AMBERLITE™ MB9L H/OH Ion Exchange Resin

Mixture of Gaussian, Gel, Strong Acid Cation and Strong Base Anion Exchange Resins for Industrial Demineralization Applications

Description

AMBERLITE™ MB9L H/OH Ion Exchange Resin is a volume-equilibrated mixture of strong acid cation and strong base anion exchange resins. It is fully regenerated, ready-to-use, non-regenerable, pre-mixed resin characterized by high cationic exchange capacity. The pre-mixed resin also allows for faster initial rinse-up prior to service, which minimizes rinse wastewater volume.

AMBERLITE MB9L H/OH is specifically designed for a partial demineralization of water when the ratio of alkalinity to free mineral acidity is higher than 1, and where the complete removal of cations and of the acidity is essentially required without the need to fully eliminate CO_2 and silica.

AMBERLITE MB9L H/OH is the reference mixed bed for electro-erosion applications. The resin mixture is prepared from high quality components and the proprietary manufacturing process ensures a homogeneous golden light color consistently from batch to batch. In operation, the resin provides a stable water quality and long operational lifetime in most metal cutting systems.

Applications

- Electro-erosion applications, demineralization of water baths
- Mixed bed polishing for partial demineralization

System Designs

- Non-regenerated mixed beds

Historical Reference

AMBERLITE™ MB9L H/OH Ion Exchange Resin has previously been sold as AMBERLITE™ MB9L Ion Exchange Resin.

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Typical Physical and Chemical Properties**

	Cation Resin	Anion Resin
Physical Properties		
Copolymer	Styrene-divinylbenzene	Styrene-divinylbenzene
Matrix	Gel	Gel
Type	Strong acid cation	Strong base anion, Type I
Functional Group	Sulfonic acid	Trimethylammonium
Physical Form	Golden light amber, translucent, spherical beads	Golden light amber, translucent, spherical beads
Volume Ratio	46 – 55%	54 – 45%
Chemical Properties		
Ionic Form as Shipped	H^+	OH^-
Particle Size §		
< 300 µm	≤ 5.0%	
Density		
Shipping Weight	720 g/L	

§ For additional particle size information, please refer to the Particle Size Distribution Cross Reference Chart (Form No. 177-01775).

Product Performance

Operating Capacity

The operating capacity of AMBERLITE™ MB9L H/OH Ion Exchange Resin can be estimated using the following formula, which gives an approximate determination of volume of water that can be treated:

$$BV = \frac{600}{TDS\ (meq/L)} \qquad \text{or} \qquad {}^{gal}/_{ft^3} = \frac{224000}{TDS\ (as\ ppm\ CaCO_3)}$$

where BV (Bed Volume) is the number of liters of a feedwater containing a TDS (Total Dissolved Solids) given in meq/L that can be demineralized with one liter of the resin mixture when run to exhaustion (or US gallons per cubic foot of the resin with TDS as ppm $CaCO_3$).

Treated Water Quality

AMBERLITE™ MB9L H/OH Ion Exchange Resin provides a high-quality demineralized water with a conductivity < 10 µS/cm and neutral pH that will satisfy the electrical discharge machining operations.

Suggested Operating Conditions**

Temperature Range (H^+/OH^- form) ‡	5 – 60°C (41 – 140°F)

‡ Operating mixed beds at elevated temperatures, for example above 60 – 70°C (140 – 158°F), may impact the purity of the loop and resin life. Contact our technical representative for details.

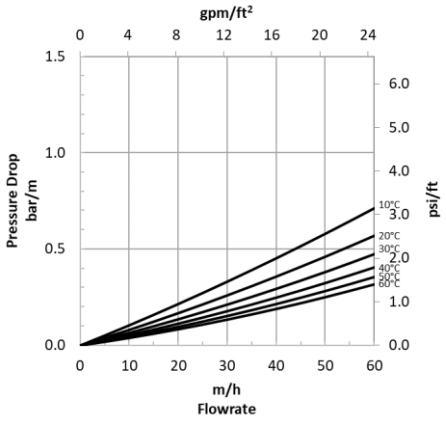
For additional information regarding recommended minimum bed depth and operating conditions for mixed beds (Form No. 177-03705) or separate beds (Form No. 177-03729) in water treatment, please refer to our Tech Facts.

Hydraulic Characteristics

Estimated pressure drop for AMBERLITE™ MB9L H/OH Ion Exchange Resin as a function of service flowrate and temperature is shown in Figure 1. These pressure drop expectations are valid at the start of the service run with clean water and a well-classified bed.

Figure 1: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



Product Stewardship

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WARNING: Oxidizing agents such as nitric acid attack organic ion exchange resins under certain conditions. This could lead to anything from slight resin degradation to a violent exothermic reaction (explosion). Before using strong oxidizing agents, consult sources knowledgeable in handling such materials.

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