

ProPac Elite WCX 5 µm Columns

QUICK START

ProPac Elite WCX, 5 µm, 4 × 250 mm (P/N: 303025)
 ProPac Elite WCX, 5 µm, 4 × 150 mm (P/N: 302972)
 ProPac Elite WCX, 5 µm, 4 × 50 mm (P/N: 302973)
 ProPac Elite WCX, 5 µm, 2 × 250 mm (P/N: 303026)
 ProPac Elite WCX, 5 µm, 2 × 150 mm (P/N: 303027)
 ProPac Elite WCX, 5 µm, 2 × 50 mm (P/N: 303028)

1. Overview

The Thermo Scientific™ ProPac Elite WCX 5 µm column is a weak cation exchange liquid chromatography column designed for analysis of proteins, monoclonal antibodies (mAbs) and their associated variants. The non-porous resin particle and unique column chemistry provide excellent performance under a broad range of pH, temperature, and mobile phase compositions using either salt gradients or pH gradients. For best performance, operate the column according to the parameters in this Quick Start. For additional information on column operation or method design for applications, consult the column manual on www.thermofisher.com.

2. Main features of the ProPac Elite WCX 5 µm Column

- Superior resolution for proteins, monoclonal antibodies, and associated charge variants
- High efficiency with reproducible separations
- High recovery with low carry-over
- Compatible with Thermo Scientific™ CX-1 pH Gradient Buffers

3. Specifications and Recommended Operational Parameters

Column	Recommended Flow Rate ¹ mL/min	Max Column Pressure ² psi (bar)	Temperature °C	pH ³
4 × 250mm	0.4-0.8	4500 (310)	10 – 60°C	2 (5) ³ - 12
4 × 150mm	0.4-1.0			
4 × 50mm	0.1-0.2			
2 × 250mm	0.1-0.25			
2 × 150mm	0.1-0.8			
2 × 50mm	0.1-0.8			

¹For any given flow rate, the maximum pressure across the column body should not exceed the maximum recommended pressure to avoid damaging the packed bed.

²The column pressure for a given flow rate is calculated as the pressure of the system with column minus the pressure of system with union in place of column.

³The column materials are stable from pH 2 – 12; however, the carboxylate groups will become protonated below pH 5 (pKa carboxylate ~ 4.5) resulting in reduced column capacity and loss of cation exchange functionality.

Parameter	Recommended
Salt Gradient Buffers ¹	<ul style="list-style-type: none"> MES, MOPS, or other Good's buffers
pH Gradient Buffers ¹	<ul style="list-style-type: none"> Thermo Scientific™ CX-1 pH Gradient Buffers
Minimum Salt Concentration	<ul style="list-style-type: none"> 20 mM NaCl to avoid high pressure that can damage the column solid phase NEVER use pure deionized water on the column as this will result in irreversible damage Nonionic, anionic or zwitterionic detergents.
Detergent Additives	<ul style="list-style-type: none"> CAUTION: Do not use cationic detergents as they will irreversibly bind to the column and reduce the separation power
Organic Solvent Compatibility	<ul style="list-style-type: none"> Up to 10% acetonitrile, methanol, or isopropyl alcohol CAUTION: organic solvents can significantly increase the column backpressure. Flush the column with 1 M NaCl in your buffer of choice followed by injections (10-50µL) of 100 mM NaOH
Cleaning agents	<ul style="list-style-type: none"> For metal contamination (Fe, Cu, etc.) removal flush the column for 12 hours with 10 mM EDTA + 50 mM NaCl adjusted to pH 8
Storage solution	<ul style="list-style-type: none"> Short term: ≥ 20 mM NaCl and your application buffer Long term: ≥ 20 mM NaCl and your application buffer with 0.1% sodium azide added

¹ Phosphate based buffers are not recommended as they are unable to buffer the column solid phase.

² For ordering information on Thermo Scientific™ CX-1 pH Gradient Buffers please consult www.thermofisher.com.

4. Operational Guidelines

- Operate the column within the operating parameters and specifications described above.
- Use the column in the direction of flow marked on the column label.
- Slowly increase and decrease the flow rate using a ramp rate of 1/2 the max recommend flow rate.
- Column conditioning: Before the first use or after storage, flush the column with 10 column volumes of mobile phase followed by 2 blank runs with the desired mobile phase before running the sample.
- Use a MINIMUM of 20 mM NaCl during operation to avoid high pressures that can damage the column
- CAUTION: Flowing pure DI water on the column will cause high pressure and irreversible column damage.
- Adjust mobile phase, temperature, flow rate and gradient slope for best resolution and fast separation. Refer to section 3 for further details on method development for salt and pH gradients.



NEVER use pure deionized water on the column as this will result in irreversible column damage!

5. Ordering Information

Product	P/N
ProPac Elite WCX, 5 µm, 4 × 250 mm	303025
ProPac Elite WCX, 5 µm, 4 × 150 mm	302972
ProPac Elite WCX, 5 µm, 4 × 50 mm	302973
ProPac Elite WCX, 5 µm, 2 × 250 mm	303026
ProPac Elite WCX, 5 µm, 2 × 150 mm	303027
ProPac Elite WCX, 5 µm, 2 × 50 mm	303028
ProPac Elite WCX, 5µm, Analytical, 4 × 250 mm, 3 Columns from 1 Lot	303061
ProPac Elite WCX, 5µm, Analytical, 4 × 250 mm, 3 Columns from 3 Lots	303062
ProPac Elite WCX, 5µm, Analytical, 4 × 150 mm, 3 Columns from 1 Lot	302976
ProPac Elite WCX, 5µm, Analytical, 4 × 150 mm, 3 Columns from 3 Lots	302977