

Product Data Sheet

SEPABEADS™ SP20SS

SEPABEADS™ SP20SS is small particle grade based on DIAION™ HP20. 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. It offers nice balance of pressure flow characteristics and true chromatographic fractionation and has also been successfully applied in simulated moving bed applications for a variety of small bio molecules.

SEPABEADS™ SP20SS 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	SEPABEADS™ SP20SS		
Bead Form	Spherical, porous		
Matrix	Polystyrene/divinylbenzene		
Chemical Structure	$\begin{array}{c} \text{---CH}_2\text{---CH---CH}_2\text{---CH---} \\ \qquad \qquad \\ \text{C}_6\text{H}_5 \qquad \text{C}_6\text{H}_5 \\ \qquad \qquad \\ \text{---CH---CH}_2\text{---} \end{array}$		
Shipping Density*	g/L	680	
Water Content	%	55 - 65	
Particle Size Distribution on 75 μm	%	30 max.	
Particle Size Distribution 63 - 75 μm	%	55 min.	
Particle Size Distribution thr. 63 μm	%	15 max.	
Particle Density*	g/mL	1.01	
Specific Surface Area*	m ² /g	560	
Pore Volume*	mL/g	1.2	
Pore Radius*	Å	290	

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

Swelling ratio in various solvents

Methanol	1.21
Ethanol	1.21
2-Propanol	1.29
Acetone	1.30
Toluene	1.26
Acetonitrile	1.24
Water	1.00

Pore size distribution

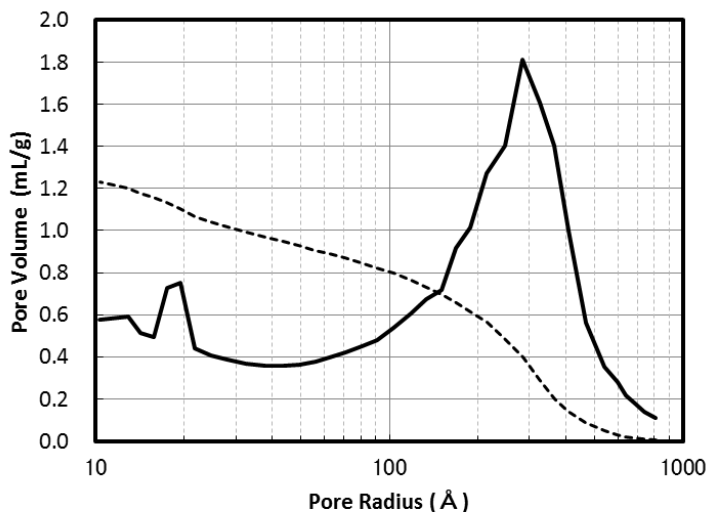


Fig. 1 Pore size distribution of SP20SS

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™ SP20SS resin in normal down flow operation is shown in the graph below.

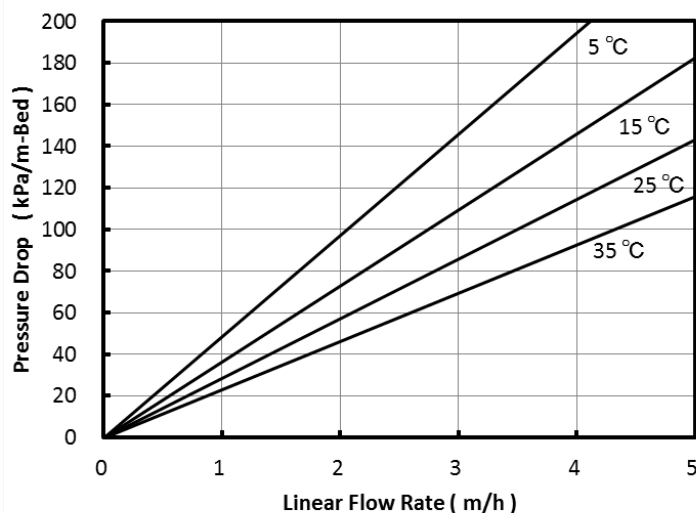


Fig. 2 Pressure Drop of SP20SS

FDA status

SEPABEADS™ SP20SS 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

Storage condition

Synthetic adsorbents are recommended to store properly in order to avoid a high risk for mold growth. The proper storage typically allows any synthetic adsorbent resin to last for a year after production before onset of any such growth.

The best storage condition is with 20% of alcohol 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 long storage.

In case salt cannot be used, a 0.01 to 0.02 N of NaOH solution could be accepted as mold cannot withstand survival at pH higher than 12.

Storage at freezing temperature should be avoided at all cost as it may cause breakage or crush of resin particles.

Notice

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