

PRODUCT DATA SHEET

AMBERLITE™ FPA51
Food Grade Weak Base Anion Exchanger

For the De-ashing of Starch based Sweeteners and Biopharmaceutical Applications

FOOD PROCESSING

AMBERLITE FPA51 has been specifically designed for the deashing and deacidification of liquid food streams including starch based sweeteners. AMBERLITE FPA51 has been sized to be used both in the fixed bed system commonly used in the corn sweetener industry as well as moving bed systems and polishing mixed bed. It is the product of choice for the deashing and decolorization of glucose, fructose and related starch based sweeteners and derivatives as well as gelatin and other food process streams such as fruit juices.

BIOPHARMACEUTICAL PROCESSING

AMBERLITE FPA51: Today, a number of different antibiotic classes have been isolated, chemically modified and are used extensively by physicians in treating infectious diseases. As most traditional antibiotics were derived from yeast or bacteria, their large scale production is based on fermentation processes.

AMBERLITE FPA51 is one of the solution provided for decolorization of organic color bodies in those downstream bioprocesses.

PROPERTIES AND SUGGESTED OPERATING CONDITIONS

AMBERLITE FPA51 is a macroreticular, weakly basic anionic exchange resin containing a tertiary amine functionality on a macroreticular crosslinked polystyrene matrix. Its high level of porosity gives AMBERLITE FPA51 an excellent combination of

physical stability and high operating efficiency resulting in long process cycle times as compared to products having a higher static volume capacity. This porous network also provides a more complete adsorption and desorption of large organic molecules resulting in superior color removal compared to other weakly basic anionic exchange resins.

PROPERTIES

Matrix _____	Crosslinked polystyrene
Functional groups _____	-NR ₂ : at least 85 %
Physical form _____	Opaque spherical beads
Ionic form as shipped _____	Free base (FB)
Total exchange capacity ⁽¹⁾ _____	≥ 1.3 eq/L (FB form)
Moisture holding capacity ⁽¹⁾ _____	54 to 60 % (FB form)
Shipping weight _____	660 g/L
Harmonic mean size _____	0.490 - 0.690 mm
Fines content ⁽¹⁾ _____	< 0.300 mm : 1.0 % max
Irreversible swelling _____	FB → Cl ⁻ : 8 %
Reversible swelling _____	FB → Cl ⁻ : 25 %

⁽¹⁾ Contractual value
Test methods available upon request

SUGGESTED OPERATING CONDITIONS

Maximum operating temperature range _____	100 °C
Minimum bed depth _____	700 mm
Service flow rate _____	2 to 6 BV*/h depending on syrup concentration
Regenerant _____	NaOH
Regenerant low rate _____	1 to 2 BV/h
Regenerant concentration _____	4%
Regenerant level _____	60 g/L _R
Minimum contact time _____	30 minutes
Slow rinse _____	2 BV at regeneration flow rate
Fast rinse _____	5 to 10 BV at service flow rate with condensate or softened water

* 1 BV (Bed Volume) = 1 m³ solution per m³ resin

FOOD PROCESSING

As governmental regulations vary from country to country, it is recommended that potential users seek advice from their Rohm and Haas representative in order to determine the best resin choice, optimum operating and regeneration conditions.

HYDRAULIC CHARACTERISTICS

Figure 1 shows the bed expansion of AMBERLITE FPA51 as a function of backwash flow rate and water temperature.

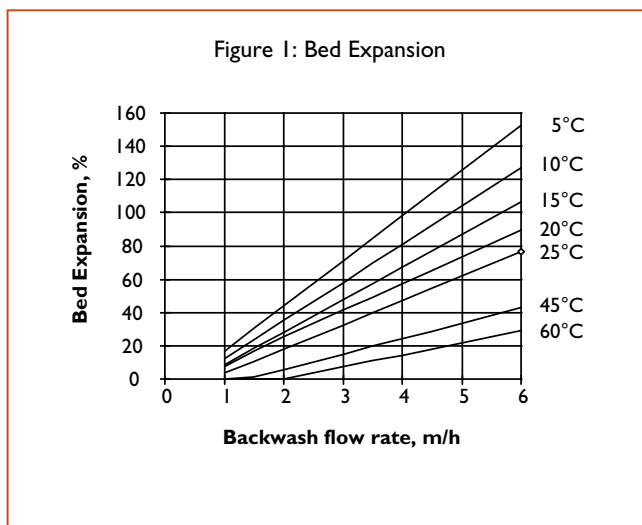
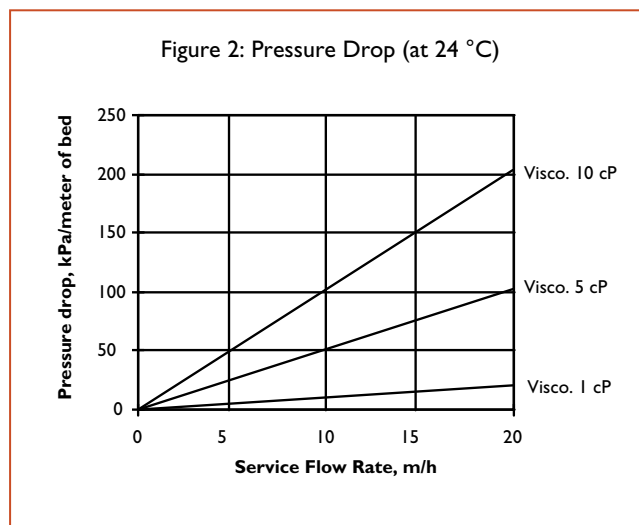


Figure 2 shows the pressure drop data for AMBERLITE FPA51 as a function of service flow rate and viscosity of the solution to be treated.

Conversion Factors:

- 1 kPa/m equals 0.0442 psi/ft
- 1 m/h equals 0.41 USgpm/ft²



All our products are produced in ISO 9001 certified manufacturing facilities.

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Ion exchange resins and polymeric adsorbents, as produced, contain by-products resulting from the manufacturing process. The user must determine the extent to which organic by-products must be removed for any particular use and establish techniques to assure that the appropriate level of purity is achieved for that use. The user must ensure compliance with all prudent safety standards and regulatory requirements governing the application. Except where specifically otherwise stated, Rohm and Haas Company does not recommend its ion exchange resins or polymeric adsorbents, as supplied, as being suitable or appropriately pure for any particular use. Consult your Rohm and Haas technical representative for further information. Acidic and basic regenerant solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. Nitric acid and other strong oxidising agents can cause explosive type reactions when mixed with Ion Exchange resins. Proper design of process equipment to prevent rapid buildup of pressure is necessary if use of an oxidising agent such as nitric acid is contemplated. Before using strong oxidising agents in contact with Ion Exchange Resins, consult sources knowledgeable in the handling of these materials.

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