

ULTRON VX Series

Instruction Manual

1. Introduction

Thank you for purchasing a ULTRON VX series column for High-performance liquid chromatography. ULTRON VX-ODS and VX-Octyl series column are packed with a microparticulate packing material designed for reversed-phase high performance liquid chromatography. These packing materials are made by chemically bonding a monolayer octadecyl or octyl stationary phase to a specially prepared high purity porous silica. These bonded phases are chemically stable and result in long column lifetimes. ULTRON VX-SIL columns are packed with completely porous silica particles designed for normal phase high performance liquid chromatography.

2. Specification

	Separation Mode	Particle size (µm)	Pore size (nm)	pH range	Maximum Analytical temperature (°C)	Maximum Analytical pressure (MPa)	Fitting
VX-ODS	Reversed Phase	3	12	pH2.0~7.5	50°C	40	Waters compatible
		5, 10, 15					
VX-Octyl		5					
VX-SIL	Normal Phase	5, 10, 15	—				

3. Shipping Solvent

- Indicated in the Column Performance Report.

4. Mobile Phase and Sample

(ULTRON VX-ODS, ULTRON VX-Octyl)

- Polar organic solvents (methanol, acetonitrile, etc.) and aqueous buffers are commonly used as mobile phases.
- For separations of ionic substances, appropriate adjustments of pH and/or the addition of salts and/or counter ions may result in improved elution times and peak shapes.

Salt: Potassium biphosphate

Counter ion (acidic samples): Tetrabutyl ammonium ions

(basic samples): Pentane sulfonate ions

Note: Make sure mobile phase pHs are within the specified range.

- To remove strongly adsorbed substances more rapidly, use a strong non-polar solvent with either an isocratic or binary composition (addition of tetrahydrofuran to methanol/water results in earlier elution).
- Dust particles in mobile phases and sample solutions can lead to clogging of the column inlet filter or the top of the column bed.
- Filter mobile phases and sample solutions prior to use where necessary.

(ULTRON VX-SIL)

- ULTRON VX-SIL columns are employed in normal phase separations.
- These columns are compatible with all general organic solvents (n-hexane, chloroform, etc.). In order to elute samples faster, increase the proportion of isopropanol or ethanol in the mobile phase.
- When switching between solvents with significantly different polarities, it is advisable to first rinse the column with a mutually miscible solvent such as isopropanol.

5. Precautions for Column Installation

- Flow mobile phases only in the direction indicated on the column label.
- Maximum operating pressure is 20MPa. (VX-ODS 3 μ m: 40MPa)
- Do not use columns below pH 2.0 or above pH 7.5.
- Do not subject these columns to shocks such as dropping, etc.
- All connections in liquid chromatographic systems are potential sources of leaks. Be aware of the toxicity or flammability of mobile phases used.

6. Column cleaning and column storage

- A column test report is included with each column.
- When storing a column for an extended period of time, wash the column and fill it with an appropriate solvent before sealing both ends of the column.
- When washing columns, set the flow rate of the mobile phase at 0.5 ml/min or less in order to avoid excessive pressures.

(ULTRON VX-ODS, ULTRON VX-Octyl)

- Clean the column with the mobile phase. And then, replace the mobile phase in the column with the shipping solvent and close the column with end stop plugs tightly and store at room temperature.

Note: in case of mobile phase contains buffer solution, replace the buffer solution of the mobile phase with purified water.

- If amines, such as trimethylamine or tetrabutyl ammonium, were added to the mobile phase, wash with a mixture of methanol/0.05 % phosphoric acid (50/50), then with methanol. Do not wash with water alone.
- To remove adsorbed matter from the top of the column, use a wash solvent with a strong dissolving power such as tetrahydrofuran or chloroform, etc.

(ULTRON VX-SIL)

- Store columns after filling with the same solvent as the mobile phase.
- To remove adsorbed polar matter from the top of the column, wash with isopropanol, etc.

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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