ROHM AND HAAS

AMBERLITE® IRA402 OH

Strong Base Anion Exchanger

PRODUCT DATA SHEET

AMBERLITE IRA402 OH is a type 1 gelular, premium grade, strongly basic, anion exchange resin. It is based on crosslinked polystyrene and has high regeneration efficiency and excellent rinse performance. It is used in co-flow regeneration and conventional counterflow systems with downflow loading and upflow regeneration with air or water holddown. Combined with a strong acid cation exchanger, AMBERLITE IRA402 OH resin reduces both strong and weak acid concentrations to extremely low levels. Its main use is water demineralization. Other fields of application include the treatment of electroplating waste and the isolation of anionic metal complexes.

PROPERTIES

Matrix	Polystyrene divinylbenzene copolymer
Functional Groups	Quaternary ammonium
Physical Form	Pale yellow translucent beads
Ionic Form as Shipped	Hydroxide
Total Exchange Capacity	0.95 meq/ml minimum (OH^- form)
Shipping Weight	41 lbs/ft^3
Harmonic Mean Size	0.65 to 0.85 mm
Uniformity Coefficient	1.6 maximum
Screen Grading (wet)	16 to 50 mesh (US Std Screens)
Screen Analysis	2 % maximum on 16 mesh (US Std Screens) 1 % maximum thru 50 mesh (US Std Screens)
Maximum Reversible Swelling	$Cl^- \rightarrow OH^-$: approximately 30 %

Test methods are available on request.

SUGGESTED OPERATING CONDITIONS

pH range	0 to 14
Maximum operating temperature	140 °F (OH^- form) / 170 °F (Cl^- form)
Minimum bed depth	24 inches
Service flow rate	1 to 3 gpm/ft^3
Regenerant (100% basis)	**NaOH**
Flow rate	0.25 to 0.5 gpm/ft^3
Concentration	2 to 4 %
Level	2 to 12 lbs/ft^3
Minimum contact time	30 minutes
Rinse flow rate	0.25 to 0.5 gpm/ ft^3 initially to displace regenerant, then 1.5 gpm/ft^3
Rinse water requirements	75 gal/ft^3 (approximate)

LIMITS OF USE

AMBERLITE IRA402 OH 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 Company in order to determine the best resin choice and optimum operating conditions.

HYDRAULIC CHARACTERISTICS

Figure 1 shows the expected pressure drop per foot of bed depth of AMBERLITE IRA402 OH in normal downflow operation with water at various temperatures as a function of flow rate.
Figure 2 shows the bed expansion of AMBERLITE IRA402 OH as a function of backwash flow rate and water temperature. AMBERLITE IRA402 OH should be backwashed for 10 minutes after each operating cycle to reclassify the resin beads and purge the bed of suspended insoluble material which may collect on top of the resin.

Fig. 1 : Pressure Drop

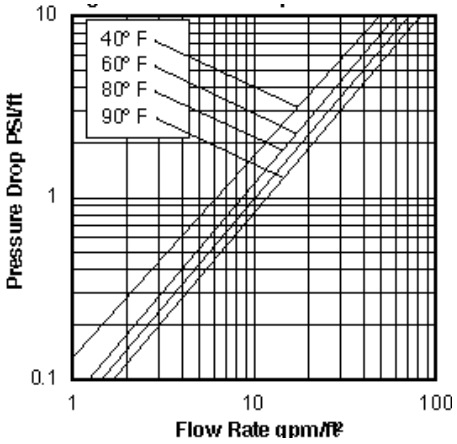
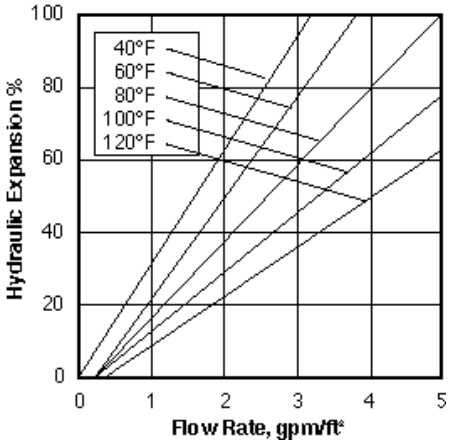


Fig. 2 : Bed Expansion



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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.