

## Product Data Sheet

## SEPABEADS™ SP700

SEPABEADS™ SP700 is highly porous styrenic adsorbents. It has highest surface area in SEPABEADS™ series and a narrower pore size distribution than DIAION™ HP20. It can be used for various application.

SEPABEADS™ SP700 is characterized by:

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

## Physical and chemical properties

Grade Name	DIAION™ SP700	
Bead form	Spherical, porous	
Matrix	Poly divinylbenzene / ethylvinylbenzene	
Chemical Structure	$\begin{array}{c} \text{---CH}_2\text{---CH---CH}_2\text{---CH---} \\   \qquad \qquad   \\ \text{C}_6\text{H}_5 \qquad \text{C}_6\text{H}_4\text{---CH}_2\text{CH}_3 \\   \qquad \qquad   \\ \text{---CH---CH}_2\text{---} \end{array}$	
Whole Bead Count	-	95 min.
Shipping Density*	g/L	690
Water content	%	60 - 70
Particle Size Distribution thr. 250 μm	%	5 max.
Effective size	mm	0.25 min.
Uniformity Coefficient	-	1.6 max.
Particle Density*	g/mL	1.02
Specific Surface Area	m <sup>2</sup> /g	1100 min.
Pore Volume*	mL/g	2.2
Pore Radius*	Å	90

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

## Swelling ratio in various solvents

Methanol	1.04
Ethanol	1.05
2-Propanol	1.07
Acetone	1.07
Toluene	1.05
Acetonitrile	1.05
Water	1.00

### Pore size distribution

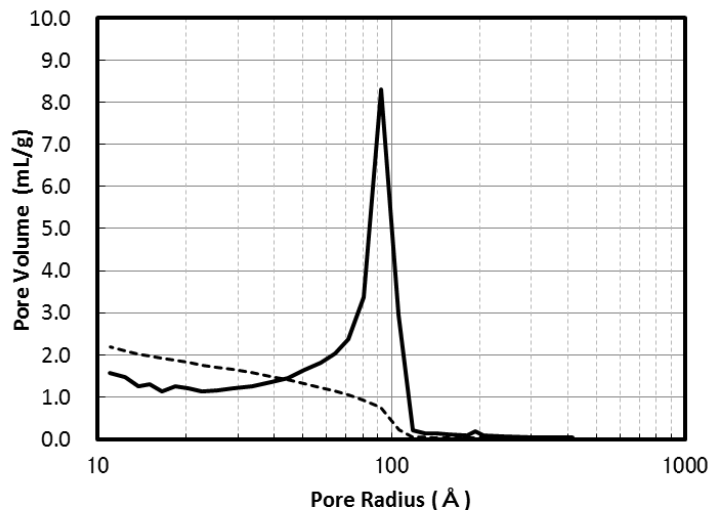


Fig. 1 Pore size distribution of SP700

### 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

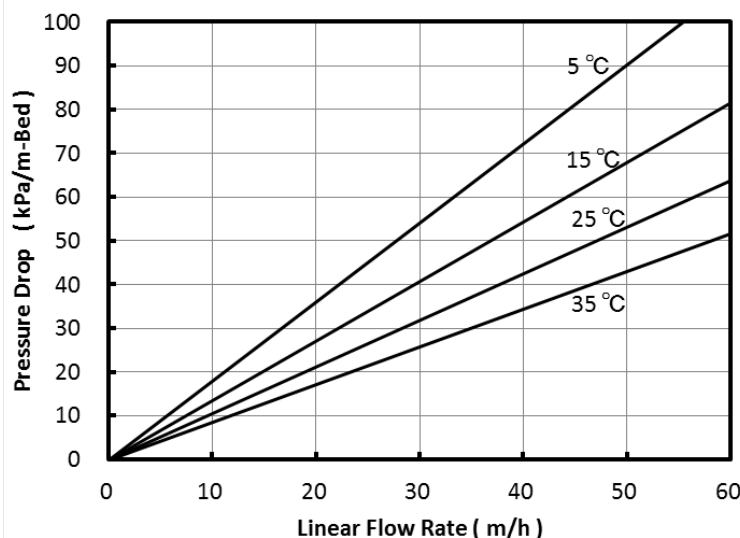
Buffer solution for pH sensitive compounds

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 SEPABEADS™ SP700 resin in normal down flow operation is shown in the graph below.



**Fig. 2 Pressure Drop of SP700**

### FDA status

SEPABEADS™ SP700 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 juices
- Removal of naringin and other bittering agents
- Purification of small peptides, oligonucleotides and proteins
- Adsorption of vitamins, antibiotics, enzymes, steroids and other substance from fermentation solutions
- Decolorization and purification of various chemicals

### Storage condition

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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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