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ACCLAIM™ SEC COLUMNS

Acclaim Size Exclusion Chromatography (SEC)

Quick Start

Acclaim SEC-1000, 7µm, Analytical, (4.6 x 300 mm) P/N 079724
Acclaim SEC-1000, 7µm, Analytical, (7.8 x 300 mm) P/N 079721
Acclaim SEC-1000, 7µm, Analytical, (7.8 x 150 mm) P/N 079722

Acclaim SEC-300, 5µm, Analytical, (4.6 x 300 mm) P/N 079723
Acclaim SEC-300, 5µm, Analytical, (7.8 x 300 mm) P/N 079725
Acclaim SEC-300, 5µm, Analytical, (7.8 x 150 mm) P/N 079726

Acclaim SEC-1000,7µm, Guard, (4.6 x 33mm) P/N 082739
Acclaim SEC-300, 5µm, Guard, (4.6 x 33mm) P/N 082740

1. Overview

Acclaim SEC-300 and SEC-1000 are high-efficiency and high-resolution size exclusion chromatography (SEC) columns specifically designed for separation of water-soluble polymers and oligomers, e.g. polyethylene glycols, polyvinyl alcohols, polyvinyl pyrrolidones, dextrans, polyacrylic acids, etc.

2. Highlights

- Proprietary mono-dispersed multi-pore hydrophilic resin: no inflection points in calibration curve
- Two columns with different pore sizes cover wide linear range (100 to 1,000,000 Dalton)
- Availability of small particle sizes packed in 4.6 x 300-mm dimensions allows for high resolution analysis at reduced solvent consumption
- Stable surface bonding with low column bleed and compatibility with UV, RI, MS, ELSD and Corona® CAD detection

3. Physical data

	Acclaim SEC-300	Acclaim SEC-1000
Substrate	Hydrophilic polymethacrylate resin	Hydrophilic polymethacrylate resin
Particle shape	Spherical	Spherical
Particle size	5-µm	7-µm
Pore size	300-Å (multi-pore)	1000-Å (multi-pore)
Separation range for PEO*	100 – 50,000 Daltons	1,000 – 1,000,000 Daltons
Exclusion limit for PEO*	50,000 – 150,000 Daltons	3,000,000 – 7,500,000 Daltons

*PEO = polyethylene oxides

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4. Specifications and Recommended Operational Parameters

Column	Dimension (mm)	Flow Rate (mL/min)	Pressure Limit (psi)	Temperature (ºC)	pH Range	Sample Loading (µL)
SEC-300, 5µm	4.6x300	≤ 0.35	< 1200	< 60	2 – 12	< 100
SEC-300, 5µm	7.8x300	≤ 1.00	< 1200	< 60	2 – 12	< 300
SEC-300, 5µm	7.8x150	≤ 1.00	< 700	< 60	2 – 12	< 150
SEC-1000, 7µm	4.6x300	≤ 0.35	< 600	< 60	2 – 12	< 100
SEC-1000, 7µm	7.8x300	≤ 1.00	< 600	< 60	2 – 12	< 300
SEC-1000, 7µm	7.8x150	≤ 1.00	< 350	< 60	2 – 12	< 150

5. Operational Guidelines

- Operate the column according to “Operational Parameters” described above.
- Follow the direction of flow that is marked on the column. Reverse flow should be avoided except for removal of inlet blockage.
- Avoid sudden pressure surge on to the column.
- Avoid air on to the column.
- Use guard columns to protect the analytical column to prolong column lifetime.
- It is recommended that Acclaim SEC columns be used in mobile phase containing no more than 20% organic solvents. When changing solvents, make gradual changes in solvent composition to protect the bed from compression.
- Salt concentration in mobile phase should be lower than 0.5 M.
- Column cleaning:
    1. Flush the column with D.I. water for at least 3 column volumes. Note: flow rate is 0.15 mL/min for 4.6-mm i.d. column and 0.45 mL/min for 7.8-mm i.d. column.
    2. Flush the column with a 0.5 M salt solution (a higher concentration up to 1.0 M can be used depending on the nature of the contaminants) for at least 5 column volumes. For poly-cationic species, the solution should be acidic (~pH3). For anionic or neutral contaminants, the solution pH should be in the range of 5 – 8.
    3. Flush the column with a 0.01 – 0.05 M salt or buffer solution containing 20% solvent (e.g. methanol or acetonitrile) for at least 5 column volumes. For hydrophobic cationic polymers, the solution should be acidic (~pH3). For anionic or neutral contaminants, the solution pH should be in the range of 5 – 8.
    4. Flush the column with D.I. water for at least 3 column volumes.
    5. Flush the column with the mobile phase.
- Column storage: 0.05 – 0.1% NaN_3 aqueous solution, or up to 20% solvent (e.g. acetonitrile, methanol or ethanol) aqueous solution for longer term (> 24 hours); or mobile phase for short term (< 24 hours).