Seplife® DX 25/40

1. Description

Seplife® DX 25/40 is a hydrophilic inert media with controlled pore size distribution used for desalting and buffer exchange in industrial applications, prepared by crosslinked dextran.

- Designed for the removal of contaminants as a preliminary step to other chromatography techniques
- Minimize the dilution step
- The medium has an exclusion range of 100-5000Da globular proteins, with an exclusion limit of approximately 5000Da
- Supplied in dry form
- Regulatory Support File (RSF) is available for Seplife® DX 25/40

Seplife® DX 25/40 is a size exclusion chromatographic resin based on crosslinked dextran with a small particle size (20-80 micron).

2. Properties

Product	Seplife® DX 25/40
Appearance	White spherical beads
Type	Gel Filtration
Matrix	Crossed linked dextran
Particle size (dry, μm)	20-80
Swelling property (ml/g)	4.5-6.5
pH stability	3-10 (operational), 2-13 (CIP)
Chemical Stability	Stable in all common aqueous buffers; 1M sodium hydroxide; 8M urea; 6M guanidine hydrochloride; 70% ethanol.
Flow rate* (cm/h)	max. 180
Shipped as	dry

*Testing conditions: Chromatography column 16mm×200mm; column bed height 15cm; temperature 25° C; mobile phase 0.1M NaCl

3. Exclusion limit test*of Seplife® DX 25/40

Exclusion limit of Seplife®DX 25/40

Sample	Retention volume (ml)	Molecular weight	Log M	K_{av}
Benzyl alcohol	114.81	108	2.03	1.00
PEG400 Bisbenzyl ether	98.43	580	2.76	0.80
PEG600 Bisbenzyl ether	81.60	780	2.89	0.60
PEG1000 Bisbenzyl ether	65.72	1180	3.07	0.40
PEG1540 Bisbenzyl ether	55.14	1620	3.21	0.28
PEG4000 Bisbenzyl ether	33.81	4180	3.62	0.02
PEG6000 Bisbenzyl ether	32.64	6180	3.79	0.00
PEG7000 Bisbenzyl ether	32.63	7180	3.86	0.00
PEG10000 Bisbenzyl ether	32.42	10180	4.01	0.00
PEG20000 Bisbenzyl ether	32.41	20180	4.31	0.00

*Testing conditions: Chromatography Column 16mm×200mm, mobile phase 0.15M NaCl, velocity 1ml/min

4. Instructions

4.1 Product pretreatment

Dextran gel filtration chromatography media is supplied as a dry powder, and must be swelled in excess buffer solution before use (swell overnight at room temperature, or in boiling water for 1 hour.) Avoid magnetic stirring, or stirring with overhead stirrer or glass rod that may cause damage to the chromatography media. After swelling, adjust with buffer to form a thick slurry, about 75% (volume percentage), and then degas if possible.

4.2 Column packing

Column loading should be done according to standard operating procedures. Before packing the column, it is necessary to ensure that each material is at its working temperature, and the temperature of the buffer and media must be the same (room temperature). Dextran gel filtration chromatography media comply with Darcy's law, if the flow rate is doubled, the column pressure will also be doubled.

4.3 Equilibration

Equilibrate the column with an appropriate 2-5 column volume buffer. Ensure the conductivity and pH of the effluent are the same as the equilibration buffer.

4.4 Sample feeding

1) The separation of sample components by the media is carried out according to the molecular size of the components, and the ones with the larger molecular size flow out first.

2)The sample feeding for gel filtration is generally 5% of the column bed in volume, and we recommend that the initial sample feeding be controlled at 1-2% of the bed volume, which can be adjusted depending on the separation situation. When desalting, the sample feeding can reach 20% of the column bed volume. The selection of column height is also related to the separation requirements. The column height should be

controlled below 40 cm. Too high a gel layer will cause greater back pressure and should be avoided as much as possible.

Difficult-to-separate substances must have a certain column height and flow rate control. A 5:1 height-to-diameter ratio for desalting is recommended.

3) Samples with particulates and precipitate should be filtered or centrifuged before the chromatography purification. The viscosity of the sample should not be too high, otherwise the separation efficiency will be reduced.

4.5 Elution

Elution can be done with salt-free water or with equilibration buffer as eluent, depending on the scope of the experiment. Complete separation can be achieved by adding NaCl to the equilibration buffer for gradient elution, or salt gradient elution.

4.6 Cleaning-In-Place (CIP)

After the media is used 10 times, a CIP is performed to remove the precipitated and stubborn residual proteins in the column bed. The method is to backwash with 4 bed volumes of 1M NaOH at 40cm/h, and then regenerate with at least 3 bed volumes of equilibration buffer.

5. Storage

Seplife® DX 25/40 dry powder should be stored in a dry, ventilated and clean place at 4-30℃; the hydrated media should be stored in 20% ethanol solution. Avoid contact with oxidants and do not freeze.

6. Transportation

Avoid sunlight, rain, and heavy pressure during transportation. It is strictly forbidden to transport with toxic and hazardous materials.

7. Precautions

7.1 Samples must be clear of particles.

7.2 The sample and chromatography media must be thoroughly equilibrated with equilibration buffer before column chromatography can be performed.

7.3 The loaded column bed must have a flat surface, with no channel flow or air bubbles, otherwise it should be reloaded.

7.4 During the elution process, the flow rate should be strictly controlled. It should not be too fast.

7.5 During sample loading and the entire elution process, prevent the column surface from drying out.

7.6 This product should avoid contact with oxidants and avoid long exposure to air.

7. Ordering information

Product Name	References	Pack Size
Seplife® DX 25/40	D1007210F	25g
	D1007211F	100g
	D1007212F	500g
	D1007213F	1kg
	D1007214F	5kg
	D1007215F	10kg

Production date: See label

Expiry date: 5 years, under proper storage conditions

Manufacturer: Sunresin New Materials Co. Ltd.
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