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AMBERLITE™ IRA70RF

Industrial Grade Weak Base Anion Exchanger

Introduction

AMBERLITE IRA70RF resin is a weak base anion exchange resin with a gel type acrylic matrix. The acrylic polymer matrix is extremely flexible providing far superior physical stability and organic fouling resistance in comparison with conventional polystyrene based resins. Less breakdown and less fouling yields longer life in the application. AMBERLITE IRA70RF resin is a gel-type resin giving it higher capacity and longer run lengths than macroporous-type resins. Compared to other acrylic weak base anion resins, AMBERLITE IRA70RF resin has an excellent rinse performance. Its excellent organic reversibility makes it ideally suited to demineralise surface waters containing high amounts of organic matter. The particle size distribution of AMBERLITE IRA70RF resin has been specifically selected to give optimum performance in packed and floating bed applications.

Properties

Physical Form	Translucent white spherical beads
Matrix	Crosslinked acrylic gel structure
Functional group	Tertiary amine
Ionic form as shipped	Free Base (FB)
Total exchange capacity	≥ 1.40 eq/L (FB form)
Moisture holding capacity	56 to 64 % (FB form)
Shipping weight	655 g/L
Particle Size	
Uniformity coefficient	≤ 1.60
Harmonic mean size	0.700 to 0.950 mm < 0.355 mm 0.5 % max
Reversible swelling	FB → Cl ⁻ ≤ 10 %

Suggested Operating Conditions

Water Treatment	
Maximum operating temperature	40 °C
Minimum bed depth	700 mm
Service flow rate	5 to 40 BV*/h
Regeneration	
Regenerant	NaOH
Level	130 % of ionic load
Concentration	2 to 4 %
Minimum contact time	30 minutes
Slow rinse	2 BV at regeneration flow rate
Fast rinse	3 to 10 BV at service flow rate

Performance

Operating capacity

The actual operating capacity of AMBERLITE IRA70RF resin depends on a number of factors:

- composition of water (particularly CO₂ and SO₄ content),
- specific flow rate,
- ionic load.

Regeneration

Optimum regeneration dosage is a quantity of caustic soda equivalent to 120 to 140 % of the operating capacity.

Organic matter

The aliphatic structure of AMBERLITE IRA70RF resin gives it slightly less affinity for organic acids found in surface waters than polystyrene weak base resins. This weaker affinity combined with the flexible acrylic polymer structure allows for more complete elution of the organics from the resin. Therefore, AMBERLITE IRA70RF resin offers a large reversible capacity for the removal of organic matter.

Limits of use

AMBERLITE IRA70RF resin is suitable for industrial uses. For all other specific applications such as pharmaceutical, food processing or potable water applications, it is recommended that all potential users seek advice from Rohm and Haas in order to determine the best resin choice and optimum operating conditions.

Hydraulic Characteristics

Figure 1 shows the bed expansion of AMBERLITE IRA70RF resin as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for AMBERLITE IRA70RF resins as a function of service flow rate and water temperature.

Figure 1: Bed Expansion

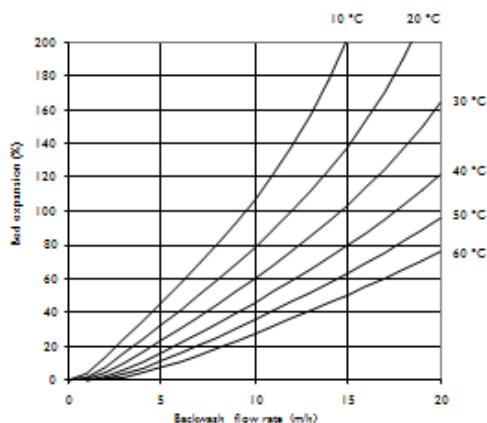
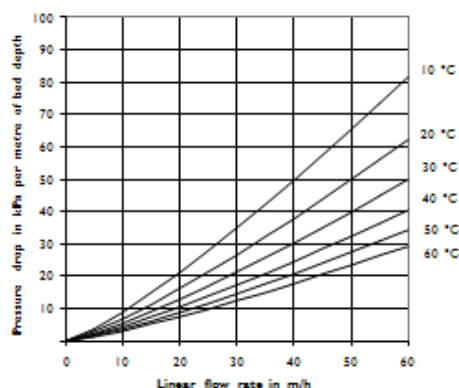


Figure 2: Pressure Drop



For more information about DOW™ resins, call the Dow Water & Process Solutions business:

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