

# 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.

DIAION™ HP21 is characterized by:

- >> Unique pore size distribution
- >> Excellent batch-to-batch reproducibility
- >> Wide application
- >> High chemical and physical stability
- >> Excellent pressure/flow characteristics

## Physical and chemical properties

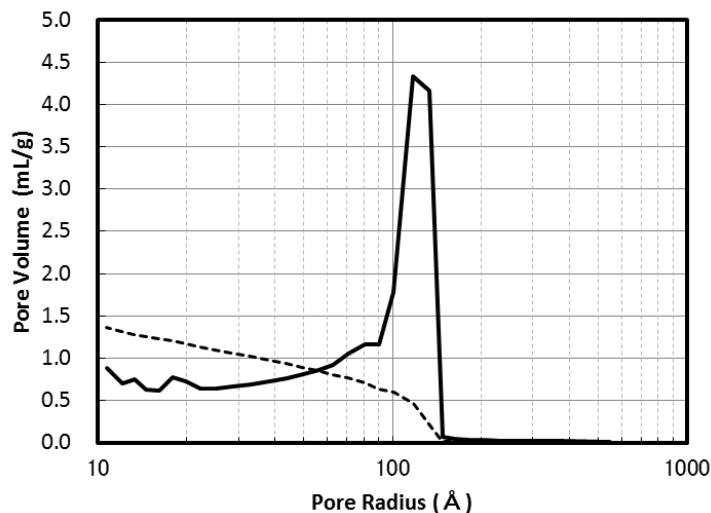
Grade Name	DIAION™ HP21	
Bead form	Spherical, porous	
Matrix	Polystyrene/divinylbenzene	
Chemical Structure		
Shipping Density*	g/L	680
Water content	%	50 - 60
Particle Size Distribution thr. 250 μm	%	10 max.
Effective size	mm	0.25 min.
Uniformity Coefficient	-	1.6 max.
Particle Density*	g/mL	1.01
Specific Surface Area*	m <sup>2</sup> /g	640
Pore Volume*	mL/g	1.3
Pore Radius*	Å	110

Note : properties with a mark "\*" are referential data.

## 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



**Pore size distribution****Fig. 1 Pore size distribution of HP21****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	Rince 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

### 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.

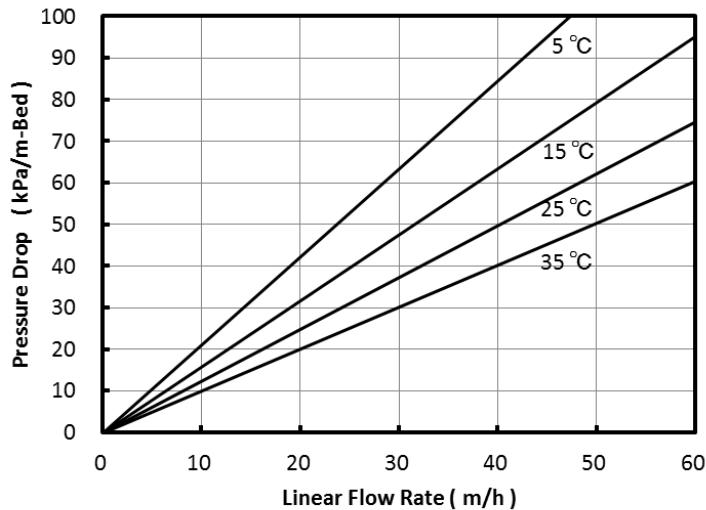


Fig. 2 Pressure Drop of HP21

### FDA status

DIAION™ HP21 may be used to process food and beverage products and isolate specialized food additives as intended and such used may be said to fully comply with the Federal Food, Drug, and Cosmetic Act.

### 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

### Notice

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