



## Product Data Sheet

### AmberLite™ FPA66 Ion Exchange Resin

Macroporous, Weak Base Anion Resin for Sweetener Applications

#### Description

AmberLite™ FPA66 Ion Exchange Resin is a macroporous, weak base anion resin for use in deashing sweeteners to produce low-conductivity syrups or deashing/demineralizing fruit juices, other beverages, and food additives. The macroporous matrix provides excellent mechanical strength and high operating capacity.

#### Applications

- Corn and starch sweetener deashing
- Juice deacidification
- Whey, gelatin, and glycerin deashing and decolorizing

#### Typical Properties

<b>Physical Properties</b>	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Weak base anion
Functional Group	Tertiary amine
Physical Form	White to yellow, opaque, spherical beads
<b>Chemical Properties</b>	
Ionic Form as Shipped	Free base (FB)
Total Exchange Capacity	≥ 1.6 eq/L
Weak Base Capacity	≥ 1.35 eq/L
Water Retention Capacity	40 – 46%
<b>Particle Size</b> §	
Particle Diameter	300 – 1200 µm
< 350 µm	≤ 8%
> 1000 µm	≤ 5%
<b>Stability</b>	
Whole Beads	≥ 90%
Swelling	FB → HCl: 20%
<b>Density</b>	
Particle Density	1.04 g/mL
Shipping Weight	640 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 (OH <sup>-</sup> form)	60°C (140°F)		
pH Range	0 – 7		
Bed Depth, min.	910 mm (3.0 ft)		
Flowrates			
Service	2 – 4 BV*/h		
Backwash	See Figure 1		
Fast Rinse (if applicable)	2 – 10 BV/h		
Contact Time			
Regeneration	≥ 30 – 45 minutes		
Displacement Rinse	≥ 30 – 45 minutes		
Total Rinse Requirement	4 – 6 BV		
Regenerant	NaOH <sup>†</sup>	Na <sub>2</sub> CO <sub>3</sub>	NH <sub>4</sub> OH
Concentration	4%	5%	5%
Level, 100% basis <sup>‡</sup>	80 – 96 kg/m <sup>3</sup> (5 – 6 lb/ft <sup>3</sup> )	112 – 128 kg/m <sup>3</sup> (7 – 8 lb/ft <sup>3</sup> )	80 – 96 kg/m <sup>3</sup> (5 – 6 lb/ft <sup>3</sup> )
Temperature, max.	60°C (140°F)	60°C (140°F)	60°C (140°F)

\* 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

<sup>†</sup> NaOH is recommended.

<sup>‡</sup> Regeneration level may be lower for counter-current regeneration systems.

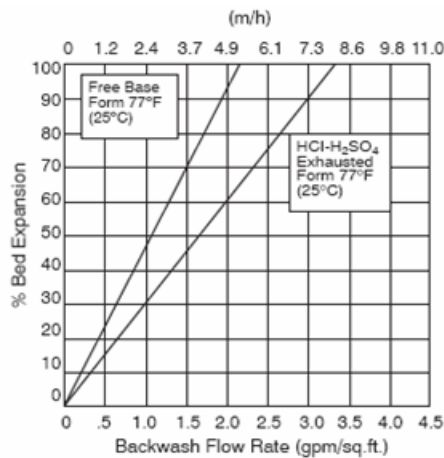
## Hydraulic Characteristics

Bed expansion of AmberLite™ FPA66 Ion Exchange Resin as a function of backwash flowrate at 25°C (77°F) is shown in Figure 1. The flowrate necessary to achieve a desired bed expansion for other water temperatures can be calculated with the provided equations.

Pressure drop data for AmberLite™ FPA66 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.

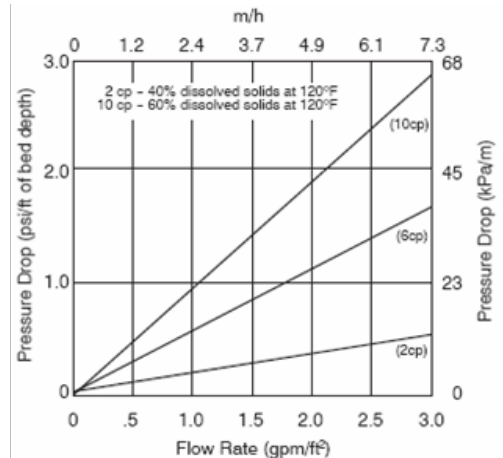
**Figure 1: Backwash Expansion**

Temperature = 25°C (77°F)



**Figure 2: Pressure Drop**

Viscosity = 2 – 10 cP



**For other temperatures use:**

$$F_T = F_{25^\circ\text{C}} [1 + 0.008 (1.8T_{\text{C}} - 45)], \text{ where } F \equiv \text{m/h}$$

$$F_T = F_{77^\circ\text{F}} [1 + 0.008 (T_{\text{F}} - 77)], \text{ where } F \equiv \text{gpm/ft}^2$$

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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:

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