AMBERLITE IRC76
Industrial Grade Weak Acid Exchanger

PRODUCT DATA SHEET

AMBERLITE IRC76 is a weakly acidic cation exchange resin containing carboxylic acid groups. It is characterised by a volume variation smaller than that of conventional weak acid resins and can therefore be used between the H⁺ and Na⁺ or NH₄⁺ forms. It can of course also be used to remove bicarbonate hardness from water.

AMBERLITE IRC76 is sensitive to oxidation: the presence of chlorine in the water to be treated may affect the lifetime and the performance of the resin.

PROPERTY

Matrix ________________________________ Polyacrylic copolymer
Functional groups________________________ – COO⁻
Physical form____________________________ Light yellow opaque beads
Ionic form as shipped______________________ H⁺
Total exchange capacity \([1]\) ___________________ ≥ 3.90 eq/ L (H⁺ form)
Moisture holding capacity \([1]\) ________________ 52 to 58 % (H⁺ form)
Specific gravity ____________________________ 1.14 to 1.18 (H⁺ form)
Shipping weight ___________________________ 700 g/ L
Particle size
Harmonic mean size________________________ 0.50 - 0.75 mm
Uniformity coefficient______________________ ≤ 1.9
Fine contents \([1]\) __________________________ < 0.300 mm : 3.0 % max
Coarse beads ______________________________ > 1.180 mm : 5.0 % max
Maximum reversible swelling________________ H⁺ → Na⁺: 60 %

\([1]\) Contractual value
Test methods are available on request.

SUGGESTED OPERATING CONDITIONS

Maximum operating temperature _____________ 100°C
Minimum bed depth _______________________ 700 mm
Service flow rate __________________________ 5 to 40 BV*/h
Regenerant _______________________________ HCl H₂SO₄
Flow rate (BV/ h)___________________________ 2 to 8 15 to 40
Concentration (%)_________________________ 2 to 5 0.5 to 0.7
Level _________________________________ 104 to 110 % of the theory
Slow rinse ______________________________ 2 BV at regeneration flow rate
Fast rinse ______________________________ 2 to 4 BV at service flow rate

* 1 BV (Bed Volume) = 1 m³ solution per m³ resin
PERFORMANCE

The operating capacity of AMBERLITE IRC76 is a function of analysis, temperature and service flow rate of water. AMBERLITE IRC76 is readily regenerated with little over stoichiometric amounts of strong acids. If the use of sulphuric acid is contemplated, care must be taken to apply a low concentration of \( \text{H}_2\text{SO}_4 \) (ca 0.7 %) in order to avoid calcium sulphate precipitation.

LIMITS OF USE

AMBERLITE IRC76 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 IRC76 as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for AMBERLITE IRC76, as a function of service flow rate and water temperature. Pressure drop data are valid at the start of the service run with a clear water and a correctly classified bed.

All our products are produced in ISO 9002 certified manufacturing facilities.

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Ion exchange resins and polymeric adsorbents, as produced, contain by-products resulting from the manufacturing process. The user must determine the extent to which organic by-products must be removed for any particular use and establish techniques to assure that the appropriate level of purity is achieved for that use. The user must ensure compliance with all prudent safety standards and regulatory requirements governing the application. Except where specifically otherwise stated, Rohm and Haas Company does not recommend its ion exchange resins or polymeric adsorbents, as supplied, as being suitable or appropriately pure for any particular use. Consult your Rohm and Haas technical representative for further information. Acidic and basic regenerant solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. Nitric acid and other strong oxidising agents can cause explosive type reactions when mixed with ion exchange resins. Proper design of process equipment to prevent rapid buildup of pressure is necessary if use of an oxidising agent such as nitric acid is contemplated. Before using strong oxidising agents in contact with Ion Exchange Resins, consult sources knowledgeable in the handling of these materials.

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