DuPont™ AmberChrom™ 50WX4 H 50-100 Fine Mesh Resin

Ion Exchange Resin for Purification of Small Active Molecules

Key Features

- Strong cation exchange resins based a microporous copolymer of styrene and divinylbenzene with a 4% crosslinking level.
- Controlled particle size with a low level of fines.
- Strong insoluble structure resulting in a high resistance to oxidation, reduction, mechanical wear and breakage.

Key Applications

- Solid phase acid catalysis.
- Purification of erythromycin.
- Separation of nucleotide mono-, di-, and tri-phosphates.

Typical Properties

Physical Properties	
Copolymer	Styrene-divinylbenzene
Matrix	Gel
Type	Cation exchange resins
Functional Group	Sulfonic acid
Physical Form	Opaque, white, spherical beads
Chemical Properties	
Ionic Form as Shipped	H^+
Water Retention Capacity	64-72%
Total Exchange Capacity	≥ 1.1 Eq/L

Particle Size	
< 180 µm	≤ 15%
> 500 µm	≤ 15%
Stability	
Whole Uncracked Beads	≥ 90%
Swelling	$H^+ \rightarrow Na^+$ ≤ 1%
Density	
Shipping Weight	768 g/L

Suggested Operating Conditions

Temperature Range	5 – 120°C (41 – 248°F)
pH Range	1 – 14

General Information

- The operational stability of ion exchange resins is largely defined by the particular process involved. Therefore, stability testing under actual process conditions is an important part of the resin evaluation and selection process. Ion exchange resins are tolerant of a wide range of chemical conditions and can be washed over the entire pH range without ill effects.
- In addition, ion exchange resins are tolerant of most inorganic and organic solutions with the exception of strong oxidizing agents. Solutions of nitric or chromic acid, bleach or chlorine-generating solutions, as well as peroxide should be avoided. Contact with strong oxidizing agents such as nitric acid will result in rapid oxidation. With the right set of conditions, this can result in a potentially explosive reaction.
- Slower degradation with oxygen may be catalytically induced. Therefore, exposure of resins to metal ions (including iron, manganese and copper) should be minimized in oxidizing environments. The physical stability of resins is also affected by the method of product handling. Deep resin beds, small diameter beds, very high flow rates and frequent pumping or agitation all can contribute to resin attrition breakage.

Important Information

- **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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