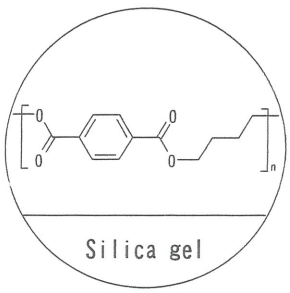
DAICEL
The Best Solution for You

INSTRUCTION MANUAL FOR DAICEL DCpak® PBT Columns

Please read this instruction sheet completely before using this column

Product information

Denomination	DAICEL DCpak® PBT
Selector	Polybutylene terephthalate (coated on silica gel) 
Particle size	5μm
Column end	Based on the Waters gauge
Sealed solvent	Ethanol

(Each column is QC-tested and examined before shipping. Please refer to the Column Performance Report for the QC- test result.)

Warning:

The column is designed for 34.35MPa maximum pressure and for 30MPa daily pressure.
Please use the column **neither** at a pressure beyond 30Mpa **nor** at the temperature over 40°C.

Purge the residual solvent in the system (including autoinjector syringe, needle, and injection loop) with one of the recommended modifiers (see p.2) before connecting the column to the instrument.

Operating condition

Flow direction	Indicated on the tag
Pressure*	30MPa (～ 305 kgf/cm^2)
Temperature	0～40 ℃

* The relevant backpressure value is the one generated by the column itself.

Important notice

⇨ **This column is not for chiral separation.**
⇨ **Do not dismantle the column hardware.**
⇨ **The instruction for DCpak PBT columns cannot be applied to any other DAICEL columns.**

Recommended mobile phase

The recommended mobile phase for SFC is shown below.
And, this column can also be used under HPLC condition.
Please contact our technical assistance service before using any other modifiers than the recommended ones below

A Mobile phase

	CO_2/Modifier
Composition	100/0～70/30

- Methanol is recommended as the typical modifier. Ethanol, 2-propanol, ethyl acetate, THF, and dichloromethane can also be used instead.
- The eluotropic strength is in the order of methanol > ethanol > 2-propanol, if the same volume percentage of the modifier is applied. This tendency becomes more notable for analytes of higher polarity.
- A higher modifier content results in a shorter retention time.
- A mixture of the above modifiers can also be applied. When an aprotic modifier is employed, addition of an alcohol in a small amount may help to sharpen the peak shape.
- Be careful! Increasing modifier content leads to higher column head pressure, which should not exceed 30MPa.

B Additive

- Add a small amount of the additive to the modifier for analysis of basic or acidic analyte as indicated in the table.
- The recommended additive for basic analytes is diethylamine.
- The recommended additive for acidic analytes is trifluoroacetic acid.

Additive for basic analyte	Additive for acidic analyte
Diethylamine	Trifluoroacetic acid
～0.1 vol% of total mobile phase	～0.1 vol% of total mobile phase

- The typical concentration is 0.1vol% of the total mobile phase (e.g. 0.5% of additive in the modifier to get the mobile phase composition of CO_2/modifier 80/20 v/v).
- Flush the column with more than 10 column volumes of a mobile phase without additives before disconnecting the column.

Sample preparation

- Sample should be dissolved in the modifier so far as possible and be filtered through a membrane with pore size around 0.5 μm before injection.

Column storage and cleaning

- Remove the column from the instrument after the complete release of the inner pressure. Disconnecting the column under a high inner pressure may cause hazards by CO_2 spouting and deteriorate the column sealing by temperature shock.
- When removing column from the system, loosen carefully and slowly the connection to avoid the possible CO_2 spouting.
- Once disconnected, the column can be stored at ambient temperature.
- When loosing reproducibility of the separation, clean the column with more than 10 column volumes of ethanol at 1.0 mL/min.