



DuPont™ AmberTec™ UP900 OH Ion Exchange Resin

Macroporous, Strong Base Anion Exchange Resin for Mixed Bed
Demineralization Applications for the Semiconductor Industry

Description

DuPont™ AmberTec™ UP900 OH Ion Exchange Resin is a semiconductor-grade, macroporous, Type I strong base anion. Due to the very high quality of the raw materials and the cleaning procedure carried out at the end of the manufacturing process, this resin can be used as a component of mixed beds for the production of ultrapure water. In this application, AmberTec™ UP900 OH is designed to be paired with cationic AmberTec™ UP252 H Ion Exchange Resin, or with AmberTec™ UP1400 H Ion Exchange Resin for an enhanced visible black and white separation.



Resin Pairings

Recommended pairing:

- AmberTec™ UP252 H Ion Exchange Resin (macroporous)
- AmberTec™ UP1400 H Ion Exchange Resin (gel)

Applications

Regenerable, primary mixed beds after reverse osmosis

Historical Reference

AmberTec™ UP900 OH Ion Exchange Resin has previously been sold as AmberLite™ UP900 OH Ion Exchange Resin.

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Macroporous
Type	Strong base anion
Functional Group	Trimethylammonium
Physical Form	Off-white/cream slightly pink, opaque, spherical beads
Chemical Properties	
Ionic Form as Shipped	OH ⁻
Total Exchange Capacity	≥ 0.70 eq/L (OH ⁻ form)
Water Retention Capacity	66.0 – 75.0% (OH ⁻ form)
Ionic Conversion	
OH ⁻	≥ 93%

Ultrapure Water Performance	
ΔTOC at 2h00 Rinse	≤ 10 ppb C
Density	
Particle Density	675 g/L
Particle Size §	
Particle Diameter	560 – 700 μm
Uniformity Coefficient	≤ 1.50
< 300 μm	≤ 0.5%

§ For additional particle size information, please refer to the [Particle Size Distribution Cross Reference Chart](#) (Form No. 45-D00954-en).

Suggested Operating Conditions

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.

Operating Conditions	
Temperature Range (OH ⁻ form) †	5 – 60°C (41 – 140°F)
pH Range (Stable)	0 – 14

Hydraulic Characteristics

Estimated bed expansion of DuPont™ AmberTec™ UP900 OH Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberTec™ UP900 OH 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)

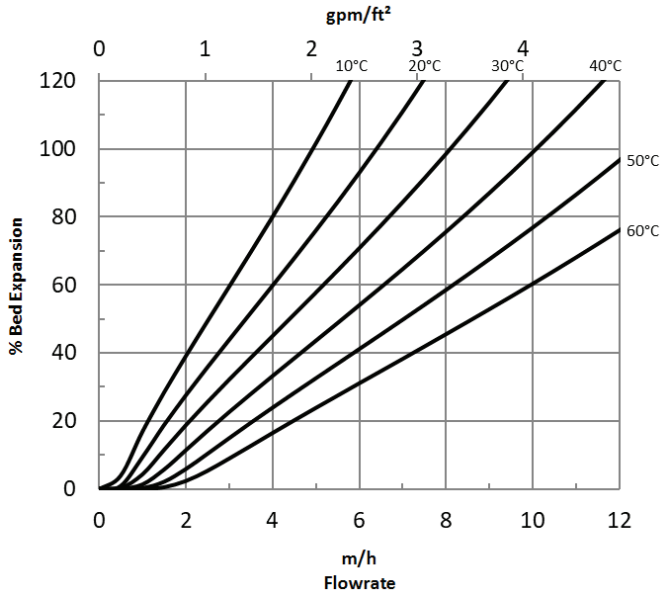
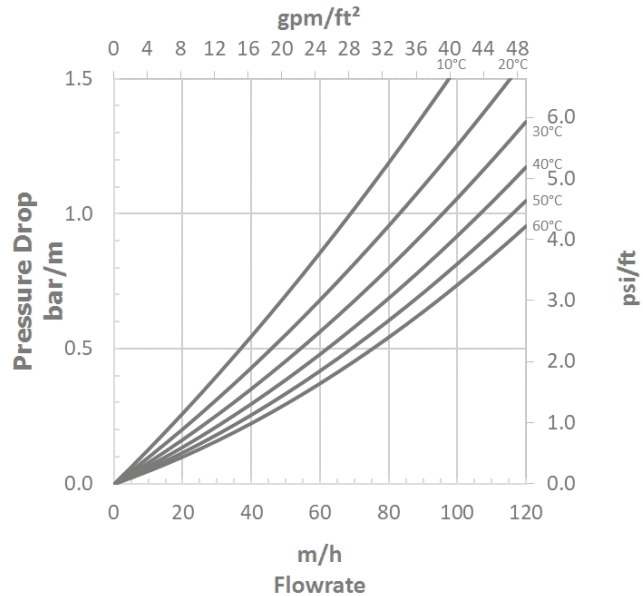


Figure 2: Pressure Drop

Temperature = 10 – 60°C (50 – 140°F)



Quality Assurance

AmberTec™ UP900 OH Ion Exchange Resin is tested by DuPont for resistivity, total organic carbon (TOC), and kinetic performance in a mixed bed with AmberTec™ UP1400 H Ion Exchange Resin. Applying the prescribed quality assurance test procedure ensures that all batches will meet stringent ultrapure water (UPW) performance requirements on these most critical parameters.

Product Stewardship

DuPont 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 DuPont products—from the initial concept and research, to manufacture, use, sale, disposal, and recycle of each product.

Regulatory Note

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

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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