



AMBERLITE® IRC86RF

Industrial Grade Weak Acid Exchanger

PRODUCT DATA SHEET

AMBERLITE IRC86RF is a high capacity weak acid cation exchange resin containing carboxylic acid groups. It is characterised by an outstanding physical and chemical stability. AMBERLITE IRC86RF has been specially developed for use in floating and packed bed applications. Its principal application is the dealkalisation of industrial waters. AMBERLITE IRC86RF, in the

hydrogen cycle, removes hardness associated with alkalinity. Combined with a strong acid cation exchanger, AMBERLITE IRC86RF allows to reduce acid consumption in deionisation.

The presence of chlorine in the water to be treated does not affect the performance of the resin.

PROPERTIES

Matrix _____	Gel polyacrylic copolymer
Functional groups _____	- COO ⁻
Physical form _____	Clear yellow beads
Ionic form as shipped _____	H ⁺
Total exchange capacity ^[1] _____	≥ 4.10 eq/L (H ⁺ form)
Moisture holding capacity ^[1] _____	47 to 53 % (H ⁺ form)
Specific gravity _____	1.170 to 1.195 (H ⁺ form)
Shipping weight _____	790 g/L
Particle size _____	
Harmonic mean size _____	0.600 - 0.800 mm
Uniformity coefficient _____	≤ 1.5
Fine contents ^[1] _____	< 0.300 mm : 0.1 % max
Coarse beads _____	> 1.180 mm : 2.0 % max
Maximum reversible swelling _____	H ⁺ → Na ⁺ : 100 %
(total conversion)	H ⁺ → Ca ⁺⁺ : 15 %
	H ⁺ → Mg ⁺⁺ : 50 %

^[1] Contractual value

Test methods are available on request.

SUGGESTED OPERATING CONDITIONS

Maximum operating temperature _____	120°C
Minimum bed depth _____	700 mm
Service flow rate _____	5 to 70 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 ionic load
Minimum contact time _____	30 minutes
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

Operating capacity

The operating capacity of AMBERLITE IRC86RF is a function of analysis, temperature and service flow rate of water. Data providing information to calculate the capacity are given in the engineering data sheet (EDS 0235 A).

Regeneration

AMBERLITE IRC86RF 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 H₂SO₄ (ca 0.7 %) in order to avoid calcium sulphate precipitation.

HYDRAULIC CHARACTERISTICS

AMBERLITE IRC86RF gives a pressure drop of about 14 kPa/m bed depth per 10m/h at 15°C.

A backwash flow rate of 14 m/h gives a bed expansion of about 65 % at 15°C.

LIMITS OF USE

Due to its high swelling between H⁺ and Na⁺ or NH₄⁺ forms, it is recommended not to use AMBERLITE IRC86RF between these ionic forms. AMBERLITE IRC86RF 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.

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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