

Column Care and Use Instructions

YMC-Pack SIL

YMC-Pack SIL-06

1. Introduction

Thank you for purchasing a YMC high-performance liquid chromatography (HPLC) column. YMC HPLC columns, which are manufactured under highly controlled conditions, must pass a series of stringent tests before being accepted for shipment. (Please refer to the column inspection report). To ensure optimal performance and durability of the column, please read these instructions carefully before using this column.

2. Column connections

The "WT" or "QT" at the end of the product code indicates the style of column endfittings.

WT = Waters style / QT = Parker style

3. Shipping solvent

Indicated in the COLUMN INSPECTION REPORT. Replace with this solvent for storage. When replacing mobile phases, make sure of the miscibility among the solvents.

4. Mobile phase

- The correct direction of the solvent flow is indicated by an arrow on the column identification label.
- In general, alkane (*n*-hexane or *n*-heptane), alcohols (methanol, ethanol, 2-propanol), ethyl acetate, dichloromethane, chloroform, are recommended for regular use.
- Addition of alcohol to alkane is basic. Acetonitrile, tetrahydrofuran (THF), dioxane etc. are also usable. When preparing mobile phases, make sure of the miscibility among the solvents.
- When a target compounds is ionic, addition of modifier at trifluoroacetic acid (TFA), acetic acid etc. can improve peak shape and separation reproducibility. High concentrations of modifiers can result in reducing column lifetime. In this case, the same column is not recommended for developing a new method, because exposure to acid or alkali may change the retention characteristics of a column.
- Recommended pH ranges of the column are between 2.0 – 7.5. For PVA-Sil, pH ranges of 2.0 – 9.5 are available.

5. Column cleaning (general method)

- Flush the column with 2-propanol etc.
- Replace with the mixture of *n*-hexane and alcohol etc. for storage.

6. Other environments

- The operating pressure should be kept under 20 MPa (2900 psi) for 150 mm or less than 150 mm length column, under 25 MPa (3625 psi) for 250 mm length column, under 10 MPa (1450 psi) for 10 mm I.D. or more than 10 mm I.D. column.
- To prevent exposure of the column to excessive pressure, the sample solution should be filtered through a 0.2 µm membrane or smaller to remove particulates. We recommend using a pre-column filter to prevent the column frit from being clogged with samples.
- Avoid using a column repeatedly near the pressure limit or abrupt change in pressure to prevent shortening of the column life.
- Adjust the flow rate appropriately because the pressure changes depending on the column length, temperature, types of organic solvent etc.
- The upper limit of column temperature is 50 °C. However, we recommend using the column at 20 – 40 °C, because column lifetime varies depending on conditions such as pH.