

AMBERLITE™ IRC86SB Industrial Grade Weak Acid Exchanger

Description

AMBERLITE IRC86SB resin is a high capacity weak acid cation exchange resin containing carboxylic acid groups. It is characterized by an outstanding physical and chemical stability. The particle size distribution of AMBERLITE IRC86SB resin has been specifically selected to give optimum performance in stratified bed applications paired with AMBERJET™ 1500 H resin. This combination allows to reduce acid consumption as well as capital cost in deionisation. AMBERLITE IRC86SB resin, in the hydrogen cycle, removes hardness associated with alkalinity. In the process, $\text{CO}_3^{=}$ and HCO_3^- are converted to CO_2 which can be removed by degasification. The presence of chlorine in the water to be treated does not affect the performance of the resin.

Typical Properties

These properties are typical but do not constitute specifications.

Physical form	Clear yellow spherical beads
Matrix	Gel polyacrylic copolymer
Functional group	Carboxylic acid
Ionic form as shipped	H^+
Total exchange capacity ^[1]	≥ 4.10 eq/L (H^+ form)
Moisture holding capacity ^[1]	47 to 53% (H^+ form)
Shipping weight	790 g/L
Particle size	
Harmonic mean size	0.450 - 0.600 mm
Uniformity coefficient	≤ 1.6
< 0.315 mm ^[1]	4.0% max.
Maximum reversible swelling (total conversion)	$\text{H}^+ \rightarrow \text{Na}^+ : 100\%$ $\text{H}^+ \rightarrow \text{Ca}^{++} : 15\%$ $\text{H}^+ \rightarrow \text{Mg}^{++} : 50\%$

^[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 70 BV*/h
Regeneration	
Regenerant	HCl H_2SO_4
Level	104 to 110% of operating capacity
Concentration (%)	2 to 5 0.5 to 0.7
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 IRC86SB resin 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

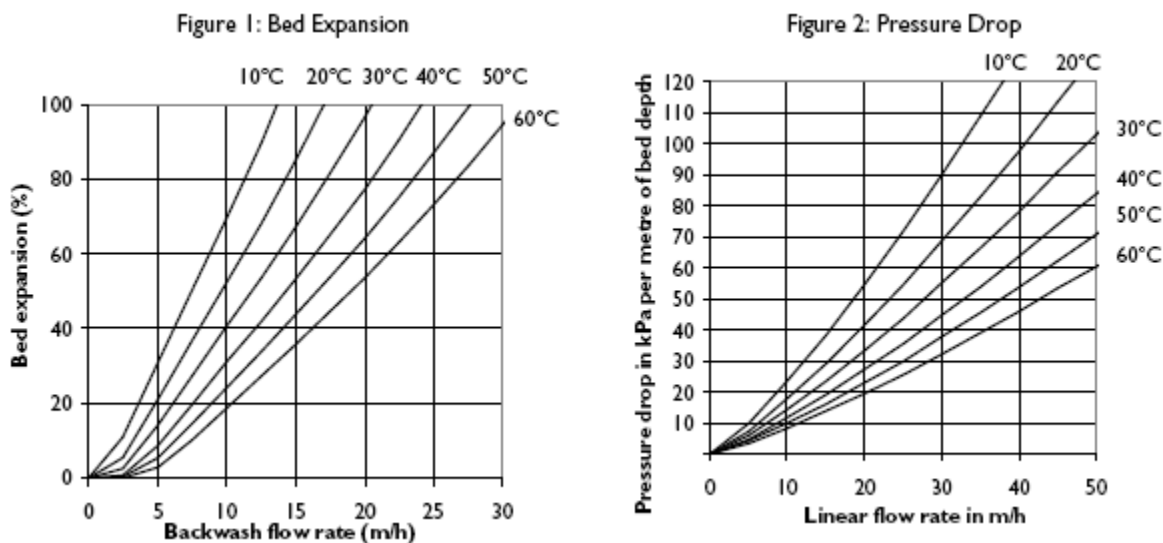
AMBERLITE IRC86SB resin is readily regenerated with little over stoichiometric amounts of strong acids. If the use of sulphuric acid is contemplated, care must be taken to apply a low concentration of H_2SO_4 (ca 0.7%) in order to avoid calcium sulphate precipitation.

Limits of Use

Due to its high swelling between H^+ and Na^+ or NH_4^+ forms, it is recommended not to use AMBERLITE IRC86SB resin between these ionic forms. AMBERLITE IRC86SB 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.

Hydraulic Characteristics

Figure 1 shows the bed expansion of AMBERLITE IRC86SB resin as a function of backwash flow rate and water temperature. Figure 2 shows the pressure drop data for AMBERLITE IRC86SB resin, 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 9001 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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