Product Data Sheet

DIAION™ HP21

DIAION™ HP21 is based on a unique rigid polystyrene/divinylbenzene matrix. A controlled pore size distribution and large surface area offer excellent resolution and the capacity for a wide range of molecules, from small peptides and oligonucleotides up to large proteins. DIAION™ HP21 has relatively smaller pore radius and larger specific surface area than DIAION™ HP20.

Product

Grade Name	DIAION™ HP21
Type	Synthetic Adsorbents
Matrix	Styrene-DVB, Porous

Specification

Water content	%	50 - 60
Particle Size Distribution thr. 250 µm	%	10 max.
Effective size	mm	0.25 min.
Uniformity Coefficient	-	1.6 max.

Properties

Shipping Density	g/L	680
Particle Density	g/mL	1.01
Specific Surface Area	m^2/g	640
Pore Volume	mL/g	1.3
Pore Radius	Å	110

Recommended Operating Conditions

Maximum Operating Temperature	°C	130
Operating pH Range		0 - 14
Minimum Bed Depth	mm	800
Flow rate	BV/h	Loading 0.5 - 5
	BV/h	Displacement 0.5 - 2
	BV/h	Regeneration 0.5 - 2
	BV/h	Rinse 1 - 5
Regenerant		Organic solvents for hydrophobic compounds
		Bases for acidic compounds
		Acids for basic compounds
		Buffer solution for pH sensitive compounds
		Water for an ionic solution
		Hot steam for volatile compounds

1 BV(Bed Volume)=1 m^3/m^3-resin

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Pore size distribution

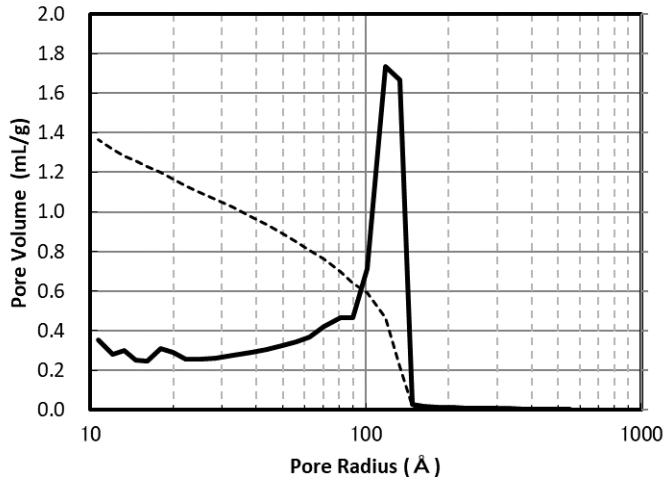

Fig. 1 Pore size distribution of HP21

Swelling Ratio In Various Solvents

Methanol	1.22
Ethanol	1.35
2-Propanol	1.32
Acetone	1.32
Toluene	1.40
Acetonitrile	1.32
Water	1.00

Hydraulic Characteristics

The approximate pressure drop at various temperatures and flow rates for each meter of bed depth of DIAION™ HP21 resin in normal down flow operation is shown in the graph below.

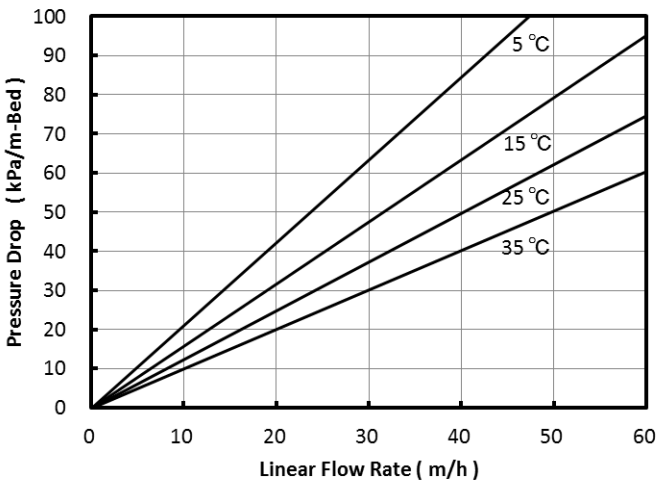

Fig. 2 Pressure Drop of HP21

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Indicative Applications

- Purification of small peptides, oligonucleotides and proteins
- Adsorption of vitamins, antibiotics, enzymes, steroids and other substance from fermentation solutions
- Decolorization of various sugar solutions
- Adsorption of fatty acids
- Removal of phenol
- Adsorption of various perfume
- Decolorization and purification of various chemicals

Storage condition

Synthetic adsorbents are at high risk of mold growth. Accordingly, synthetic adsorbents should be stored properly. Properly stored synthetic adsorbent resins may be stored for up to one year after production before the onset of any mold growth is detected. Optimal storage is with a 20% alcohol solution such as ethanol or isopropanol. A 10% or higher concentration of salt solution, such as NaCl, is also recommended to preserve new or used resin for storage. In case salt cannot be used, a 0.01 to 0.02 N NaOH solution may be acceptable as mold cannot withstand survival at pH higher than 12. Storage at freezing temperatures should be avoided as it may cause breakage or crush certain resin particles.

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