



## Product Data Sheet

### DuPont™ AmberLite™ FPA52RF Ion Exchange Resin

Food-grade, Reduced-Fines, Macroporous, Weak Base Anion Exchange Resin

#### Description

DuPont™ AmberLite™ FPA52RF Ion Exchange Resin is a high-capacity, polystyrene, weak base anion exchanger. It has an outstanding mechanical and osmotic stability, making it suitable for the treatment of solutions with relatively high dissolved solids, such as demineralization of food solutions such as gelatin, citrus juices, sugar juices, sucrose, glucose, lactose, and others.

AmberLite™ FPA52RF is highly efficient for the uptake of strong acids (e.g., HCl and H<sub>2</sub>SO<sub>4</sub>) when following a strong acid cation exchanger in the H-form. Its macroporous structure facilitates excellent adsorption and desorption of organic matter.

RF-grade AMBERLITE™ FPA52RF has reduced fines, which improves system pressure drop and lowers resin losses during backwash.

#### Applications

- Sweetener deashing
- Juice demineralization
- Gelatin demineralization
- Juice deacidification

#### Typical Properties

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##### Physical Properties

Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Weak base anion
Functional Group	Secondary amine (≥ 85%)
Physical Form	Off-white, opaque, spherical beads

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##### Chemical Properties

Ionic Form as Shipped	Free base (FB)
Total Exchange Capacity	≥ 1.60 eq/L
Water Retention Capacity	40 – 50%

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##### Particle Size <sup>§</sup>

Particle Diameter	600 – 800 µm
Uniformity Coefficient	≤ 1.5
< 300 µm	≤ 0.2%

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##### Stability

Swelling	FB → HCL ≤ 25%
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##### Density

Particle Density	1.035 – 1.065 g/mL
Shipping Weight	660 g/L

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<sup>§</sup> 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 (FB-form)	90°C (194°F)		
Flowrates			
Service	2 – 8 BV*/h		
Backwash	See Figure 1		
Slow Rinse	Regeneration flowrate for 2 BV		
Fast Rinse	Service flowrate for 4 – 8 BV		
Contact Time			
Regeneration	≥ 30 – 45 minutes		
Regenerant	<b>NaOH</b>	<b>Na<sub>2</sub>CO<sub>3</sub></b>	<b>NH<sub>3</sub></b>
Concentration	2 – 6%	5 – 8%	2 – 3%
Level	40 – 80 kg/m <sup>3</sup> (2.5 – 5 lb/ft <sup>3</sup> )	60 – 130 kg/m <sup>3</sup> (3.8 – 8.1 lb/ft <sup>3</sup> )	40 – 80 kg/m <sup>3</sup> (2.5 – 5 lb/ft <sup>3</sup> )

\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> resin or 7.5 gal per ft<sup>3</sup> resin

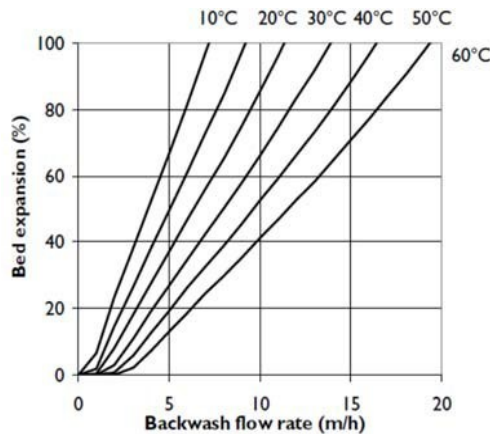
## Hydraulic Characteristics

Estimated bed expansion of DuPont™ AmberLite™ FPA52RF Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLite™ FPA52RF 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.

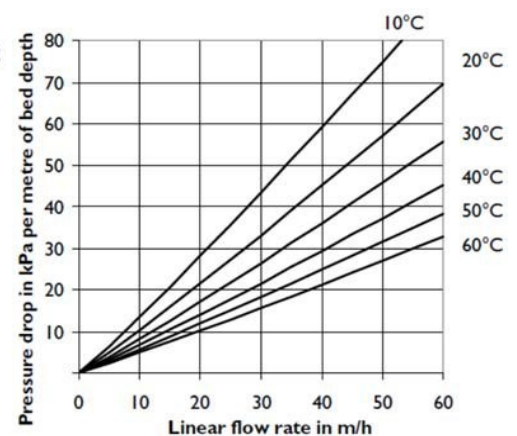
**Figure 1: Backwash Expansion**

Temperature = 10 – 60°C (50 – 140°F)



**Figure 2: Pressure Drop**

Temperature = 10 – 60°C (50 – 140°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.

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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:

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