

AmberLite™ MB6113 H/OH Ion Exchange Resin

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

Description

AmberLite™ MB6113 H/OH Ion Exchange Resin is a dyed mixture of strong acid cation and strong base anion exchange resins. It is fully regenerated, ready-to-use, non-regenerable, pre-mixed resin developed for the production of high-purity water. The pre-mixed resin also allows for faster initial rinse-up prior to service, which minimizes rinse wastewater volume at start-up.

AmberLite™ MB6113 H/OH is specifically designed for a full demineralization of water. A color indicator enables the visualization of the resin exhaustion point, which allows the production of demineralized water without a conductivity meter to detect the service end-point. After exhaustion, AmberLite™ MB6113 H/OH cannot be regenerated.

AmberLite™ MB6113 H/OH is the reference mixed bed for the production of demineralized water in small cartridge systems. The resin mixture is prepared from high-quality components and the proprietary manufacturing process ensures a homogeneous blue-green color consistently from batch to batch.

In operation, the resin provides a stable, high-quality demineralized water for laboratories, steam ironing, or battery fill-up. The sharp visible color change from regenerated (blue-green) to exhausted (amber-yellow) makes AmberLite™ MB6113 H/OH the product of choice for small cartridge deionization systems.

Applications

- Working mixed bed in cartridge applications

System Designs

- Non-regenerated mixed beds

Historical Reference

AmberLite™ MB6113 H/OH Ion Exchange Resin has previously been sold as AmberLite™ MB6113 Ion Exchange Resin.

Typical 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	Translucent, spherical beads Blue-green (as delivered) to Amber-yellow (exhausted)	Translucent, spherical beads
Volume Ratio	37 – 46%	63 – 54%
Chemical Properties		
Ionic Form as Shipped	H ⁺	OH ⁻
Stability		
Whole Beads		≥ 90%
Density		
Shipping Weight		700 g/L

Product Performance

Operating Capacity

The operating capacity of AmberLite™ MB6113 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:

$$BV = \frac{400}{TDS \text{ (meq/L)}} \quad \text{or} \quad \frac{\text{gal}}{\text{ft}^3} = \frac{150000}{TDS \text{ (as ppm CaCO}_3\text{)}}$$

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 CaCO₃).

Treated Water Quality

AmberLite™ MB6113 H/OH Ion Exchange Resin provides a high-quality demineralized water with a conductivity < 1 μS/cm and neutral pH that will satisfy most of the cartridge and laboratory applications.

Suggested Operating Conditions

Temperature Range (H ⁺ /OH ⁻ form) ‡	5 – 60°C (41 – 140°F)
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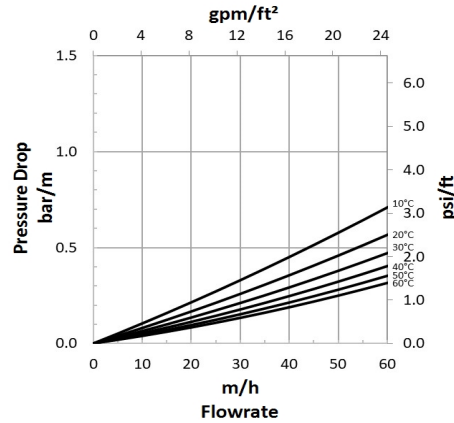
‡ Operating mixed beds at elevated temperatures, for example above 60 – 70°C (140 – 158°F), may impact the purity of the loop and resin life. Contact our technical representative for details.

For additional information regarding recommended minimum bed depth and operating conditions for [mixed beds](#) (Form No. 45-D01127-en) in water treatment, please refer to our Tech Facts.

Hydraulic Characteristics

Estimated pressure drop for AmberLite™ MB6113 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)



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Please be aware of the following:

- **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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