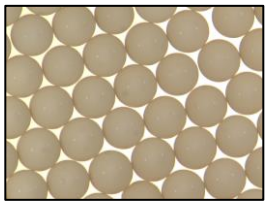
Product Data Sheet

AMBERLITE™ HPR9600 Ion Exchange Resin

Uniform Particle Size, Macroporous, Weak Base Anion Exchange Resin for Industrial Demineralization Applications

Description



AMBERLITE™ HPR9600 Ion Exchange Resin is a high-quality resin for use in industrial demineralization applications when high performance and cost-effective operation is required. The chemical properties and particle size of the resin have been optimized to help yield excellent operating capacity and rinse characteristics, while reducing chemical regenerant and water usage.

Weak base anion resins are well-suited for use with strong base anion resins to improve overall efficiency and throughput of a demineralization system. It effectively removes mineral acids and organics, reducing the ionic load on the strong base anion resin and also protecting it from organic fouling. The weak base anion resin increases a system's overall capacity to remove organics.

AMBERLITE HPR9600 combines excellent physical and thermal stability with high kinetics, yielding good operating capacity even in low-temperature operations. The macroporous structure allows for easy release of natural organic molecules providing excellent organic fouling resistance.

AMBERLITE HPR9600 is designed for use in single bed or layered bed systems when paired with AMBERLITE™ HPR4200 Cl or OH Ion Exchange Resin.

Applications

- Demineralization, ideally when treating water with:
  - High organic fouling potential
  - High percentage of mineral acidity (FMA)
- Partial demineralization when weak acid removal is not required

System Designs

Compatible with all system technologies and bed configurations:

- Co-current
- Counter-current / Hold-down
- Layered beds
- Packed beds

Historical Reference

AMBERLITE™ HPR9600 Ion Exchange Resin has previously been sold as DOWEX MARATHON™ 9600 Ion Exchange Resin.

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Typical Physical and Chemical Properties**

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Weak base anion
Functional Group	Tertiary amine
Physical Form	Cream, opaque, spherical beads
Chemical Properties	
Ionic Form as Shipped	Free base (FB)
Total Exchange Capacity	≥ 1.3 eq/L (FB form)
Water Retention Capacity	59.0 – 65.0% (FB form)
Particle Size	
Particle Diameter §	550 ± 50 µm
Uniformity Coefficient	≤ 1.1
< 300 µm	≤ 0.2%
Stability	
Whole Uncracked Beads	≥ 95%
Swelling	FB → HCl : 15%
Density	
Particle Density	1.05 g/mL
Shipping Weight	670 g/L

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

Suggested Operating Conditions**

Temperature Range (FB form)	5 – 60°C (41 – 140°F)
pH Range	
Service Cycle	0 – 6
Stable	0 – 14

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

Hydraulic Characteristics

Estimated bed expansion of AMBERLITE™ HPR9600 Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AMBERLITE HPR9600 as a function of service flowrate and temperature is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean water.

Figure 1: Backwash Expansion

Temperature = 10 – 60°C (50 – 140°F)

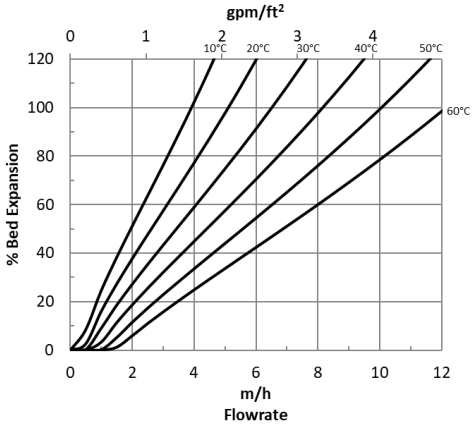
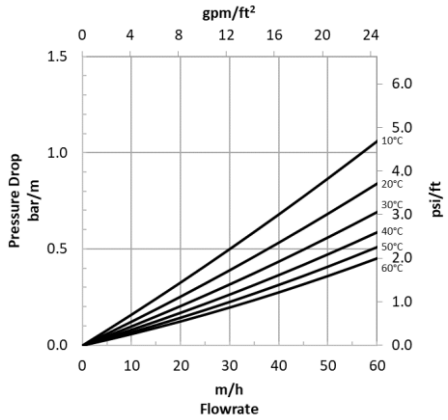


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



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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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