

## 1. Description

Seplife® RP LXMS 7 is a high pressure chromatography polymeric resin for reversed phase (RP) chromatography characterized by strong chemical stability and high rigidity for use in polishing steps requiring use of organic solvents and high resolution.

- Highly uniform particle size providing high resolution, high flow rate and high dynamic binding capacity
- Styrene/divinylbenzene non functionalized resin characterized by high hydrophobicity, high surface area, excellent chemical and physical stability
- Suitable for the separation of low molecular weight proteins, peptides, oligonucleotides and other small and medium size molecules by RP chromatography
- High stability to CIP, organic solvents and pH (1-14)
- Regulatory Support File (RSF) is available for Seplife® RP LXMS 7

Seplife® RP LXMS 7 is a polymeric resin for RPC based on styrene/divinylbenzene with a highly uniform particle size (7 micron) and excellent chemical and physical stability.

## 2. Properties

Product	Seplife® RP LXMS 7
Appearance	White spherical beads
Matrix	Styrene / Divinylbenzene
Particle size range (µm)	7.0±1.0
Typical pore size (Å)	300
pH stability	1-14
Chemical stability	Stable in commonly used aqueous buffers 1.0 M HCl, 100% ethanol, 100% methanol, 100% acetone, 1.0 M NaOH, 0.1% TFA in acetonitrile, 100% isopropanol, 100% tetrahydrofuran
Flow rate* (cm/h)	≥180 (4MPa)
Dynamic binding capacity** (mg/ml)	≥36
Maximum Pressure resistance	10.0 MPa / 100 Bar
Shipped as	Slurry in 20% ethanol solution

\*Testing conditions: Chromatography column 10mm×200mm; Column bed height 200mm; Packing pressure 10.0 MPa; Mobile phase 100% MeOH.

\*\*Testing conditions: Chromatography column 4.6mm×250mm; Column bed height 250mm; Packing pressure 10.0 MPa; Mobile phase water; Sample: Vitamin B12; Retention time 4 min.

### 3. Instructions

#### 3.1 Column packing

To ensure the Seplife® RP LXMS 7 material is fully dispersed and free of agglomerates, the packing slurry can be shaken, bottled rolled or ultrasonicated for approximately five minutes. Prepare for column packing as follows:

The column volume (V) of the chromatographic column,  $V=A_c \times L$ ;  $A_c=\pi \times r^2$ .

$A_c$ : Cross-sectional area of the column;  $L$ : column height;  $r$ : column radius

Agitate the resins to form a homogenate and measure the desired mass or volume, approximately 1.1 - 1.15 times the column volume.

Replace 20% ethanol with 100% methanol or 80% acetonitrile solution and equilibrate overnight.

Before packing the column, adjust the homogenate concentration to 50 - 70% with 100% methanol or 80% acetonitrile solution, and pour the entire volume of homogenate into the DAC chromatography column.

Complete the assembly of the column and operate the packing station according to the instructions supplied. A piston packing pressure of approximately 0.8-2.0 MPa is recommended. Make sure that the packing pump pressure has been calculated using the correct ratio for the column ID/packing station being used to give a piston pressure.

Once column packing is complete, the flow of packing solvent has ceased and the pump has stopped, allow the column to stand/equilibrate for 10 minutes.

The column plunger should be locked in the compressed position so that the column can be operated in the Static Axial Compression (SAC) mode.

The packed column is now ready for use. It can be used while still assembled on the packing station or it can be undocked for use in a purification facility .

#### 3.2 Column Efficiency Evaluation

After packing, clean the chromatographic column with 3-5 column volumes (CV) of 100% methanol or 80% acetonitrile solution. The flow rate should be controlled at 120-180cm/h to balance and perform column efficiency test.

The test method for column efficiency of RP chromatography columns is as follows:

Sample: 1:9(V:V) Acetone :100% methanol or 80% acetonitrile

Loading volume: 1 % of column volume;

Eluent: 100% methanol or 80% acetonitrile solution, 1-2 CV;

Linear flow rate: 120-180 cm/h;

Detection: UV @ 254 or 280 nm ;

The prep-HPLC system geometry, including dead volume, will significantly affect the plate count determination.

### **3.3 Equilibration**

After loading the column, equilibrate with the mobile phase for 3-4 CV, and control the flow rate at 120-180cm/h until the conductance and pH of the flow-through remain unchanged before loading the sample.

### **3.4 Sample feeding**

The solid sample can be prepared by dissolving in the equilibrium solution. Low-concentration sample solutions should be concentrated in advance as much as possible. High concentration sample solution can be diluted by the equilibrium solution. To avoid clogging of the column, samples should be processed by centrifugation or membrane filtration. The feed amount is calculated according to the capacity of the resin and the content of the target molecule in the feed solution. Before loading, make sure that the sample buffer should be as consistent as possible with the equilibration solution. A small amount of sample feed can be used for the first experiment, then the amount of sample feed can be increased according to the retention time and peak shape of the target molecule.

### **3.5 Elution**

Use 2-10 CV of methanol, ethanol, acetonitrile, acetone, etc. (aqueous) solution to elute; use acid, caustic or buffer to adjust the pH or use a combination both to elute the molecules of interest.

### **3.6 Regeneration and CIP**

First use acetonitrile, methanol, ethanol, acetone, NaOH in ethanol and other solvents to wash (3-4 CV) according to the operating flow rate, and then use equilibration solution to rinse (3-4 CV).

## **4. Storage**

Chromatography resins that are not for immediate use should be stored in 20% ethanol at 4-30 °C.

## **5. Transportation**

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

**6. Ordering information**

Product Name	References	Pack Size
Seplife® RP LXMS 7	PS00042X(7)2-1	25ml
	PS00042X(7)2-2	100ml
	PS00042X(7)2-3	500ml
	PS00042X(7)2-4	1L
	PS00042X(7)2-5	5L
	PS00042X(7)2-6	10L

*Production date: See label*

*Expiry date: 5 years, under proper storage conditions*

**Manufacturer: Sunresin New Materials Co. Ltd.**

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