



AMBERLITE™ FPA55

Food Grade Weak Base Anion Exchanger

Introduction

AMBERLITE FPA55 is a unique acrylic, weakly basic, anion exchange for use in the deashing and deacidification of food stream. Whilst AMBERLITE FPA55 can be used for starch based sweeteners and the treatment of organic acids, it has been particularly useful in dairy applications where a combination of stability and rinse has been noted. An improved rinse profile of the AMBERLITE FPA55 allows customers to choose between the more classic AMBERLITE FPA53 and the AMBERLITE FPA55 depending on their particular needs.

AMBERLITE FPA55 is an excellent resin of choice for decolorization of organic color bodies in many bioprocessing applications such as natural product extraction, recovery of antibiotics from fermentation broth.

AMBERLITE FPA55 has demonstrated lower rising characteristics resulting in lower operation costs.

Properties and Suggested Operating Conditions

The acrylic polymer matrix is extremely flexible providing far superior physical stability, and organic fouling resistance to conventional polystyrene based resins. Less breakdown and less fouling yields longer life in the application. AMBERLITE FPA55 is a gel-type resin giving it higher capacity and longer run lengths than macroporous- type resins. AMBERLITE FPA55 is higher in basicity than other weakly basic ion exchange resins and thus is an excellent choice for removal of weak organic acids.

As compared to the AMBERLITE FPA53, the AMBERLITE FPA55 has been designed to have a short rinse which gives some cost benefits in process operations.

Properties

Matrix	Crosslinked acrylic gel structure
Functional groups	Tertiary amines
Physical form	Transparent white beads
Ionic form as shipped	Free Base (FB)
Total exchange capacity ^[1]	≥ 1.6 eq/L (FB form)
Moisture holding capacity ^[1]	56 to 64 % (FB form)
Shipping weight	720 g/L
Harmonic mean size	0.500 - 0.750 mm
Fine contents ^[1]	< 0.300 mm : 3.0 % max
Maximum reversible swelling	FB → Cl ⁻ : 30 %

^[1]Contractual value

Test methods available upon request

Suggested Operating Conditions

Maximum operating temperature	50°C
Minimum bed depth	700 mm
Service flow rate	4 to 8 BV*/h
Regenerant	NaOH
Regenerant flow rate (BV/h)	2 to 8
Regenerant concentration (%)	2 to 4
Regenerant level	130 % of ionic load
Minimum contact time	30 minutes
Slow rinse	2 BV at regeneration flow rate
Fastrinse	4 to 8 BV at 10 BV/h

* 1 BV = 1m³ solution per m³ of resin

Food processing

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

Hydraulic Characteristics

Figure 1 shows the bed expansion of AMBERLITE FPA55 as a function of backwash flow rate and water temperature.

Figure 2 shows the pressure drop data for AMBERLITE FPA55 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

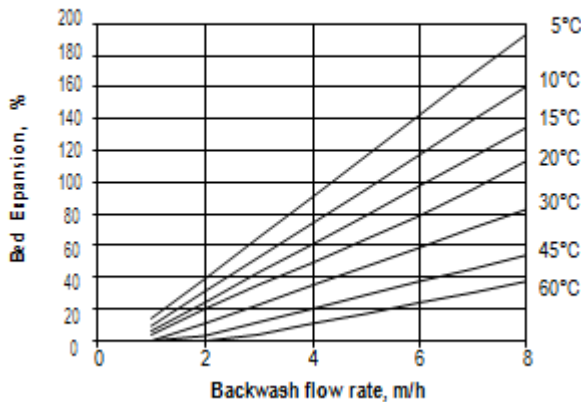
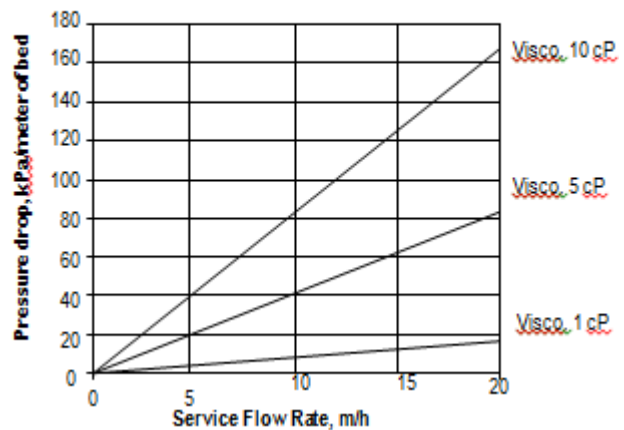


Figure 2: Pressure Drop (at 24 °C)



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