



Product Data Sheet

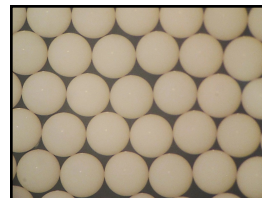
AmberLite™ HPR2900 H Ion Exchange Resin

Uniform Particle Size, Macroporous, Strong Acid Cation Exchange Resin for Industrial Demineralization Applications

Description

AmberLite™ HPR2900 H Ion Exchange Resin is a robust, high-quality resin for use in industrial demineralization applications when a combination of exceptional physical stability, simple and reliable operation, and long resin life is required.

Its high degree of crosslinking provides exceptional stability, which gives it great resistance to chemical oxidation and to mechanical, thermal, or osmotic stress. The properties of this macroporous resin have been designed for optimal kinetics.



AmberLite™ HPR2900 Na Ion Exchange Resin is available for industrial softening or demineralization applications when the sodium-form is preferred by the user.

Applications

- Systems requiring exceptionally high osmotic stability
- Demineralization, ideally when treating water with:
 - High oxidant level
 - High temperature on the cation resin
- Amine-cycle condensate treatment

System Designs

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

Historical Reference

AmberLite™ HPR2900 H Ion Exchange Resin has previously been sold as DOWEX MARATHON™ MSC H Ion Exchange Resin.

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	White, opaque, spherical beads
Chemical Properties	
Ionic Form as Shipped	H ⁺
Total Exchange Capacity	≥ 1.7 eq/L (H ⁺ form)
Water Retention Capacity	50.0 – 56.0% (H ⁺ form)
Particle Size §	
Particle Diameter	575 ± 50 µm
Uniformity Coefficient	≤ 1.10
< 300 µm	≤ 0.3%
> 850 µm	≤ 3.0%
Stability	
Whole Uncracked Beads	≥ 95%
Swelling	Na ⁺ → H ⁺ : 4%
Density	
Particle Density	1.20 g/mL
Shipping Weight	770 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 (H ⁺ form)	5 – 120°C (41 – 248°F)
pH Range	
Service Cycle	1 – 14
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.

Hydraulic Characteristics

Estimated bed expansion of AmberLite™ HPR2900 H Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLite™ HPR2900 H 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)

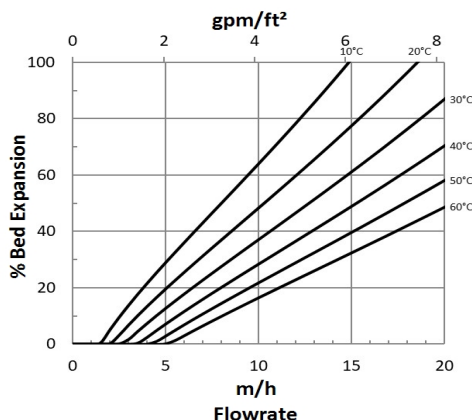
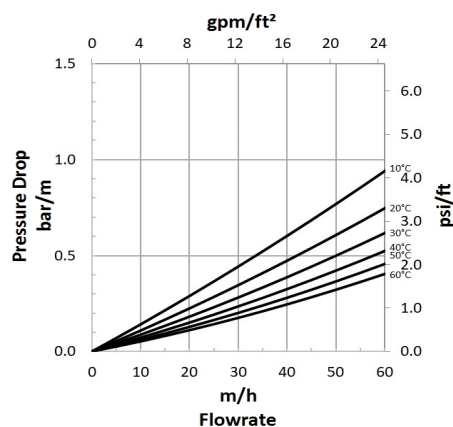


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



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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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