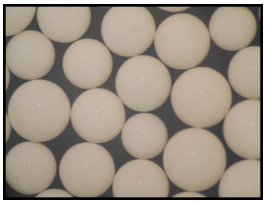
Product Data Sheet

AmberLite™ HPR9700 Ion Exchange Resin

Macroporous, Weak Base Anion Exchange Resin for Industrial Demineralization Applications

Description



AmberLite™ HPR9700 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 balanced to combine a good operating capacity with low pressure drop, 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™ HPR9700 has excellent physical and thermal stability. The macroporous structure allows for easy release of natural organic molecules providing excellent organic fouling resistance.

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

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

Historical Reference

AmberLite™ HPR9700 Ion Exchange Resin has previously been sold as AmberLite™ IRA96RF Ion Exchange Resin.

Form No. 45-D01244-en, Rev. 1
December 2019

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Weak base anion
Functional Group	Tertiary amine
Physical Form	Off-white, 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	630 – 900 µm
Uniformity Coefficient	≤ 1.3
< 300 µm	≤ 0.2%
> 1180 µm	≤ 1.0%
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. 45-D00954-en).

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. 45-D01131-en) in water treatment, please refer to our Tech Fact.

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Hydraulic Characteristics

Estimated bed expansion of AmberLite™ HPR9700 Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLite™ HPR9700 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 and a well-classified bed.

Figure 1: Backwash Expansion

Temperature = 10 – 60°C (50 – 140°F)

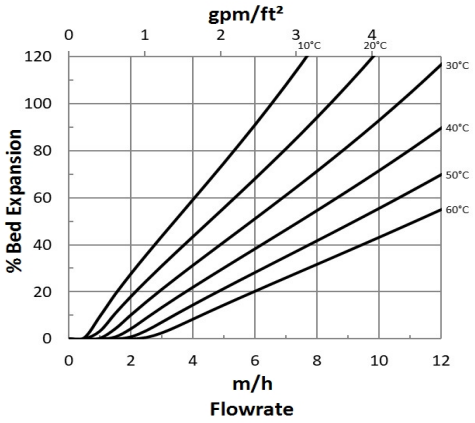
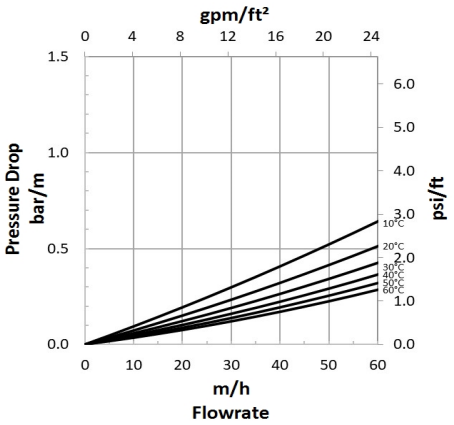


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



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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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