



AMBERLITE™ FPA90 CI

Food Grade Strong Base Anion Exchanger

Introduction

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

Biopharmaceutical processing

AMBERLITE FPA90 CI 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 primarily 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 CI 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

AMBERLITE FPA90 CI is a macroreticular anionic exchange resin containing a quaternary amine function on a cross-linked 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

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

Suggested Operating Conditions

Maximum operating temperature	80°C (Cl form)
Minimum bed depth	1000mm
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
Fastrinse	4 to 8 BV up to 12 BV/h

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/ft²

Figure 1: Bed Expansion

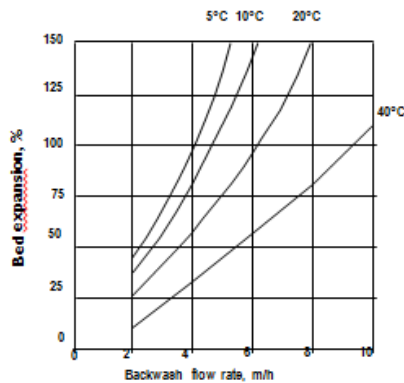
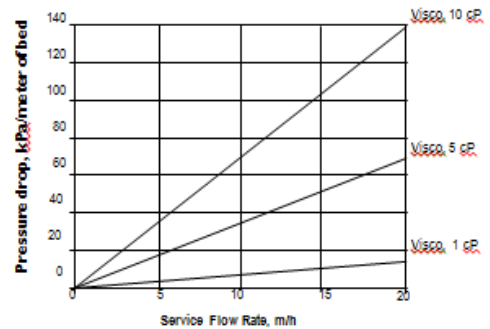


Figure 2: Pressure Drop (at 24 °C)



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