DuPont™ AmberTec™ UPC7 HCO_3 Ion Exchange Resin

Semiconductor Grade Strong Base Anion for Ultrapure Chemicals Preparation

Key Features

- High cleanliness, purity and capacity.

Key Applications

- Ultrapure chemicals preparation for electronics industry.

DuPont™ AmberTec™ UPC7 HCO_3 Ion Exchange Resin is a tailored semiconductor grade strong base anion in bicarbonate form for ultrapure chemicals preparation in electronics industry. Its high cleanliness, purity, capacity and unique ion form make it particularly suitable for use in ultrapure hydrogen peroxide (H_2O_2) preparation and other similar applications.

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Strong base anion, Type I
Physical Form	White to yellow , translucent, spherical beads

Particle Size	
Particle Diameter, mean	500 – 650 µm
Uniformity Coefficient	≤ 1.30
< 300 µm	≤ 1.0%

Stability	
Whole Beads	≥ 95%
Friability	
Average	≥ 350 g/bead
> 200 g/bead	≥ 95%

Chemical Properties	
Functional Group	Trimethylammonium
Chemical Resistance	Insoluble in dilute solutions of acids or bases and common solvents: IPA, ACN, MeOH
Ionic Form as Shipped	HCO_3^-
Total Exchange Capacity	≥ 1.1 eq/L (HCO_3^- form)
Water Retention Capacity	45.0 – 60.0% (HCO_3^- form)
Ionic Conversion	
HCO_3^-/CO_3^{2-}	≥ 95%
Cl^-	≤ 0.1%

Purity	
Metals, dry basis	
Na	≤ 1 mg/kg

Density	
Shipping Weight	730 g/L

Suggested Operating Conditions

General	Details
Maximum Recommended Operating Temperature	60°C (140°F)
Maximum Recommended Operating Pressure	5 bar (72.5 psi)

Hydraulic Characteristics

Estimated pressure-drop for DuPont™ AmberTec™ UPC7 HCO_3 Ion Exchange Resin as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop as a function of service flowrate and water temperature is shown in Figure 2. These pressure drop expectations are valid at the start of the service run with clean feed and a well-classified bed.

Figure 1: Backwash Expansion

Temperature = 10 – 30°C (50 - 86°F)

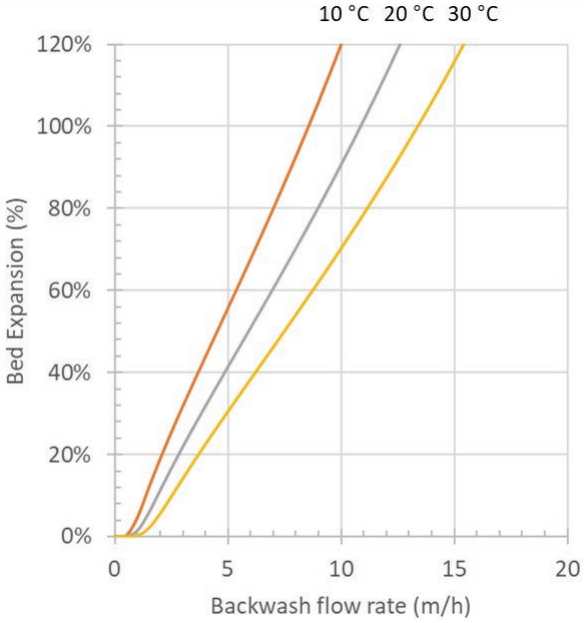
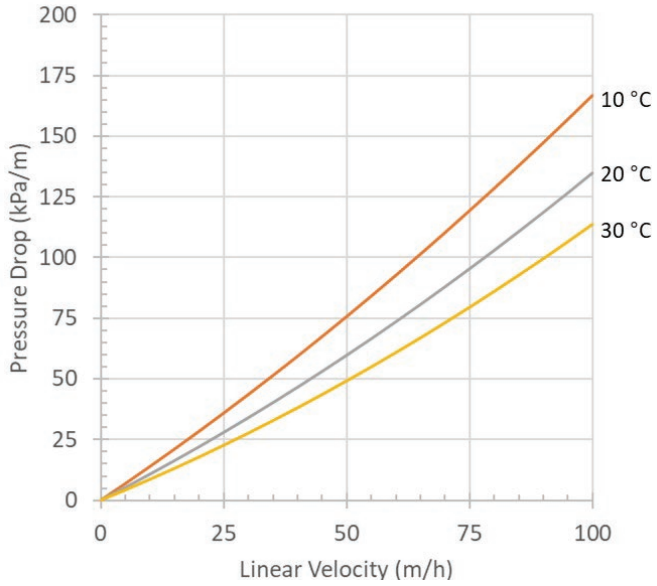


Figure 2: Pressure Drop

Temperature = 10 – 30°C (50 - 86°F)



Important Information

- DuPont™ AmberTec™ UPC7 HCO_3 or DuPont™ Duolite™ UPC7 HCO_3 is recommended to replace DuPont™ Duolite™ UP550 HCO_3.
- **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.

Regulatory Note

DuPont can provide regulatory support for DuPont™ AmberTec™ UPC7 HCO_3 Ion Exchange Resin to end users under confidentiality, upon request.

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Have a question? Contact us at:
dupont.com/water/contact-us

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