

Aldex Strong Base Anion Series

SB-2 Strong Base Anion Exchange Resin

Aldex SB-2 is a **strongly basic, Type 2, gel anion resin**. It provides **superior regeneration efficiency** and **greater resistance to organic fouling than Type 1 strongly basic exchangers**. Aldex SB-2 is intended for use in all types of dealkalization deionization and chemical processing applications. It is supplied in the chloride form as moist, tough uniform spherical beads.

Physical Chemical Properties

Polymer Structure:	Styrene crosslinked with divinylbenzene
Functional group:	R-N(CH ₃) ₂ CH ₂ CH ₂ OH
Ionic Form as Shipped:	Chloride
Physical Form:	Tough, Spherical beads
Screen Size:	0.30 to 1.20 mm
>1.20 mm	<2%
<0.42 mm	<2%
<0.30 mm	<1%
pH Range:	0 to 14
Moisture Content (Cl ⁻ Form):	38 to 44%
Solubility	Insoluble
Shipping Weight (Cl ⁻ Form):	695 to 715 g/l
Total Capacity:	1.4 meq/ml minimum
Sphericity:	90+% minimum

Recommended Operating Conditions

Maximum Temperature:	
Hydroxide Form	30°C
Chloride Form	50°C
Bed Depth:	75 cm
Service Flow Rate:	8 to 40 BV/h
Backwash Flow Rate:	50 to 75% bed expansion
Regenerant Flow Rate:	2 to 4 BV/h
Regenerant Contact Time:	60 minutes minimum
Regenerant Dosage Level:	60 to 160 g/l
Slow Rinse (Displacement)	2 to 4 BV/h
Slow Rinse Volume:	2 to 4 BV
Fast Rinse Rate:	2 to 4 BV/h
Fast Rinse Volume:	3 to 6 BV

SB-2 Features

Very low color, taste or odor

Aldex SB-2 meets the requirements for paragraph 173.25 of the Food Additive Regulation of the U.S. Food and Drug Administration.

High Capacity

Aldex SB-2 Type 2 exchange functionality provided a dramatic increase in regeneration efficiency and superior resistance to organic fouling compared to other types of strongly basic anion exchangers. In cases where natural organics are found, Type 2 resins such as Aldex SB-2 will retain their original operating capacity longer than Type 1 resins such as Aldex SB-1P, operating at similar regeneration levels.

Long Life

Strong and durable beads insure long service life.

Superior Physical Stability

Over 95% sphericity combined with high crush strengths and uniform particle size provide greater resistance to bead breakage due to mechanical, thermal or osmotic stresses.

Potable Water

For potable water applications the resin must be properly pretreated, usually multiple exhaustion and regeneration cycles, to insure compliance with extractable levels.

Safety Information

A material safety data sheet is available for Aldex SB-2. Copies can be obtained from Aldex Chemical Co., LTD. Aldex SB-2 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



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Pressure Drop

Fig. 1 shows the expected pressure loss per meter of bed depth as a function of flow rate at various temperatures.

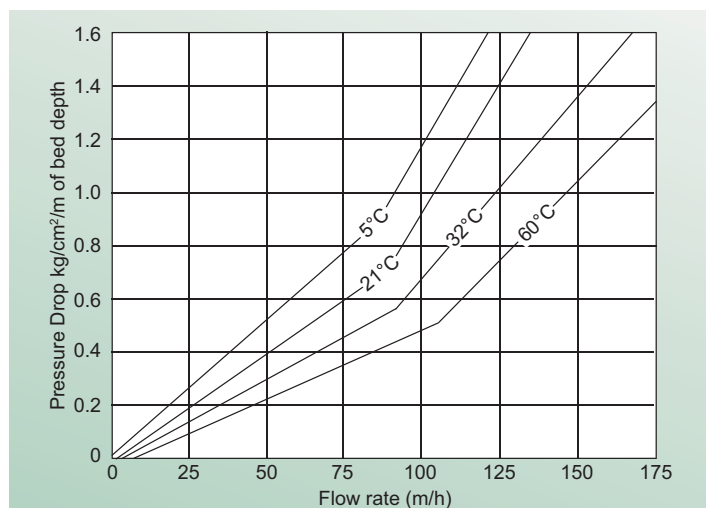


Fig. 1 Pressure Drop vs Flow Rate at various degrees Celsius (°C)

Backwash Characteristics

After each cycle the resin bed should be backwashed at a rate that expands the bed 50 to 75 percent. This will remove any foreign matter and reclassify the bed. Fig. 2 shows the expansion characteristics of Aldex SB-2.

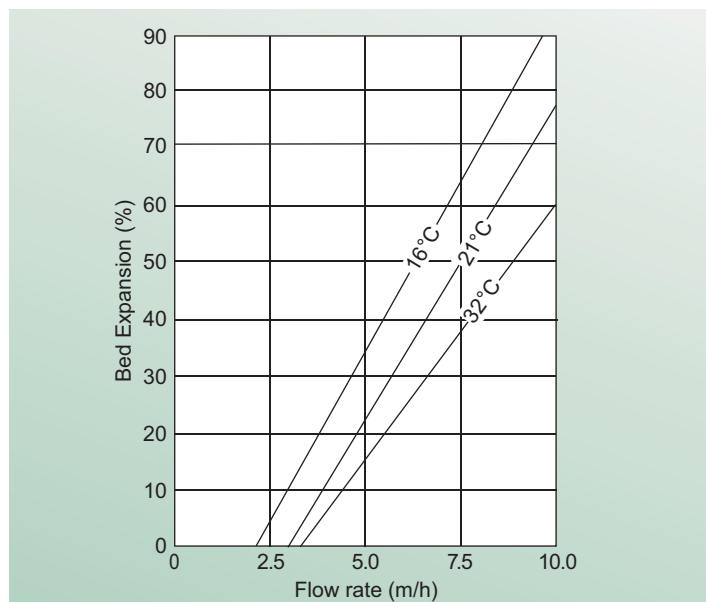


Fig. 2 Bed Expansion vs Flow Rate at various degrees Celsius (°C)

Operating Capacity

The operating capacity of Aldex SB-2 for acid removal at various regeneration levels when treating an influent of 500 ppm of Hydrochloric Acid, as Calcium Carbonate, is shown in Fig. 3.

The salt splitting capacity of Aldex SB-2 at various regeneration levels, based on an influent water containing 500 ppm of NaCl as CaCO₃, is shown in Fig. 4.

NaOH (g/l)	Capacity (eq/l)
60	0.9
90	1.0
120	1.1
150	1.2

Fig. 3 Operating Capacity

NaOH (g/l)	Capacity (eq/l)
60	0.9
90	0.9
120	1.0
150	1.1

Fig. 4 Salt Splitting

Applications

Demineralization

Aldex SB-2 is generally used in multiple bed systems where its tremendous operating capacity is best utilized. Use should be restricted to when water temperatures are less than 95° or carbon dioxide plus silica do not exceed 40% of the exchangeable anions.

Aldex SB-2 is less susceptible to fouling by naturally occurring organics and can often be used alone as a "working resin" on waters that would normally require extensive pretreatment or an organic scavenger prior to the demineralization.

Dealkalization

Aldex SB-2 can be regenerated with NaCl and used to remove alkalinity, without the use of acid. A small amount of NaOH is generally mixed with salt to obtain a higher operating capacity. A regeneration level of 80 g/l of salt mixed with 4 g/l of caustic per cubic foot will provide an operating capacity of up to 0.70 eq/l on waters containing 100% alkalinity.

NOTE: Do not use salt containing cleaning agents, iron additives or rust removers to regenerate this resin. Only nontreated, evaporated sea salt or rock salt are suitable.



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