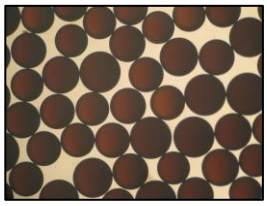
Product Data Sheet

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_4 Ion Exchange Resin (macroporous)
- AMBERLITE™ HPR900 SO_4 Ion Exchange Resin (macroporous)

Additional pairing in industrial demineralization applications:

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

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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 Physical and Chemical Properties**

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong acid cation
Functional Group	Sulfonic acid
Physical Form	Dark brown, opaque, spherical beads
Chemical Properties	
Ionic Form as Shipped	H^+
Total Exchange Capacity	≥ 1.70 eq/L (H^+ form)
Water Retention Capacity	52.0 – 58.0% (H^+ form)
Ionic Conversion	
H^+	≥ 99%
Particle Size	
Particle Diameter §	800 ± 100 µm
Uniformity Coefficient	≤ 1.20
< 300 µm	≤ 0.2%
< 500 µm	≤ 1.0%
> 1180 µm	≤ 1.0%
Stability	
Whole Uncracked Beads	≥ 95%
Strong Osmotic Ball Mill Test	≥ 90%
Swelling	$Na^+ \rightarrow H^+$: 7%
Density	
Particle Density	1.19 g/mL
Shipping Weight	755 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 (H^+ 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. 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™ 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)

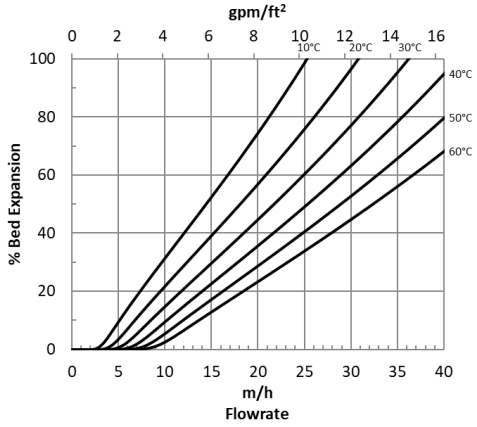
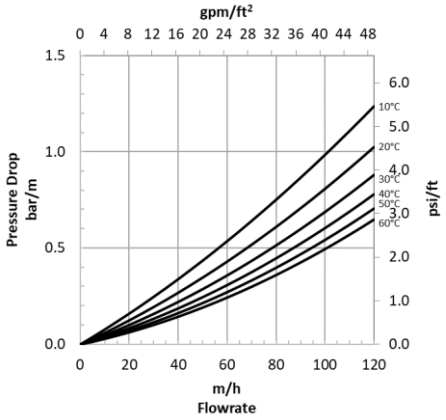


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



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For more information, contact our Customer Information Group:

Asia Pacific	+86 21 3851 4988
Europe, Middle East, Africa	+31 115 672626
Latin America	+55 11 5184 8722
North America	1-800-447-4369

www.dowwaterandprocess.com

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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