METALEASE-ALF™ ARSENIC, LEAD, & FLUORIDE REMOVAL MEDIA

FEATURES & BENEFITS

- Does not release arsenic, lead, or fluoride except during regeneration and can be sent to landfill when used in single pass applications (ie. cartridges, exchange tanks, rebedding, etc.)
- Removes metals through a combination of adsorption and chemical reaction with the media, thus the removal is not dependent on ion exchange
- Uniform particle size with minimal shrinkage or swelling and low pressure loss
- Physically stable and can be used over a wide pH range
- Certified to NSF/ANSI Standard 61 for drinking water applications

Typical Properties

Chemical Structure	Crystalline Aluminum Oxide
Active Ingredients	92% minimum
Physical Form	Tough Uniform Granules
Color	White
Surface Area	315 to 330 m^2/gr
Mesh Size	28 x 48
pH Range	4 to 10
Water Retention	Less than 5%
Solubility	Nil
Net Weight	47 to 48 lb/cu.ft.
Shipping Weight	50 lb/cu.ft.
Packaging	1 cu.ft. box or 37 cu.ft. supersack

Suggested Operating Conditions

Maximum Temperature	100°C (212°F)
Maximum Free Chlorine	1 ppm
Minimum Bed Depth	36 inch minimum (5 to 7 foot preferred)
Backwash Rate	To achieve 10 to 25% expansion
Continuous Flow Rate	1 to 2 gpm/cu.ft.
Intermittent Flow Rate	1 to 5 gpm/cu.ft.

MetalEase-ALF (P/N METALEASE ALF) is a high capacity synthetic adsorbent media that is highly selective for arsenic, lead, and fluoride. The extremely high surface area and pore distribution gives this media the highest possible operating capacity and lowest possible leakage.

Arsenic Removal

Inorganic arsenic (arseniite and arsenate) can be removed by MetalEase-ALF. The process is very pH sensitive and capacity decreases rapidly when the pH is below 5.5 or above 6.0. Arsenite is not removed nearly as well as arsenate; therefore, prechlorination to convert arsenite to arsenate may be required. Arsenic removal is also affected by temperature and by the TDS of the feedwater. Increasing temperature increases capacity while increasing TDS decreases capacity.

Equilibrium capacity for arsenate (1,000 ppm TDS, 25°C, 1 mg/l As) is approximately 0.66 lbs/cu.ft. Operating capacity to a 10% leakage end point is approximately 10% of the equilibrium capacity. Regeneration can be accomplished by using 3 to 4 lbs/cu.ft. of 2 to 4% sodium hydroxide, over 20 to 30 minutes, followed by nuetralization with acid to a pH of 5 to 6.

Lead Removal

Dissolved lead is adsorbed by MetalEase-ALF and is not normally regenerable. Capacity for lead is at least 0.4 lbs/cu.ft. while maintaining greater than 98% lead removal. This process is not dramatically affected by flow rate, temperature, or TDS. However, pH should be maintained above 6.0 as lead removal drops under acidic conditions, and below 10 as lead precipitates under basic conditions.

Fluoride Removal

Fluoride is removed by MetalEase-ALF by a chemical reaction with the media. The process is flow and pH sensitive. The best results are obtained when the flow is limited to about 1 gpm/cu.ft. and the pH is held at 5.5. Higher flows and higher or lower pH causes a significant loss of capacity. The best capacity obtainable is approximately 0.2 lbs/cu.ft. Leakage of fluoride is generally less than 0.1 mg/l to breakthrough.

Regeneration can be accomplished using 3 to 4 lbs/cu.ft. of 2 to 4% sodium hydroxide over 20 to 30 minutes, followed by neutralization with acid to a pH of 5 to 6.

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DECEMBER 2015

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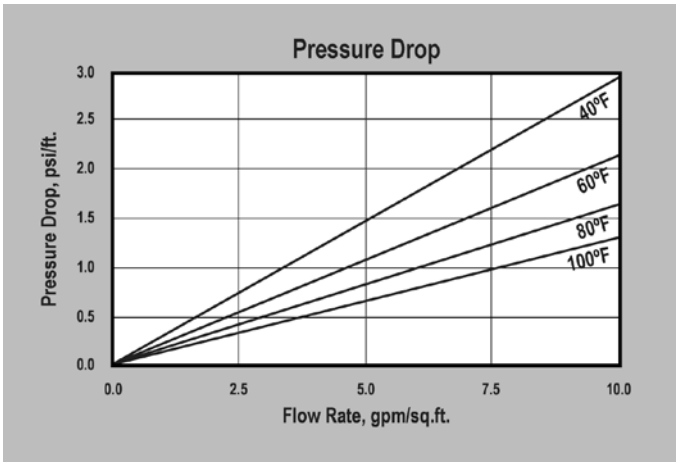
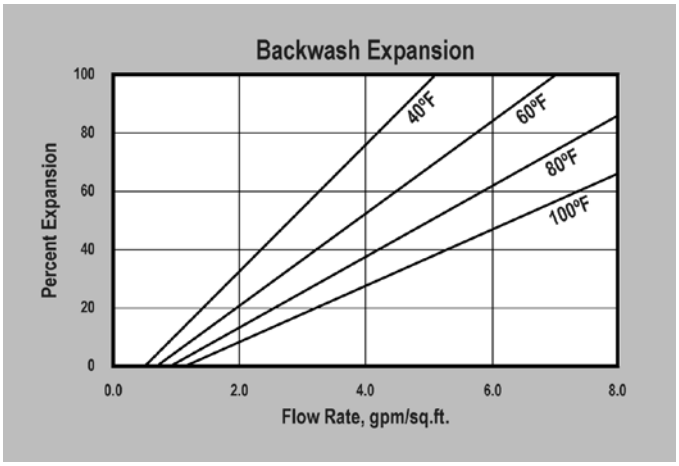


PRESSURE DROP — The graph above shows the expected pressure loss per foot of bed depth as a function of flow rate at various temperatures.



BACKWASH — The graph above shows the expansion characteristics as a function of flow rate at various temperatures.

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