

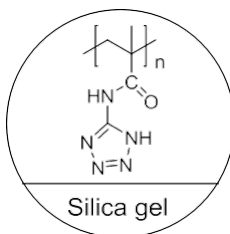
INSTRUCTION MANUAL FOR DCpak® PTZ

Please read these instructions completely before using this column

Column Description

DCpak® PTZ

Poly N-(1H-tetrazole-5-yl)-methacrylamide **immobilized** on **5µm and 3µm silica**



Shipping solvent: **10% Water / 90% Acetonitrile**

Every column has been examined and quality control tested before shipping. Please refer to the Column Performance Report and test parameters for results.

Operating Conditions

	50 x 2.1 mm i.d. 100 x 2.1 mm i.d. 150 x 2.1 mm i.d. 250 x 2.1 mm i.d. Analytical columns	50 x 3.0 mm i.d. 100 x 3.0 mm i.d. 150 x 3.0 mm i.d. Analytical columns	50 x 4.6 mm i.d. 100 x 4.6 mm i.d. 150 x 4.6 mm i.d. 250 x 4.6 mm i.d. Analytical columns	250 x 10 mm i.d. 250 x 20 mm i.d. 250 x 30 mm i.d. 250 x 50 mm i.d. Semi-prep/prep columns
Column Fittings	Waters			
Flow Rate Direction	As indicated on the column label			
Pressure Limitations	30MPa (~ 305 kgf/cm ² or ~ 4350 psi)			
Temperature	5 to 70°C			
pH Range ^①	Between pH 2.0 and 8.0			

^①When this column is used at pH > 7, the temperature should be maintained between 5°C and 40°C, and the use of a guard cartridge is essential to maximize column life.

Important Notice

- **This column is not for chiral separations.**
- **Do not attempt to disassemble the column.**
- **This instruction sheet for DCpak® PTZ is not applicable to any other Daicel column.**

🔥 **Please contact your local Chiral Technologies office for further assistance before trying any solvents not mentioned below.**

A – HILIC Mobile Phases

	Polar Organic Solvent / Aqueous Buffer
Typical Starting Conditions	80/20 (v/v)
Advised Optimization Range	95/5 to 5/95

- ❑ Acetonitrile is the recommended starting polar organic solvent, however DCpak® PTZ can be used with any water miscible polar organic solvent.
- ❑ The eluotropic strength for this column in descending order is acetonitrile > methanol.
- ❑ It is recommended to start with an acidic aqueous buffer, such as 20 mM ammonium acetate (pH 4.7), however water, or other aqueous buffers can be used.
- ❑ A higher water content results in a shorter retention time.

B – Additives

- ❑ Ammonium formate or ammonium acetate (typically 20 mM) are generally used as additives to the aqueous solution.
- ❑ Formic acid, acetic acid, or ammonia water can be used for pH control.

Additive for basic analyte	Additive for acidic analyte
20 mM ammonium formate or ammonium acetate	
Ammonia water (for basic pH control)	Formic acid or acetic acid (for acidic pH control)

Sample Preparation

- ❑ The sample should be dissolved in the mobile phase and should be filtered through a membrane filter of approximately 0.5µm porosity.

Column Care / Maintenance

- ❑ The use of a guard cartridge is highly recommended for maximum column life.
- ❑ Before storing the column, remove the acidic or basic additives by flushing the column with the same mobile phase without the additives. Columns can be stored with the additive free mobile phase at ambient temperature.

🔧 Column cleaning and regeneration procedures

Following extensive use of the column in a wide variety of mobile phase conditions, there may be a change in column reproducibility. In order to ensure consistent performance, a regeneration method may be implemented to eliminate any changes in recognition due to the history of the column (mobile phases, additives...).

- Flush with 100 mM aqueous ammonium acetate / acetonitrile = 20 / 80 (v/v) at 1.0 mL/min.^(*) for 2 hours.

- Equilibrate with 20 mM aqueous ammonium acetate / acetonitrile = 10 / 90 (v/v) at 1.0 mL/min.^(*) for 1 hour prior to retesting the column.

(*) Recommended flow rate for 4.6 mm i.d. analytical columns. Please see conversion table below for other i.d. column flow rates.

- If the peak shape is collapsed, flush the column with 10 or more column volumes of 100 mM aqueous ammonium acetate / acetonitrile = 10 / 90 (v/v). Then plug both ends of the column and let it stand, while heating to 70°C, for 20 hours or more.

Conversion Table

□ Column ID vs Flow rate

Column i.d. (mm)	2.1	3.0	4.6	10	20	30
Flow rate (mL/min)	0.21	0.43	1.0	4.7	19	43

□ Pressure

MPa	bar	kg/cm ²	psi
1	10	10.197	145.038
0.1	1	1.020	14.504
9.807×10 ⁻²	0.981	1	14.223
6.895×10 ⁻³	6.895×10 ⁻²	7.031×10 ⁻²	1

Operating this column in accordance with the guidelines outlined here will result in a long column life.

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