

Aldex MP Series

C-800H MP SC Macroporous Strong Acid Resin

Aldex C-800H MP SC is a **premium grade, high capacity, strongly acidic macroporous cation resin** in the **sodium or hydrogen form**, used in demineralization systems and condensate polishers. Aldex C-800H MP SC combines high capacity characteristics with the increased thermal and chemical stability versus gellular resins. Aldex C-800H MP SC is more highly crosslinked than our standard non-solvent resins Aldex C-800H and Aldex C-800x10H.

Physical Chemical Properties

Resin Composition:	Macroporous styrene divinylbenzene
Functional Group	Sulfonic Acid
Ionic Form as Shipped:	Hydrogen or Sodium
Physical Form:	Tan, spherical beads
Total Capacity	
Hydrogen Form:	>1.6 meq/mL
Sodium Form:	>1.8 meq/mL
Moisture Content	
Hydrogen Form:	50 to 60%
Sodium Form:	45 to 55%
Swelling (Sodium to Hydrogen)	2 to 4%
Shipping Weight	
Hydrogen Form:	48 lbs per cubic foot
Sodium Form:	50 lbs per cubic foot
Particle Size:	16 to 50 mesh
Fines Content (<50 mesh):	1% maximum
Sphericity:	95% minimum
Uniform Coefficient	1.6 approximately

Recommended Operating Conditions

Maximum Temperature:	280°F (Hydrogen Form) 300°F (Sodium Form)
Bed Depth:	Minimum 24"
Backwash Flow Rate:	25 to 50% bed expansion
Pressure Loss:	20 psi maximum
Influent pH:	0 to 14
Regenerant Strength:	
Hydrogen cycle	5 to 10% HCl
Hydrogen cycle	1 to 8% H ₂ SO ₄
Salt cycle	10 to 15% NaCl
Regenerant Dosage Level:	4 to 15 lbs per cubic foot
Regenerant Flow Rate:	0.5 to 1.5 US GPM per cubic foot
Regenerant Contact Time:	>20 minutes
Displacement Flow Rate:	Same as dilution water
Displacement Volume:	10 to 15 gallons per cubic foot
Rinse Flow Rate:	1 to 10 US GPM per cubic foot
Rinse Volume:	35 to 60 gallons per cubic foot
Service Flow Rate:	1 to 10 US GPM per cubic foot

C-800H MP SC Features

Very low color, taste or odor

Aldex C-800H MP SC meets the requirements for paragraph 173.25 of the Food Additive Regulation of the U.S. Food and Drug Administration.

Long Life

Strong and durable beads ensure long service life.

Superior Physical Stability

Combined 98% sphericity with high crush strengths and uniform particle size provide greater resistance to bead breakage due to mechanical, thermal or osmotic stresses.

Reliability

Aldex Chemical has over 40 years of field usage by thousands of customers demonstrate the reliability of Aldex ion exchange resins, zeolites and other water treatment media.

Safety Information

A material safety data sheet is available for Aldex C-800H MP SC. Copies can be obtained from Aldex Chemical Co., LTD. Aldex C-800H MP SC is not a hazardous product and is not WHMIS controlled.

Caution: Acidic and basic regenerant solutions are corrosive and should be handled in a manner that will prevent eye and skin contact. Before using strong oxidizing agents in contact with ion exchange resin, consult sources knowledgeable in the handling of these materials.



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Pressure Drop

The graph below (Fig. 1) shows the expected pressure loss per foot of bed depth as a function of flow rate at various temperatures.

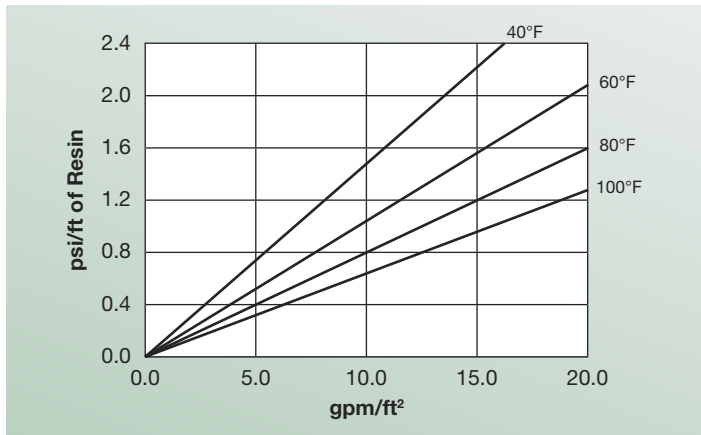


Fig. 1 Pressure Drop vs Flow Rate at various degrees Fahrenheit (F°)

Backwash Characteristics

Aldex C-800H MP SC should be backwashed for at least 20 minutes at a flow rate sufficient to cause 25% to 50% expansion of the resin bed. This will remove any foreign matter and reclassify the bed.

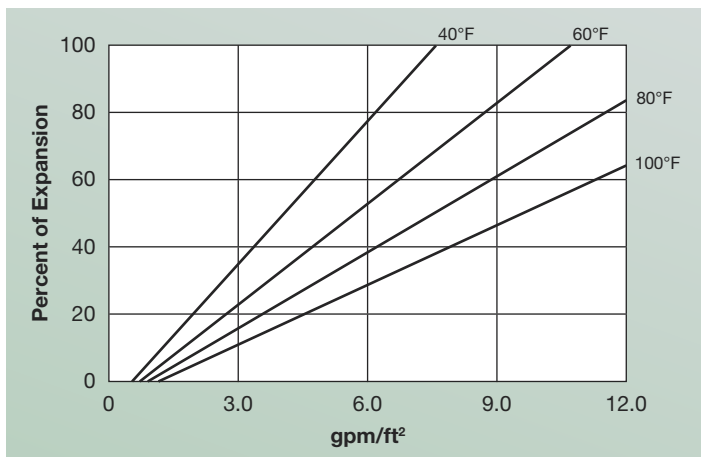


Fig. 2 Hydraulic expansion data parameter flow rate GPM / FT²

Applications

Softening

Fig. 3 shows operating capacity of Aldex C-800H MP SC for acid removal at various regeneration levels when treating an influent. Data is based on a concentration of 2:1 Ca:Mg ratio at 500 ppm as calcium carbonate, a .02% salt hardness, and 10% brine concentration applied concurrently over 30 minutes. No engineering downgrade applied.

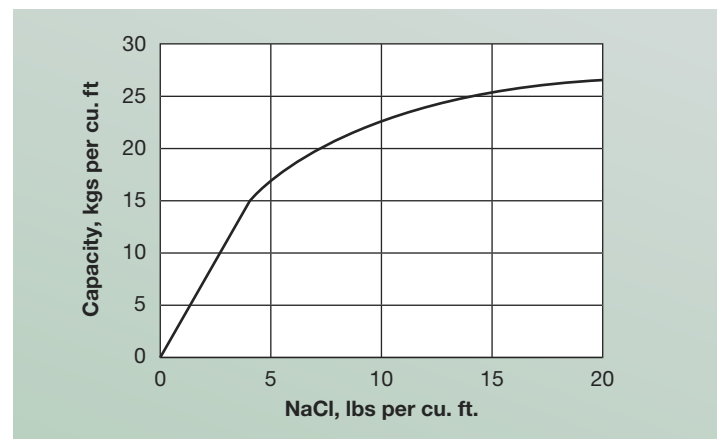


Fig. 3 Softening capacity

Demineralization

Aldex SB-1 MP SC is highly recommended for use in multiple and mixed bed demineralizations, wherever complete ion removal and physical and osmotic stability are required.

The high total capacity of Aldex C-800H MP SC makes it ideal for applications such as precious metal recovery, rad-water disposal and purification of toxic waste streams. The lower porosity also provides an increased resistance to osmotic and physical shock compared with more porous products such as Aldex C-800H MP SC.

Type 1 anion exchangers have greater thermal and oxidation resistance than other types of strong base resins and can be operated at higher temperatures to ensure low silica leakages. The lower porosity, high total capacity and Type 1 functionality of Aldex C-800H MP SC make it the resin of choice where the water temperature is in excess of 85°F or where the combination of carbon dioxide



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plus silica exceed 40% of the total anion and where chlorides and organics represent only a small portion of the ions to be removed on a regeneration basis. At lower regeneration levels or where the removal and elution of organics is of concern Aldex C-800H MP should be considered.

Aldex C-800H MP SC and Aldex C-800H MP are quite similar; the major difference between the two is the degree of porosity. The choice between them is not always clear cut. We suggest you consult our technical staff for specific recommendations.

Fig 4. demonstrates the operating capacity of Aldex C-800H MP SC in the Hydrogen form. Data is based on 500 ppm as calcium carbonate with zero alkalinity, bed depth of 36", flow rate of 2 to 4 gpm per cubic feet and a greater than 30 minutes chemical injection time. If the calcium concentration exceeds 20% of total cations, then the sulfuric acid concentrations must be decreased

in stages. No engineering downgrade applied.

Radwaste

Aldex C-800H MP SC is ideally suited for radwaste applications. Due to its high cross-linked media, it has enhanced resistance to chemical damage caused by ionizing radiation. It is able to maintain its structural integrity up to 1×10^9 rads exposure.

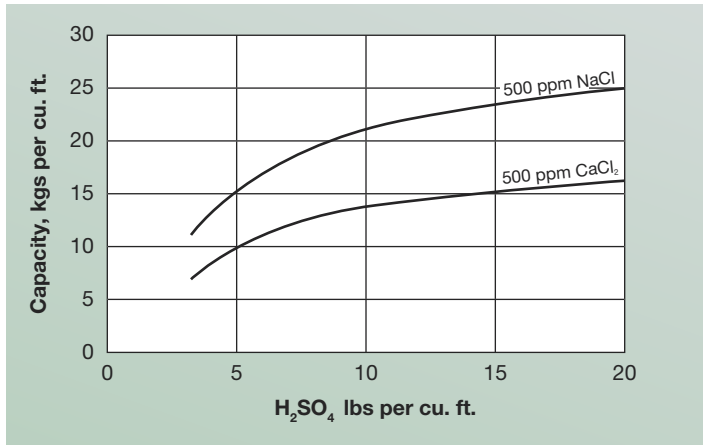


Fig. 4 Operating Capacity

