Product Data Sheet

AMBERLITE™ FPA42 Cl Ion Exchange Resin

Food-grade, Gel, Strong Base Anion Exchange Resin

Description

AMBERLITE™ FPA42 Cl Ion Exchange Resin is a high-capacity, uniform particle size, gel, Type I strong base anion exchanger. It is intended for general demineralization and deashing in which the risk of fouling from colored bodies and organics is relatively low.

The uniformity and mean particle size of AMBERLITE™ FPA42 Cl have been optimized for use in equipment including mixed beds. AMBERLITE™ FPA42 Cl can be directly substituted for conventional gel anion exchange resin in new equipment and in rebeds of existing demineralizers.

Applications

- Sweetener deashing
- Demineralization

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Strong base anion, Type I
Functional Group	Trimethylammonium
Physical Form	Amber, translucent, spherical beads
Chemical Properties	
Ionic Form as Shipped	Cl^-
Total Exchange Capacity	≥ 1.30 eq/L
Water Retention Capacity	49 – 55%
Particle Size §	
Particle Diameter	600 – 800 µm
Uniformity Coefficient	≤ 1.25
< 425 µm	≤ 0.5%
> 850 µm	≤ 5.0%
Stability	
Swelling	$Cl^- \rightarrow OH^-$: 30%
Density	
Particle Density	1.06 – 1.08 g/mL
Shipping Weight	670 g/L

§ 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

Bed Depth, min.	800 mm (2.6 ft)
Flowrates	
Service	5 – 50 BV*/h
Linear Velocity	≤ 60 m/h
Backwash	See Figure 1
Slow Rinse	Regeneration flowrate for 2 BV
Fast Rinse (if applicable)	Service flowrate for 3 – 6 BV
Contact Time	
Regeneration	≥ 20 minutes
Regenerant	NaOH
Concentration	2 – 5%
Level	40 – 100 kg/m^3 (2.5 – 6.3 lb/ft^3)

* 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin or 7.5 gal per ft^3 resin

Hydraulic Characteristics

Estimated bed expansion of AMBERLITE™ FPA42 Cl Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop (in water) for AMBERLITE™ FPA42 Cl as a function of service flowrate and 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 = 5 – 40°C (41 – 104°F)

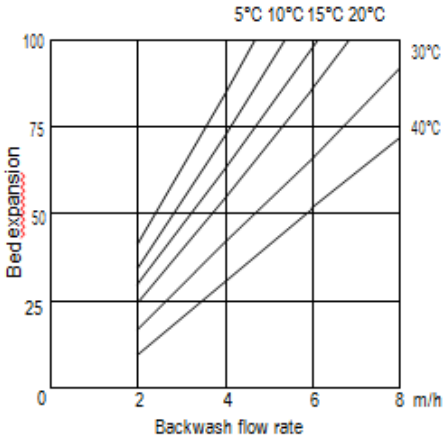
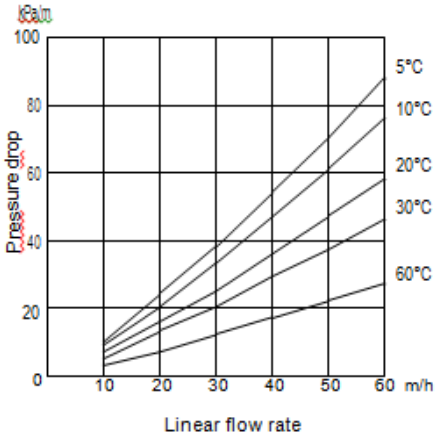


Figure 2: Pressure Drop

Temperature = 5 – 60°C (41 – 140°F)



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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.

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