Product Data Sheet
Polymeric Adsorbent

DuPont™ AmberLite™ XAD™7HP Polymeric Adsorbent

Macroporous, Adsorbent Resin

Key Features

- Non-ionic, aliphatic acrylic resin.
- White insoluble beads. High surface area
- Excellent physical resistance and thermal stability

Key Applications

- Removal of non-aromatic compounds from polar solvents.
- Recovery of plant extracts.
- Recovery of antibiotics, enzymes and proteins.

Typical Properties

Physical Properties	
Copolymer	Crosslinked aliphatic polymer
Matrix	Macroporous adsorbent
Type	Adsorbent
Physical Form	White, translucent, spherical beads
Nitrogen BET	
Surface Area	~520 m^2/g
Average Pore Diameter	~550 Å
Total Pore Volume	~0.95cc/g
Chemical Properties	
Water Retention Capacity	61 – 69%
Particle Size §	
Particle Diameter	430 – 690 µm
< 300 µm	≤ 7.0%
> 1180 µm	≤ 8.0%
Density	
Particle Density	1.06 – 1.08 g/mL
Shipping Weight	710 g/L

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

Suggested Operating Conditions

Maximum Operating Temperature	100°C (212°F)
pH Range (Stable)	0 – 14
Bed Depth, min.	750 mm (2.5 ft)
Flowrates	
Loading	2 – 16 BV*/h
Elution/Desorption	1 – 4 BV/h
Regeneration	1 – 4 BV/h
Rinse	2 – 16 BV/h
Regenerants or Eluting Agents	• Water-miscible organic solvents (methanol, ethanol, isopropanol, acetone, etc.) for hydrophobic compounds • Pure solvents for regenerating resin fouled by oils and antifoams • Dilute bases (0.1 – 0.5% NaOH) for weakly acidic compounds • Strong bases (2 – 4% NaOH) for regenerating resins fouled with proteins, peptides • Dilute acids (0.1 – 0.5% HCl) for weakly basic compounds • Dilute oxidizing agents (< 0.5%) such as peroxide to enhance the removal of protein fouling • Buffer elution for pH-sensitive compounds • Water when adsorption is from an ionic solution • Hot nitrogen or steam for volatile materials

* 1 BV (Bed Volume) = 1 m^3 solution per m^3 resin or 7.5 gal per ft^3 resin

Hydraulic Characteristics

Estimated bed expansion of DuPont™ AmberLite™ XAD™7HP Polymeric Adsorbent as a function of backwash flowrate and temperature is shown in Figure 1.

Estimated pressure drop for AmberLite™ XAD™7HP 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 – 50°C (50 – 122°F)

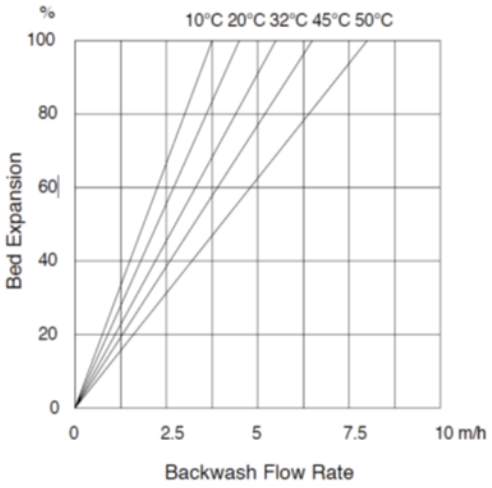
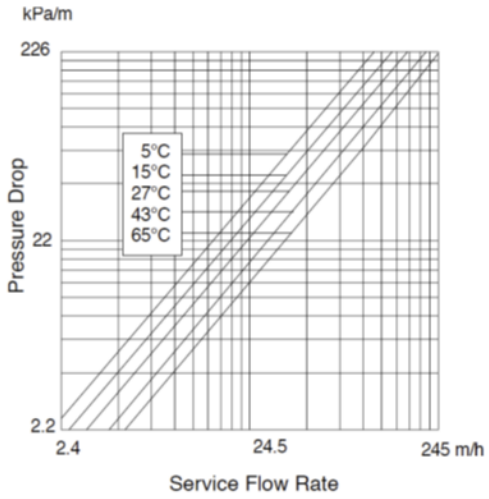


Figure 2: Pressure Drop

Temperature = 5 – 65°C (41 – 149°F)



General Information

Pretreatment

- DuPont™ AmberLite™ XAD™ 7HP Polymeric Adsorbent is shipped as a water-wet product imbibed with sodium chloride (NaCl) and sodium carbonate (Na2CO3) salts to inhibit bacterial growth. These salts must be washed from the adsorbent prior to use, and it is suggested that this be achieved by washing with water at a linear flowrate of 5 – 10 m/h until the required level is achieved.
- In some sensitive applications, residual monomeric or oligomeric compounds may be required to be removed from the adsorbent.
- A regeneration with the proposed regenerant is also recommended prior to beginning the first service cycle..
- If the regenerant is an alcohol, it must be displaced with water prior to beginning the first loading cycle

Important Information

- 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 product literature, including safety data sheets, should be consulted prior to use of DuPont products.
- **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.

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

Form No . 45-D00782-en, Rev. 4
February 2023