

Column Care and Use – Eurospher II Chiral AM and OM columns

Please read these instructions carefully before using this type of Knauer chiral column.

Product information:

The Knauer Eurospher II Chiral AM and OM coated polysaccharide chiral stationary phases are made with a spherical high-quality silica gel. Due to the coating nature of the phases, solvents should be selected carefully.

CAUTION:

Some of the most popular eluents for HPLC (such as acetone, chloroform, DMF, DMSO, MEK, toluene, dioxane, ethyl acetate, methylene chloride, pyridine and THF) which may be remaining in your HPLC system, can destroy even in small concentrations this type of column.

It is highly recommended that the HPLC system is flushed with appropriate eluents before the installation of the chiral column is undertaken, otherwise we cannot guaranty the quality of the packing material.

All Eurospher II Chiral columns are individually tested and delivered with a test certificate.

Please keep the test certificate in a suitable place.

Eurospher II Chiral columns are designed to be used either in normal phase mode, in polar organic mode or in reversed phase mode.

Operating Procedure: Normal Phase Mode (NP)

Eluent: suitable mobile phases include: hexane, heptane, 2-propanol and ethanol in different mixtures;
(NOTE: recommended mobile phase: hexane/2-propanol (90/10 v/v))

Modifier: includes N,N-diethylamine for basic samples; trifluoroacetic acid for acidic samples;
(NOTE: minimize use of the modifier; typical use is 0.1 %; maximum 0.5%.)

In NP Mode Retention time is generally shorter with higher alcohol content. Ethanol will shorten the retention time compared to 2-propanol.

Operating Procedure: Polar Organic Mode (POM)

Eluent: suitable mobile phases include: 2-propanol, ethanol, methanol, acetonitrile

Modifier: includes N,N-diethylamine for basic samples; trifluoroacetic acid for acidic samples;
(NOTE: minimize use of the modifier; typical use is 0.1 %; maximum 0.5%.)

Operating Procedure: Reversed Phase Mode (RP)

Eluent: **neutral:** water/acetonitrile or water/methanol in different mixtures
basic: 0.1 M aqueous salt/acetonitrile (methanol) in different mixtures
(recommended salts: PF₆⁻, ClO₄⁻, NO₃⁻, I⁻, Br⁻, SO₄²⁻, CH₃CO₂⁻, F⁻)
acidic: aqueous (limit pH 2)/acetonitrile (methanol) in different mixtures (use TFA or phosphoric acid)

Operating Restrictions:

Flow direction: as indicated by arrow on the column label
Flow rate: flow rate is limited by a maximum column pressure of less than 30 MPa (300 bar); typical flow rate for analytical columns (4.6 mm) is 1 ml/min
Temperature: ambient up to 40 °C
Pressure: less than 30 Mpa (300 bar)
Sample: dissolve in mobile phase or compatible solvents.

Eurospher II Chiral columns can also be used for SFC applications.

Strongly basic compounds must be avoided, because they are likely to damage the silica gel used in this column.

Samples and eluent should be filtered through a 0.45 µm membrane filter.

Maintenance:

The column should preferably be stored in hexane/2-propanol (90/10, v/v) when stored for more than one week. Please pay special attention to the miscibility of the eluents. Use 2-propanol in between eluents of different polarities.

If washing/regeneration steps are required, please use first 2-propanol, then ethanol (or methanol) at 0.5 ml/min for 3 hours. To complete the washing process all transitions from one solvent to another should be made via 2-propanol.