Thermo SCIENTIFIC

Read This First!

MAbPac SEC-1 COLUMNS

Quick Start

MAbPac SEC-1, 5 µm, Analytical, (7.8 × 300 mm) P/N 088460
MAbPac SEC-1, 5 µm, Analytical, (4 × 300 mm) P/N 074696
MAbPac SEC-1, 5 µm, Analytical, (4 × 150 mm) P/N 075592
MAbPac SEC-1, 5 µm, Guard, (4 × 50 mm) P/N 074697
MAbPac SEC-1, 5 µm, Analytical, (2.1 × 300 mm) P/N SP6937
MAbPac SEC-1, 5 µm, Analytical, (2.1 × 150 mm) P/N SP6938

1. Overview

Thermo Scientific™ MAbPac™ SEC-1 is a size exclusion chromatography (SEC) column specifically designed for separation and characterization of monoclonal antibodies (mAbs).

2. Main features of the MAbPac SEC-1 Column

- Proprietary hydrophilic bonded layer results in minimal non-desired interactions between proteins and the stationary phase.
- Stable surface bonding leads to low column bleed and compatibility with MS, ELSD and Corona® CAD detection.
- Rugged, reproducible column packing.
- Superior performance for the analysis of monoclonal antibodies, aggregates, and their fragments.

3. Specifications and Recommended Operational Parameters

Parameter	Recommendation
Flow Rate Range:	760 – 1,000 µL/min for the 7.8 mm ID columns 200 – 300 µL /min for the 4.0 mm ID columns 50 – 75 µL /min for the 2.1 mm ID columns
Long Term Storage Solution	20% acetonitrile in D.I. water.
Common Mobile Phases	Phosphate buffer with NaCl, e.g. 50 mM phosphate buffer (pH 6.8) + 0.3 M NaCl Good's buffer with NaCl, e.g. 20 mM MES buffer (pH 6.1) + 0.3 M NaCl, Ammonium formate or ammonium acetate solutions, pH 5 – 7;
Solvents Compatibility	Compatible with 100% organic solvents
Temperature Range:	20 – 30 °C
Pressure Limit	1,000 psi for 300 mm columns 600 psi for 150 mm columns
pH Range	2.5 – 7.5

4. Operational Guidelines

- Operate the column within operating parameters and specifications (described in Section 3).
- Avoid any sudden pressure surge. Watch the flow setting on the pump before connecting to the column.
- When not in use, stop the flow and store the column as recommended.
- Use a guard column when injecting crude protein samples; to protect the analytical column and to extend column lifetime. Dirty, particulate samples should be cleaned with a 0.2 µm filter before applying onto the column.
- Use the column in the direction of flow marked on the column.
- Choice of buffer:
    - For UV detection, use 20 mM MES (pH 6.1) or phosphate buffer (pH 6.8) containing 150-300 mM NaCl.
    - For MS or CAD detection, use 20 – 100 mM ammonium acetate or ammonium formate buffer (pH 5 – 7).
    - *Note: salt concentration should be below 0.5 M.*
- Column conditioning: it is a common practice that a new SEC column should be conditioned with a protein of user's choice, to minimize the undesired active sites in the column.
    - Repeatedly inject (10 µL) of concentrated protein standards (~5 – 10 mg/mL) onto the column and monitor the peak height and area for each injection. The column is considered fully conditioned when constant peak area and peak height are observed.