

**AMBERLITE™ IRA96RF Ion Exchange Resin**

Industrial Grade Weak Base Anion Exchanger

Description

AMBERLITE™ IRA96RF Ion Exchange Resin is a macroporous weak base anion exchange resin. Its macroporous structure and limited reversible swelling make it very physically stable and resistant to breakage due to osmotic shock. The high degree of porosity of this resin offers efficient adsorption of large organic molecules and desorption during regeneration, thus providing excellent protection against organic fouling.

AMBERLITE IRA96RF resin is intended primarily for the removal of strong acids from water following a strongly acidic cation exchange resin. It provides excellent protection against organic fouling for downstream strong base anion exchange resin. The particle size distribution of AMBERLITE IRA96RF resin has been specifically selected to offer exceptional performance in packed bed and floating bed applications.

Typical Physical and Chemical Properties

Matrix	Styrene divinylbenzene copolymer
Functional Group	Tertiary amine
Physical Form	Tan opaque spherical beads
Ionic Form as Shipped	Free Base (FB)
Total Volume Exchange Capacity	≥ 1.25 eq/L (FB form)
Water Retention Capacity	59 – 65% (FB form)
Bulk Density as Shipped	670 g/L
Particle Size	
Uniformity Coefficient	≤ 1.50
Harmonic Mean Size	630 – 830 µm
Fine Contents	< 0.300 mm : 0.1% max
Coarse Beads	> 1.180 mm : 1.0% max

Suggested Operating Conditions

Maximum Operating Temperature	60°C
Minimum Bed Depth	700 mm
Service Flow Rate	5 – 40 BV*/h
Regeneration	
Regenerant	NaOH
Level	120% of ionic load
Concentration	2 – 4%
Minimum Contact Time	30 minutes
Slow Rinse	2 BV* at regeneration flow rate
Fast Rinse	4 – 8 BV at service flow rate

*1 BV (Bed Volume) – 1 m³ solution per m³ resin

Performance

Operating capacity

The operating capacity of AMBERLITE™ IRA96RF Ion Exchange Resin, when used to deionize water, depends on a number of factors:

- Ionic load
- CO₂ content
- SO₄²⁻/FMA ratio
- Water temperature

Organic matter

AMBERLITE IRA96RF resin can reversibly adsorb organic molecules from solution, due to its high porosity. Therefore, it is very useful to protect strongly basic resins from irreversible fouling.

Physical stability

The tough, durable structure of AMBERLITE IRA96RF resin, associated with the limited reversible volume change in service, offers excellent resistance to attrition from osmotic or physical stress. In addition, the resin has outstanding resistance to oxidation.

Hydraulic Characteristics

Bed expansion of AMBERLITE™ IRA96RF Ion Exchange Resin as a function of backwash flowrate and water temperature is shown in Figure 1.

Pressure drop data for AMBERLITE IRA96RF resin as a function of service flowrate and water temperature is shown in Figure 2. Pressure drop data is valid at the start of the service run with clear water and a correctly classified bed. This data is valid for water treatment and have to be corrected according to the solution to be treated.

Figure 1: Bed Expansion

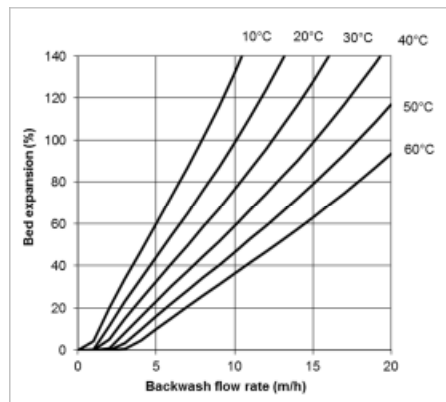
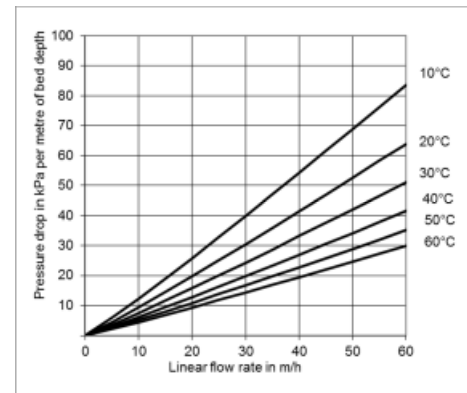


Figure 2: Pressure Drop



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WARNING: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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