ROHM AND HAAS | Beverages and Nutrition

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 [1]	≥ 1.0 eq/L (Cl^- form)
Moisture holding capacity [1]	58 to 64 % (Cl^- form)
Shipping weight	700 g/L
Harmonic mean size	0.650 - 0.820 mm
Fine contents [1]	< 0.300 mm : 0.5 % max
Maximum reversible swelling	$Cl^- \rightarrow OH^-$: about 25 %

[1] *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^3 solution per m^3 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^2

Figure 1: Bed Expansion

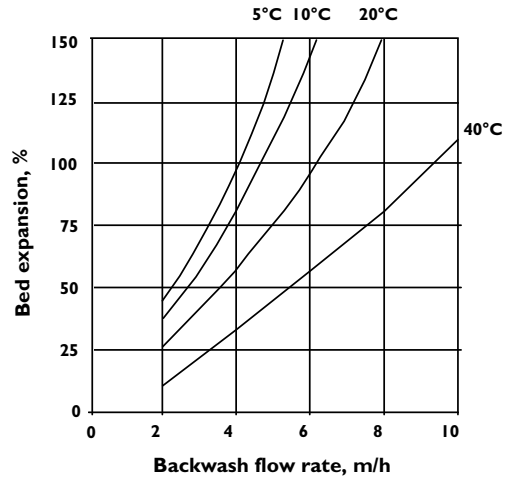
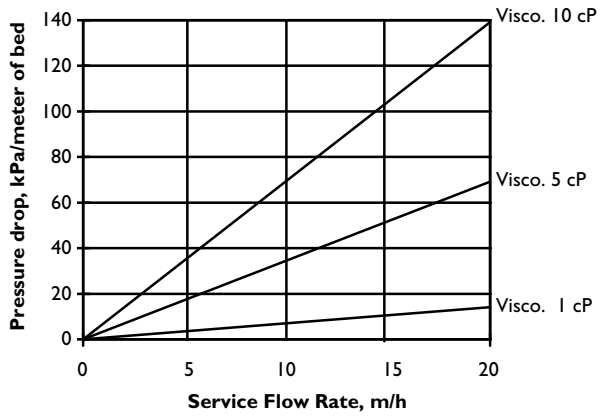


Figure 2: Pressure Drop (at 24 °C)



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

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