

PRODUCT DATA SHEET

**AMBERLITE™ FPA90 Cl**  
**Food Grade Strong Base Anion Exchanger**

For the Decolorization of Sucrose Syrups and Biopharmaceutical Applications

**FOOD PROCESSING**

AMBERLITE FPA90 Cl has been specially designed for the decolorization of liquid sugar syrups and has been successfully used by sugar refiners and soft drinks bottlers around the world to decolorize sucrose solutions.

Ion exchange based decolorization technology has proven more effective and economical than carbon or bone char based technologies.

AMBERLITE FPA90 Cl can be used as a single component for or in combination with AMBERLITE FPA98 Cl.

**BIOPHARMACEUTICAL PROCESSING**

AMBERLITE FPA90 Cl is an excellent resin of choice for decolorization of high molecular weight organic color bodies in many bioprocessing applications such as natural product extraction and, recovery of antibiotics from fermentation broth. It is commonly used in aminoglycoside purification bioprocess as well as in macrolide antibiotics processes like erythromycin, and Tylosin, the latter being primary used in animal health. Derivatives of erythromycin are particularly useful in treating respiratory infections. These include Clarithromycin and Azithromycin.

Combination of AMBERCHROM™ CG chromatographic resins and/or AMBERLITE FPC3500 with AMBERLITE FPA90 Cl allows higher level of purity of antibiotics thanks to the decolorization capabilities of the latter either in pre- or post-purification step. (Vancomycin broth decolorization).

**PROPERTIES AND SUGGESTED OPERATING CONDITIONS**

AMBERLITE FPA90 Cl is a macroreticular anionic exchange resin containing a quaternary amine function on a crosslinked polystyrene matrix. The macroreticular structure has large pores. This feature combined with the

strongly basic ion exchange sites and aromatic polymer backbone permits the removal of large soluble organic molecules typically found in processed liquid sugar solutions.

In addition, the macroreticular structure imparts superior resistance to mechanical and osmotic shock.

**PROPERTIES**

Matrix _____	Crosslinked polystyrene
Functional groups _____	Quaternary ammonium
Physical form _____	Ivory beads
Ionic form as shipped _____	Chloride
Total exchange capacity <sup>[1]</sup> _____	≥ 1.0 eq/L (Cl <sup>-</sup> form)
Moisture holding capacity <sup>[1]</sup> _____	58 to 64 % (Cl <sup>-</sup> form)
Shipping weight _____	700 g/L
Harmonic mean size _____	0.650 - 0.820 mm
Fine contents <sup>[1]</sup> _____	< 0.300 mm : 0.5 % max
Maximum reversible swelling _____	Cl <sup>-</sup> → OH <sup>-</sup> : about 25 %

<sup>[1]</sup> Contractual value  
 Test methods available upon request

**SUGGESTED OPERATING CONDITIONS**

Maximum operating temperature _____	80°C (Cl form)
Minimum bed depth _____	1000 mm
Service flow rate _____	2 to 4 BV*/h
Regenerant _____	NaCl (10 %) + NaOH (0.2 – 0.5 %)
Regenerant flow rate _____	2 to 4 BV/h
Regenerant level _____	160 to 240 g/L
Minimum contact time _____	60 minutes
Regenerant temperature _____	50 to 70 °C
Slow rinse _____	2 BV at 2 to 4 BV/h
Fast rinse _____	4 to 8 BV up to 12 BV/h

\* 1 BV (Bed Volume) = 1 m<sup>3</sup> solution per m<sup>3</sup> 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 FPA90 Cl as a function of backwash flow rate and water temperature.

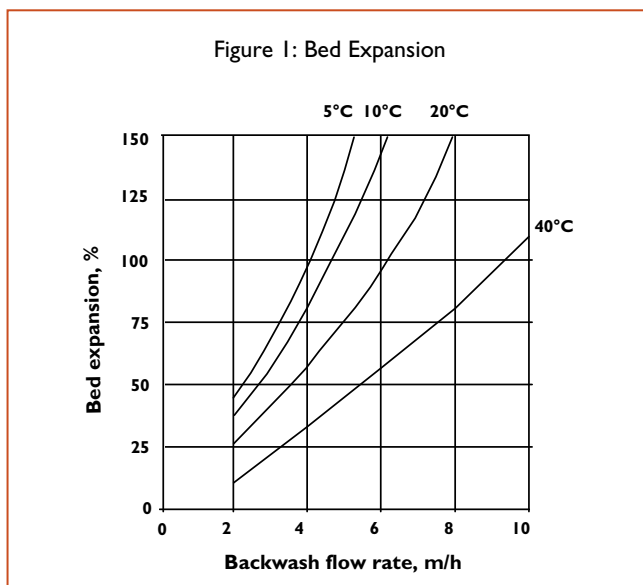
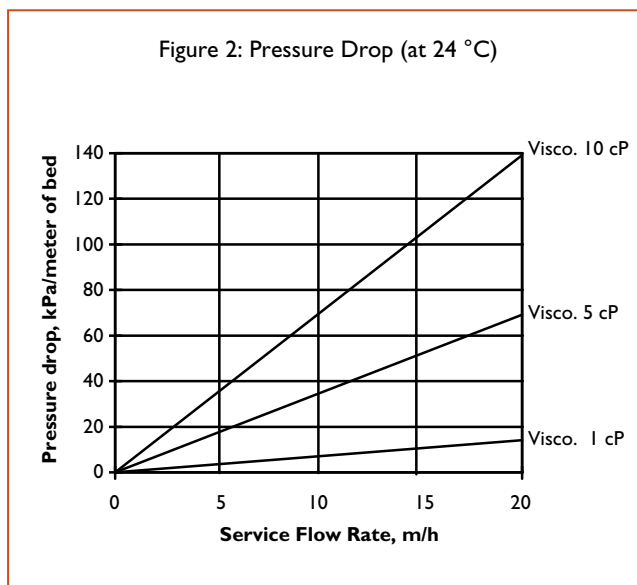


Figure 2 shows the pressure drop data for AMBERLITE FPA90 Cl as a function of service flow rate and viscosity of the solution to be treated.

### Conversion Factors:

- 1 kPa/m equals 0.0442 psi/ft
- 1 m/h equals 0.41 USgpm/ft<sup>2</sup>



**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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