bed polishing

Typical Properties

Physical Properties

Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong acid cation
Functional Group	Sulfonate
Physical Form	Black, opaque, spherical beads

Chemical Properties

Ionic Form as Shipped	H ⁺
Total Exchange Capacity	≥ 2.20 eq/L
Water Retention Capacity	44 – 53%

Particle Size §

Particle Diameter	580 – 800 µm
< 425 µm	≤ 5.0%
> 1180 µm	≤ 5.0%

Stability

Swelling	Na ⁺ → H ⁺ : 10%
----------	--

Density

Bulk Density as Shipped	830 g/L
-------------------------	---------

§ For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 45-D00954-en).

Suggested Operating Conditions

Maximum Operating Temperature	135°C (275°F)	
pH Range	0 – 14	
Bed Depth, min.	700 mm (2.3 ft)	
Flowrates		
Service	5 – 20 BV*/h	
Regeneration		
HCl	2 – 4 BV/h	
H ₂ SO ₄	4 – 12 BV/h	
Backwash	See Figure 1	
Slow Rinse	Regeneration flowrate for 2 BV	
Fast Rinse (if applicable)	Service flowrate for 2 – 4 BV	
Contact Time		
Regeneration	≥ 30 – 45 minutes	
Displacement Rinse	≥ 30 – 45 minutes	
Total Rinse Requirement	2 – 5 BV	
Regenerant	HCl	H ₂ SO ₄
Concentration	4 – 10%	1 – 5%
Level, 100% basis	45 – 150 kg/m ³ (2.8 – 9.4 lb/ft ³)	50 – 200 kg/m ³ (3.1 – 12.5 lb/ft ³)
Temperature, max.	93°C (200°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™ FPC23 H Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Pressure drop data for AmberLite™ FPC23 H as a function of service flowrate and water temperature is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean water and a well-classified bed.

Figure 1: Backwash Expansion

Temperature = 10 – 90°C (50 – 194°F)

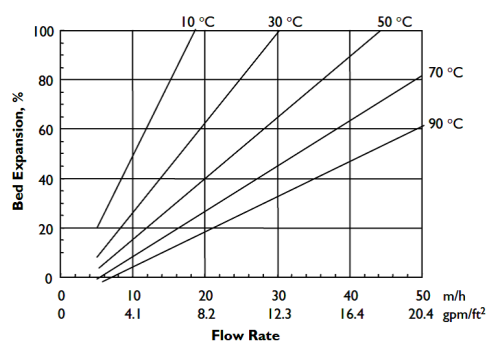
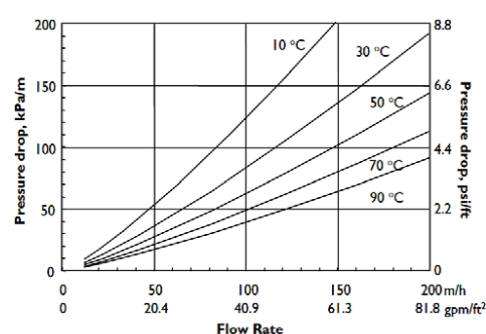


Figure 2: Pressure Drop

Temperature = 10 – 90°C (50 – 194°F)



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.

Have a question? Contact us at:

www.dupont.com/water/contact-us

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.

© 2023 DuPont. 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.

