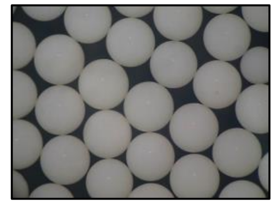
Product Data Sheet

AMBERLITE™ HPR900 SO_4 Ion Exchange Resin

Macroporous, Strong Base Anion Exchange Resin for Condensate Polishing for the Power Industry and Industrial Demineralization Applications

Description

AMBERLITE™ HPR900 SO_4 Ion Exchange Resin is specifically designed for use in condensate polishing beds at fossil-fired electric generating stations and industrial demineralization applications when a balance of operating performance, simple operation, long resin life, and cost-effective operation is required.



The macroporous structure of AMBERLITE HPR900 SO_4 provides resistance to surface fouling as well as physical, osmotic, and oxidative stresses, which allows increased resin lifetime in operation. The resin can operate reliably under the high flowrate and pressure drop conditions that are typically used in condensate polishers.

This resin is designed to be used in combination with AMBERLITE™ HPR252 H Ion Exchange Resin and AMBERLITE™ 600i Inert Resin in TRIOBED™ Condensate Polishers, providing an optimized balance of stability, operating capacity, low pressure drop, and regeneration efficiency.

When high water quality and long runtime are needed, AMBERLITE™ HPR1300 H Ion Exchange Resin is a trusted choice.

When compliance with the China National Standard specifications for fossil power condensate polishing applications, including the China Strong Osmotic Ball Mill test, is important, AMBERLITE™ HPR2800 H Ion Exchange Resin is the recommended cation pair since both resins are compliant with the standard.

Resin Pairings

Recommended pairing:
- AMBERLITE™ HPR252 H Ion Exchange Resin (macroporous)
- AMBERLITE™ HPR1300 H Ion Exchange Resin (gel)
- AMBERLITE™ HPR2800 H Ion Exchange Resin (macroporous)

Applications

- Mixed bed condensate polishing in fossil power plants
- Mixed bed polishing in industrial demineralization
- Systems requiring exceptionally high osmotic stability

Historical Reference

AMBERLITE™ HPR900 SO_4 Ion Exchange Resin has previously been sold as AMBERSEP™ 900 SO_4 Ion Exchange Resin.

Form No. 177-03747, Rev. 0
May 2018

Typical Physical and Chemical Properties**

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong base anion
Functional Group	Trimethylammonium
Physical Form	White, opaque, spherical beads
Chemical Properties	
Ionic Form as Shipped	SO_4^{2-}
Total Exchange Capacity	≥ 1.0 eq/L (Cl^- form)
Water Retention Capacity	60.0 – 68.0% (Cl^- form)
Particle Size	
Particle Diameter §	500 – 700 µm
Uniformity Coefficient	≤ 1.45
< 300 µm	≤ 0.5%
> 1180 µm	≤ 1.0%
Stability	
Whole Uncracked Beads	≥ 95%
Strong Osmotic Ball Mill Test	≥ 92%
Swelling	$Cl^- \rightarrow OH^-$ ≤ 25%
	$SO_4^{2-} \rightarrow OH^-$ ≤ 15%
Density	
Particle Density	1.09 g/mL
Shipping Weight	695 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 (OH⁻ form) ‡	5 – 100°C (41 – 212°F)
pH Range (Stable)	0 – 14

‡ Operating at elevated temperatures, for example above 60 – 70°C (140 – 158°F), may impact the purity of the loop and resin life. Contact our technical representative for details.

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™ HPR900 SO_4 Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AMBERLITE HPR900 SO_4 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)

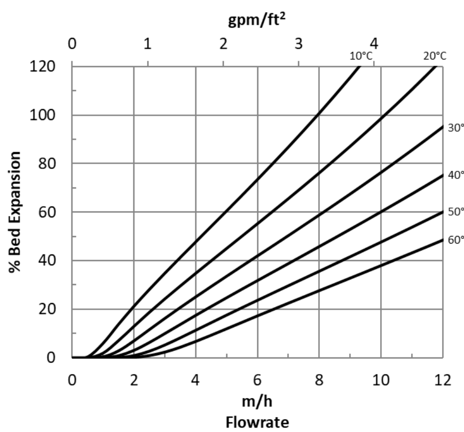
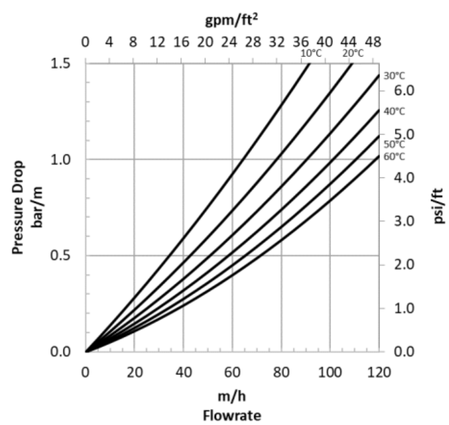


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



Product Stewardship

Dow has a fundamental concern for all who make, distribute, and use its products, and for the environment in which we live. This concern is the basis for our product stewardship philosophy by which we assess the safety, health, and environmental information on our products and then take appropriate steps to protect employee and public health and our environment. The success of our product stewardship program rests with each and every individual involved with Dow products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Customer Notice

Dow strongly encourages its customers to review both their manufacturing processes and their applications of Dow products from the standpoint of human health and environmental quality to ensure that Dow products are not used in ways for which they are not intended or tested. Dow personnel are available to answer your questions and to provide reasonable technical support. Dow product literature, including safety data sheets, should be consulted prior to use of Dow products. Current safety data sheets are available from Dow.

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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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