

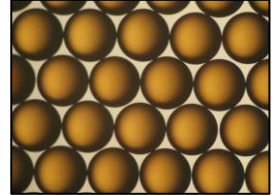


AMBERLITE™ HPR1300 Na Ion Exchange Resin

Uniform Particle Size, Gel, Strong Acid Cation Exchange Resin for Industrial Softening Applications

Description

AMBERLITE™ HPR1300 Na Ion Exchange Resin is a high-quality resin for use in industrial softening when managing a more thermally or oxidatively challenging water stream. It offers a balance of operating performance, simple operation, long resin life, and cost-effective operation. The chemical properties and particle size of the resin have been optimized to help yield excellent operating capacity and rinse characteristics, reducing chemical regenerant and rinse water usage while maintaining a superior physical stability.



AMBERLITE HPR1300 Na is compatible with all system technologies and bed configurations. For more details on the use of this product for demineralization, refer to the product data sheet for AMBERLITE™ HPR1300 H Ion Exchange Resin.

Applications

- Industrial softening, ideally when treating water with:
 - High oxidant level
 - High temperature on the cation resin
- Demineralization (when the sodium-form is preferred by the user)

System Designs

Compatible with all system technologies and bed configurations:

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

Typical Physical and Chemical Properties**

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Dark brown, translucent, spherical beads
Chemical Properties	
Ionic Form as Shipped	Na ⁺
Total Exchange Capacity	≥ 2.2 eq/L (Na ⁺ form)
Water Retention Capacity	39.0 – 45.0% (Na ⁺ form)
Particle Size	
Particle Diameter §	650 ± 50 µm
Uniformity Coefficient	≤ 1.10
< 300 µm	≤ 0.1%
Stability	
Whole Uncracked Beads	≥ 94%
Swelling	Ca ²⁺ → Na ⁺ : 4%
	Na ⁺ → H ⁺ : 7%
Density	
Particle Density	1.31 g/mL
Shipping Weight	840 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 (Na ⁺ form)	5 – 150°C (41 – 302°F)
pH Range	
Service Cycle	1 – 14
Stable	0 – 14

For additional information regarding recommended minimum bed depth, operating conditions, and regeneration 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 bed expansion of AMBERLITE™ HPR1300 Na Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AMBERLITE HPR1300 Na 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)

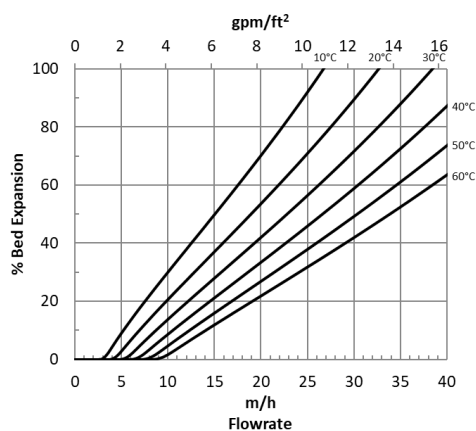
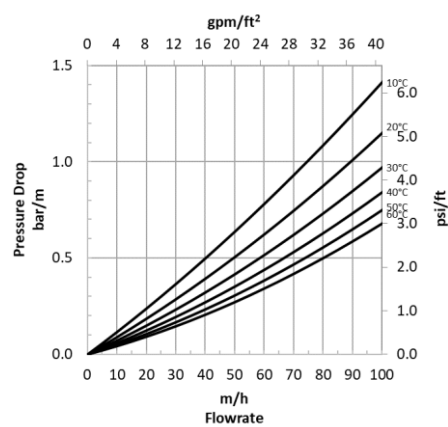


Figure 2: Pressure Drop

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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