

ULTRON ES-CD Series

Instruction Manual

1. Introduction

Thank you for purchasing an ULTRON ES-CD series column for High-performance liquid chromatography. ULTRON ES-CD series are enantiomer separation columns based on silica gel bonded with β -cyclodextrin or derivatized β -cyclodextrin via a spacer.

ULTRON ES-CD series columns, which are manufactured under highly controlled conditions, must pass a series of strict tests before being accepted for shipment. To ensure optimal performance and durability of the column, please read these instructions carefully before using this column.

- ULTRON ES-CD-B column is designed to confirm separation of Bepotastine *R* enantiomer and Bepotastine in accordance with Japanese Pharmacopoeia.
- ULTRON ES-CD-F column is designed to confirm separation of Fexofenadine related compound B and Fexofenadine in accordance with US Pharmacopoeia.
- ULTRON ES-CD-EP column is designed to confirm separation of Epinephrine and S-Epinephrine in accordance with US Pharmacopoeia.

2. Specifications

Descriptions	Column name	Particle size (μm)	Details
Fittings	ULTRON ES-CD-2	3, 5	Waters compatible
	ULTRON ES-CD-EP	3	
	ULTRON ES-CD/ULTRON ES-PhCD(-T)/ ULTRON ES-CD-F/ULTRON ES-CD-B	5	
pH range	ULTRON ES-CD-2	3, 5	Recommended range: 3.0 ~ 7.5
	ULTRON ES-CD-EP	3	
	ULTRON ES-CD/ULTRON ES-PhCD(-T)/ ULTRON ES-CD-F/ULTRON ES-CD-B	5	
Analytical temperature range	ULTRON ES-CD-2	3, 5	Recommended range: 25 ~ 40°C (Maximum: 50°C)
	ULTRON ES-CD-EP	3	
	ULTRON ES-CD/ULTRON ES-PhCD(-T)/ ULTRON ES-CD-F/ULTRON ES-CD-B	5	
Analytical pressure range	ULTRON ES-CD-2/ULTRON ES-CD-EP	3	Recommended range: Up to 40 MPa
	ULTRON ES-CD-2/ULTRON ES-CD/ ULTRON ES-PhCD(-T)/ ULTRON ES-CD-F/ULTRON ES-CD-B	5	Recommended range: Up to 20 MPa

※ The degradation of column performance is likely to occur when used at higher temperatures.

※ Avoid using the a column repeatedly near the pressure limit or making abrupt changes in pressure to prevent shortening of the column life.

3. Shipment Solvent

- ULTRON ES-CD and ES-PhCD(-T) columns are shipped containing 40% aqueous solutions of acetonitrile.
- ULTRON ES-CD-2/ULTRON ES-CD-B/ULTRON ES-CD-F/ULTRON ES-CD-EP columns are shipped containing 100% acetonitrile.

4. Mobile Phase and Sample

- Flow rate direction of mobile phases is as indicated on the column label.
- Ensure to filter samples and mobile phases using a membrane filter with a mesh size of 0.45 μm or smaller before using. Failure to filter mobile phases, etc. can lead to blockages of column filters and increases in analytical pressures.
- Ensure to thoroughly degas mobile phases prior to use. Insufficient degassing of mobile phases can lead to the formation of bubbles inside analytical instruments and columns resulting in problems with analyses.
- Potassium phosphate, ammonium acetate or ammonium formate are suitable buffers.
Please consider a suitable buffer concentration depending on the combination of salt and organic solvent.
- It is recommended to dissolve the sample in a solvent that is of the same composition as the initial mobile phase.
- The pH of the sample solution must be set in acceptable pH range for packing material.
- Please flow the mobile phase at an initial flow rate 0.2 mL/min in order to avoid the danger of sudden pressure increases.

5. Precautions for Column Installation

- Before installation the column, replace the solvent in the system with the mobile phase to be used.
(Note: Ensure the compatibility of solvents/buffers when replacing to avoid precipitation of salts. The details about the shipment solvent is described in the column performance report enclosed with the column.)
Tubing must have flat ends and must bottom out in the column endfitting. Tubing must be connected to the column correctly to avoid creating a void between the column frit and tubing, which can cause a leak and result in poor column performance.
- Install the column according to the direction of the arrow.
- Do not remove the column from LC system before the pressure drops zero.

6. Column Storage

- Replace the buffer solution of the mobile phase with purified water, and then clean the column using a solution with an organic solvent concentration the same as the mobile phase.
Finally, replace the column with the same as the shipment solvent.
Close the column with end stop plugs tightly and store at room temperature.
When using a mobile phase containing buffer salts, care must be taken to avoid salt precipitation.
- Performance of the column should be carried out in accordance with the enclosed "COLUMN PERFORMANCE REPORT".

ULTRON series packed columns are shipped under highly controlled conditions. However, if you should find any defect, please contact your dealer or Shinwa.

Note that Shinwa does not warrant the product against column life or deterioration caused by the failure to follow the above instructions.



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