Aldex Weak Acid Cation Series

WAC MP FG Macroporous Weak Acid Cation Resin Food Grade

Tested and certified by WQA according to NSF/ANSI/CAN 61 and 372, NSF/ANSI 44 and CSA B483.1. *Aldex WAC MP FG is a* ***premium grade, weakly acidic, macroporous, acrylic-based cation exchange resin*** *supplied in the hydrogen form. The* ***high total exchange capacity***, ***excellent mechanical and chemical stability***, *and* ***high resistance to osmotic shock*** *make this the resin of choice for dealkalization and chemical processing applications. Increased regeneration efficiency can be achieved when Aldex WAC MP FG is used in conjunction with Aldex C-800H in demineralization systems, either as a layered bed or preceding the strong acid cation vessel.*

Physical Chemical Properties

Polymer Structure:	Acrylic / divinylbenzene copolymer
Functional Group:	$R\text{-}(COOH)^-$
Ionic Form as Shipped:	Hydrogen
Physical Form:	Tough, spherical beads
Screen Size Distribution:	16 to 50 mesh
+16 mesh	Less than 5%
-50 mesh	Less than 2%
Operating pH Range:	5 to 14
Moisture Content:	45 to 55%
Solubility:	Insoluble
Shipping Weight:	47 lbs per cubic foot
Swelling H^+ to Na^+:	60% maximum
Total Capacity:	4.3 eq/l minimum
Sphericity:	90+%

Recommended Operating Conditions

Maximum Temperature:	167°F (73°C)
Bed Depth:	30” minimum
Service Flow Rate:	2 to 5 US GPM per cubic foot
Backwash Flow Rate:	50 to 75% bed expansion
Regenerant Strength*:	
Hydrochloric acid	3 to 6%
Sulfuric acid	0.5 to 0.8%
Regenerant Flow Rate:	0.3 to 0.75 US GPM per cubic foot
Regenerant Contact Time:	30 minutes minimum
Regenerant Dosage Level:	Depends on alkalinity
Displacement Rinse:	0.3 to 0.75 US GPM per cubic foot
Displacement Rinse Volume:	10 to 15 Gallons per cubic foot
Fast Rinse Rate:	2 to 5 US GPM per cubic foot
Fast Rinse Volume:	35 to 60 Gallons per cubic foot

**CAUTION: Do not mix ion exchange resins with strong oxidizing agents. Nitric acid and other strong oxidizing agents can cause explosive reactions when mixed with organic materials, such as ion exchange resins.*

WAC MP FG Features

Carboxylic Functional Groups

Give extremely high regeneration efficiencies and high operating capacities.

Superior Physical Stability

90% plus sphericity and high crush strengths together with a very uniform particle size provide greater resistance to bead breakage while maintaining low pressure drop.

Low Swelling

Less than 60% on complete exhaustion to the sodium form.

Safety Information

A material safety data sheet is available for Aldex WAC MP FG. Copies can be obtained from Aldex Chemical Co., LTD. Aldex WAC MP FG 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.

Tested and certified by WQA according to NSF/ANSI/CAN 61 and 372, NSF/ANSI 44 and CSA B483.1. for materials safety only. For use restrictions, please visit www.wqa.org.

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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 water temperatures.

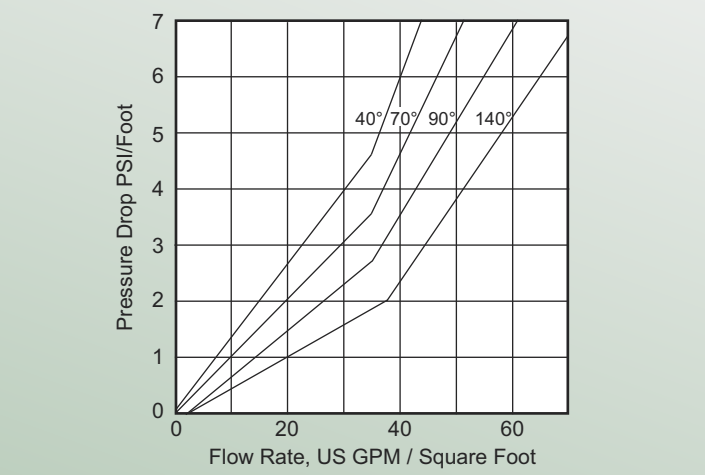

Fig. 1 Pressure Drop vs Flow Rate at various degrees Fahrenheit (F°)

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.)

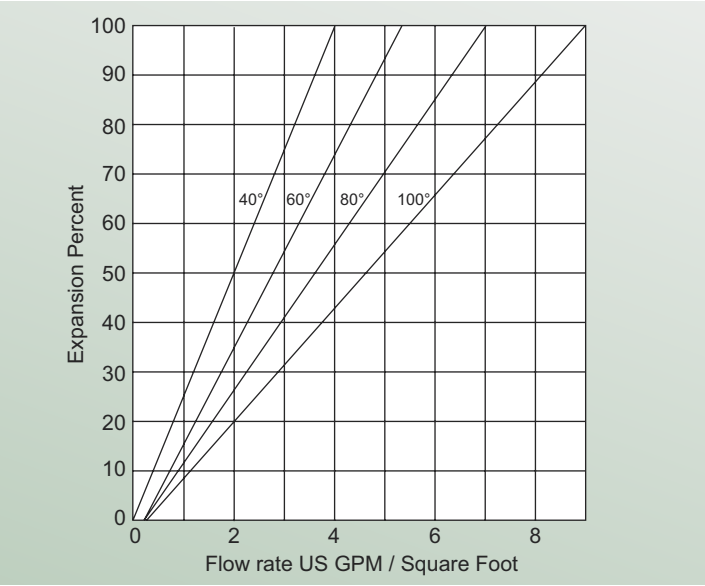

Fig. 2 Expansion vs Flow Rate at various degrees Fahrenheit (F°)

Applications

Demineralization

Aldex WAC MP FG can be used to remove cations associated with alkalinity in multiple bed demineralizers.

Softening

In certain applications, Aldex WAC MP FG can be operated as softener in sodium cycle. This requires a two stage regeneration using a strong acid first stage to remove multivalent ions from the bed followed by a neutralization rinse with an alkali.

Dealkalization

Bicarbonate alkalinity can be effectively removed using Aldex WAC MP FG in the hydrogen form.

Operating Capacity

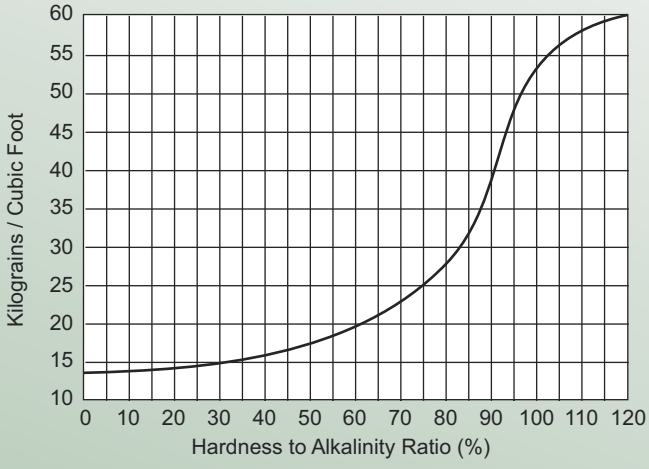

Fig. 3

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Rev. ADX13643-0124