

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.

PROPERTIES

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 H ₂ SO ₄
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 H_2SO_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.

Figure 1: Bed Expansion

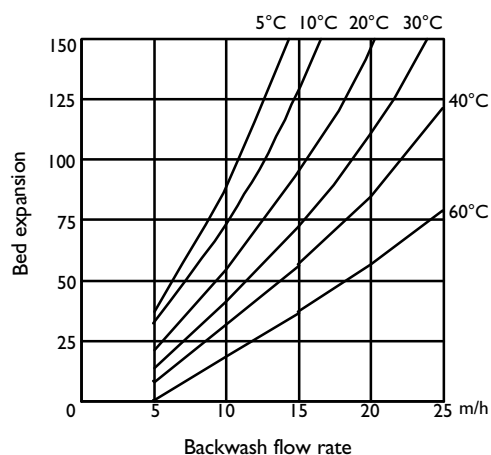
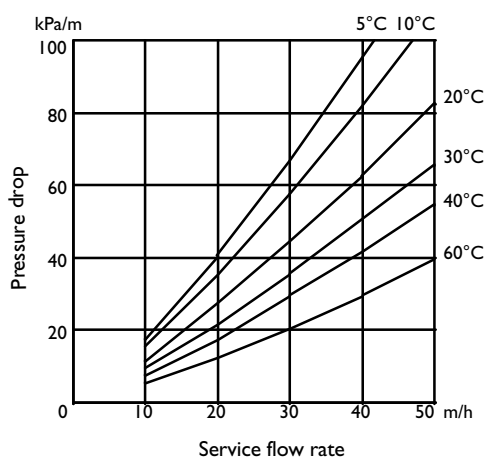


Figure 2: Pressure Drop



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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