



Product Data Sheet

AMBERLITE™ FPA52 Ion Exchange Resin

Food-grade, Macroporous, Weak Base Anion Exchange Resin

Description

AMBERLITE™ FPA52 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™ FPA52 is highly efficient for the uptake of strong acids (e.g., HCl and H₂SO₄) when following a strong acid cation exchanger in the H-form. Its macroporous structure facilitates excellent adsorption and desorption of organic matter.

Applications

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

Typical Properties

| Physical Properties | |
|----------------------------|------------------------------------|
| Copolymer | Styrene-divinylbenzene |
| Matrix | Macroporous |
| Type | Weak base anion |
| Functional Group | Secondary amine (≥ 80%) |
| Physical Form | Off-white, opaque, spherical beads |

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

| Particle Size § | |
|------------------------|--------------|
| Particle Diameter | 580 – 780 µm |
| Uniformity Coefficient | ≤ 1.8 |
| < 355 µm | ≤ 3.0% |

| Stability | |
|------------------|----------------|
| Swelling | FB → HCl ≤ 25% |

| Density | |
|------------------|--------------------|
| Particle Density | 1.035 – 1.065 g/mL |
| Shipping Weight | 660 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 (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 (if applicable) | Service flowrate for 4 – 8 BV | | |
| Contact Time | | | |
| Regeneration | ≥ 30 – 45 minutes | | |
| Regenerant | | | |
| Concentration | NaOH | Na ₂ CO ₃ | NH ₃ |
| Level | 2 – 6% | 5 – 8% | 2 – 3% |
| | 40 – 80 kg/m ³ | 60 – 130 kg/m ³ | 40 – 80 kg/m ³ |
| | (2.5 – 5 lb/ft ³) | (3.8 – 8.1 lb/ft ³) | (2.5 – 5 lb/ft ³) |

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

Hydraulic Characteristics

Estimated bed expansion of AMBERLITE™ FPA52 Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AMBERLITE™ FPA52 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 – 60°C (41 – 140°F)

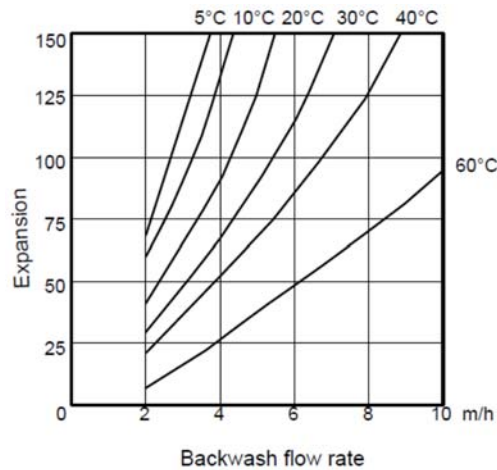
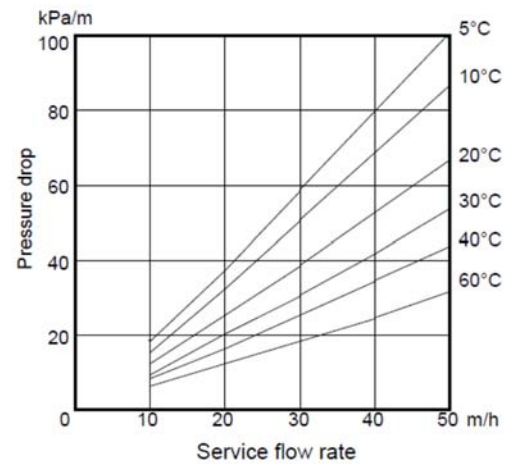


Figure 2: Pressure Drop

Temperature = 5 – 60°C (41 – 140°F)



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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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