



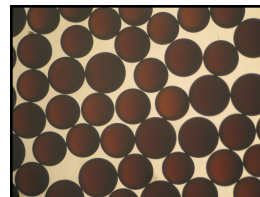
## Product Data Sheet

### **AmberLite™ HPR2800 H Ion Exchange Resin**

Uniform Particle Size, Macroporous, Strong Acid Cation Exchange Resin for Condensate Polishing for the Power Industry and Industrial Demineralization Applications

#### **Description**

AmberLite™ HPR2800 H Ion Exchange Resin is a high-quality resin for use in condensate polishing beds at fossil-fired electric generating stations, process condensate, and industrial demineralization applications when a combination of exceptional physical stability, simple and reliable operation, and long resin life is required.



AmberLite™ HPR2800 H is compatible with all system technologies and bed configurations. In mixed bed applications, the dark color of this cation resin is designed to allow easy visual distinction from the light-colored anion resin following backwash separation. For maximum resistance to surface fouling, this macroporous cation resin should be paired with a macroporous anion resin such as AmberLite™ HPR900 OH Ion Exchange Resin or AmberLite™ HPR9000 OH Ion Exchange Resin.

AmberLite™ HPR8300 H Ion Exchange Resin is the weak acid cation resin best paired with AmberLite™ HPR2800 H for optimal performance in new and retrofitted layered beds.

AmberLite™ HPR2800 H is compliant with the China National Standard specifications for fossil power condensate polishing applications, including the China Strong Osmotic Ball Mill test.

#### **Resin Pairings**

Recommended pairing in condensate polishing:

- AmberLite™ HPR900 OH Ion Exchange Resin (macroporous)

Recommended pairing in industrial demineralization applications:

- AmberLite™ HPR8300 H Ion Exchange Resin (macroporous) – for layered bed
- AmberLite™ HPR9000 OH Ion Exchange Resin (macroporous) – for mixed bed
- AmberLite™ HPR900 OH Ion Exchange Resin (macroporous) – for mixed bed

Additional options in condensate polishing:

- AmberLite™ HPR9000 OH Ion Exchange Resin (macroporous)
- AmberLite™ HPR9000 SO<sub>4</sub> Ion Exchange Resin (macroporous)
- AmberLite™ HPR900 SO<sub>4</sub> Ion Exchange Resin (macroporous)

Additional pairing in industrial demineralization applications:

- AmberLite™ HPR9200 Cl Ion Exchange Resin (macroporous) – for mixed bed

## Applications

- Systems requiring exceptionally high osmotic stability
- Condensate polishing
- Demineralization, ideally when treating water with:
  - High oxidant level
  - High temperature on the cation resin
- Mixed bed polishing

## System Designs

Compatible with all system technologies and bed configurations

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

## Historical Reference

AmberLite™ HPR2800 H Ion Exchange Resin has previously been sold as AMBERJET™ 2800 H Ion Exchange Resin.

## Typical Properties

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### Physical Properties

Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Dark brown, opaque, spherical beads

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### Chemical Properties

Ionic Form as Shipped	H <sup>+</sup>
Total Exchange Capacity	≥ 1.70 eq/L (H <sup>+</sup> form)
Water Retention Capacity	52.0 – 58.0% (H <sup>+</sup> form)
Ionic Conversion	
H <sup>+</sup>	≥ 99%

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### Particle Size <sup>§</sup>

Particle Diameter	800 ± 100 µm
Uniformity Coefficient	≤ 1.20
< 300 µm	≤ 0.2%
< 500 µm	≤ 1.0%
> 1180 µm	≤ 1.0%

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### Stability

Whole Uncracked Beads	≥ 95%
Strong Osmotic Ball Mill Test	≥ 90%
Swelling	Na <sup>+</sup> → H <sup>+</sup> : 7%

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### Density

Particle Density	1.19 g/mL
Shipping Weight	755 g/L

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<sup>§</sup> 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 <sup>+</sup> form)	5 – 150°C (41 – 302°F)
pH Range (Stable)	0 – 14

For additional information regarding recommended minimum bed depth, operating conditions, and regeneration conditions for [mixed beds](#) (Form No. 45-D01127-en) or [separate beds](#) (Form No. 45-D01131-en) in water treatment, please refer to our Tech Facts.

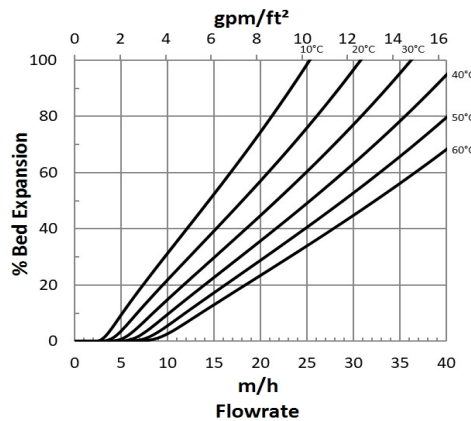
## Hydraulic Characteristics

Estimated bed expansion of AmberLite™ HPR2800 H Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLite™ HPR2800 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.

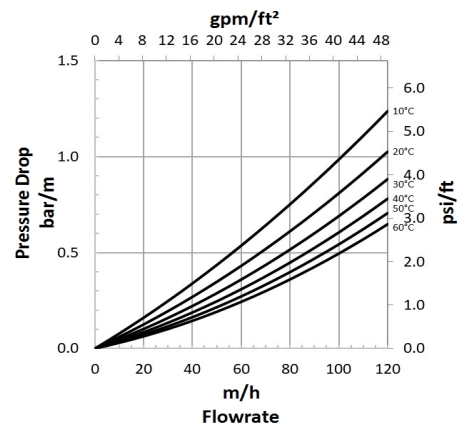
**Figure 1: Backwash Expansion**

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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