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AMBERLITE™ IRA478RF CI

Industrial Grade Strong Base Anion Exchanger

Introduction

AMBERLITE IRA478RF CI resin is an acrylic gel type bifunctional anion exchange resin, with unique chemical and physical properties. It combines the high operating capacity normally associated with weakly basic acrylic anion exchange resins with quaternary ammonium, type 1, strong base functionality. This enables AMBERLITE IRA478RF CI resin to achieve complete removal of all anions including the weakly dissociated ions like silica and carbon dioxide. Due to its crosslinked acrylic gel structure AMBERLITE IRA478RF CI resin shows an outstanding resistance to organic fouling.

AMBERLITE IRA478RF CI resin is recommended as the working anion exchange resin for demineralisation of water having more than 75 % Free Mineral Acidity and up to 10 % silica. Under these conditions AMBERLITE IRA478RF CI will give excellent operating capacity with low caustic regenerant consumption. The particle size distribution of AMBERLITE IRA478RF CI resin has been specially selected to give optimum performance in floating and packed bed applications (RF means reverse flow).

Properties

| | |
|---------------------------|--|
| Physical form | Translucent white spherical beads |
| Matrix | Crosslinked acrylic gel structure |
| Functional group | Quaternary ammonium/tertiary amine |
| Ionic form as shipped | Free Base and Chloride |
| Total exchange capacity | ≥ 1.15 eq/L |
| Moisture holding capacity | 57 to 65 % |
| Shipping weight | 700 g/L |
| Particle size | |
| Uniformity coefficient | ≤ 1.8 |
| Harmonic mean size | 0.700 to 0.980 mm < 0.355 mm 1.0 % max |

Suggested Operating Conditions

| | |
|-------------------------------|--------------------------------|
| Maximum operating temperature | 35°C |
| Minimum bed depth | 1000 mm (preferably > 1400 mm) |
| Service flow rate | 5 to 40 BV*/h |
| Regeneration | |
| Regenerant | NaOH |
| Level | 40 to 70 g/L |
| Concentration | 2 to 4 % |
| Minimum contact time | 30 minutes |
| Slow rinse | 2 BV at regeneration flow rate |
| Fast rinse | 4 to 8 BV at service flow rate |

Performance

The operating capacity depends on several factors such as the water analysis and the level of regeneration. The data to calculate the operating capacity and the silica leakage of AMBERLITE IRA478RF CI resin are given in the Engineering Data Sheet EDS 0232 A.

Hydraulic Characteristics

AMBERLITE IRA478RF Cl resin gives a pressure drop of about 10 kPa/m bed depth per 10 m/h at 15°C.

A backwash flow rate of 7.5 m/h gives a bed expansion of about 70 % at 15°C.

Limits of use

AMBERLITE IRA478RF Cl 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.

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

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