Product Data Sheet

AmberLite™ XAD™16HP N Polymeric Adsorbent

Macroporous, Adsorbent Resin

Description

AmberLite™ XAD™16HP N Polymeric Adsorbent is a macroporous, non-ionic, fully-hydrated, hydrophobic, styrenic resin characterized by its porosity, controlled pore size distribution, and high surface area. This resin has been prepared to meet high purity specifications and is intended for bioprocessing applications in the pharmaceutical and organic chemical industries.

AmberLite™ XAD™16HP N has excellent physical resistance and thermal stability. In addition, it has a low swelling between solvent and aqueous media and can be used in column or batch operations.

In general, AmberLite™ XAD™16HP N is used for the adsorption of water-soluble organic substances, but it is not limited to this area. AmberLite™ XAD™16HP N is particularly useful in the separation and purification of antibiotics, vitamins, steroids, amino acids, enzymes, polypeptides, etc.

Applications

- Biopharmaceutical processing separation and purification (antibiotics, vitamins, steroids, amino acids, enzymes, polypeptides, etc.)

Typical Properties

Physical Properties	
Matrix	Macroporous, crosslinked DVB
Type	Adsorbent
Functional Group	None
Physical Form	White, opaque, spherical beads
Nitrogen BET	
Surface Area	~800 m^2/g
Total Pore Volume	~0.6 mL/mL
Chemical Properties	
Ionic Form as Shipped	Not applicable
Total Exchange Capacity	Not applicable
Water Retention Capacity	60 – 68%
Particle Size [§]	
Particle Diameter	600 – 750 µm
< 300 µm	≤ 3.0%
> 1180 µm	≤ 5.0%
Density	
Particle Density	1.015 – 1.025 g/mL
Shipping Weight	675 g/L

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

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Suggested Operating Conditions

Maximum Operating Temperature	150°C (302°F)
Bed Depth, min.	700 mm (2.3 ft)
Flowrates	
Loading	2 – 16 BV*/h (usually)
Elution/Desorption	1 – 2 BV/h
Regeneration	1 – 2 BV/h
Rinse	2 – 16 BV/h
Regenerants	• Water-miscible organic solvents (methanol, ethanol, isopropanol, acetone, etc.) for hydrophobic compounds • Dilute bases (0.1 – 0.5% NaOH) for weakly acidic compounds • Dilute acids (0.1 – 0.5% HCl) for weakly basic compounds • Water when adsorption is from an ionic solution • Hot water 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

Backwashing AmberLite™ XAD™16HP N Polymeric Adsorbent with water at 15°C (59°F) at a linear velocity of 1 m/h will produce a bed expansion of 70%.

Conditioning and Limits of Use

In general, AmberLite™ XAD™16HP N Polymeric Adsorbent is ready to use after a simple regeneration followed by a rinse with 20 bed volumes of potable water.

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.

Customer Notice

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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