AMBERLITE® IRC86SB

Weak Acid Cation Exchanger

PRODUCT DATA SHEET

AMBERLITE IRC86SB 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 has been specifically selected to give optimum performance in stratified bed applications paired with AMBERJET 1500 H. This combination reduces acid consumption as well as capital cost in deionization. AMBERLITE IRC86SB, in the hydrogen cycle, removes hardness associated with alkalinity. In the process, $CO_3^{=}$ 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.

PROPERTIES

Matrix	Gel polyacrylic copolymer
Functional Groups	Carboxylic Acid
Physical Form	Clear yellow beads
Ionic Form as Shipped	Hydrogen
Total Exchange Capacity	4.10 meq/ml minimum (H^+ form)
Moisture Holding Capacity	47 to 53 % (H^+ form)
Shipping Weight	49 lbs/ft^3
Harmonic Mean Size	0.45 - 0.60 mm
Uniformity Coefficient	1.6 maximum
Maximum Reversible Swelling	$H^+ \rightarrow Na^+$: approximately 100 %

Test methods are available on request.

SUGGESTED OPERATING CONDITIONS

pH Range	5 to 14	
Maximum Operating Tempeature	250 °F	
Minimum Bed Depth	24 inches	
Service Flow Rate	0.5 to 5.5 gpm/ft^3	
Regenerants (100 % basis)	**HCl (30 %)**	**H_2SO_4 (66 ° Bé)**
Flow rate (gpm/ft^3)	0.25 to 0.5	0.05 to 0.09
Concentration (%)	2 to 8	15 to 40
Level	104 to 110 % of the theory	
Minimum Contact Time	30 minutes	
Slow Rinse	15 gal/ft^3 at regeneration flow rate	
Fast Rinse	15 to 90 gal/ft^3 at service flow rate	

PERFORMANCE

Operating capacity

The operating capacity of AMBERLITE IRC86SB is a function of analysis, temperature and service flow rate of water.

Regeneration

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

HYDRAULIC CHARACTERISTICS

AMBERLITE IRC86SB gives a pressure drop of about 1.15 psi/ft bed depth per 4.1 gpm/ ft^2 at 60°F.

A backwash flow rate of 3.3 gpm/ft^2 gives a bed expansion of about 65 % at 60°F.

LIMITS OF USE

Due to its high swelling between H^+ and Na^+ or NH_2^+ forms, it is recommended AMBERLITE IRC86SB ***NOT*** be used between these ionic forms.

AMBERLITE IRC86SB 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.

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