Lux™
SIMPLIFIED CHIRAL LC

Care and Use Notes

Thank you for purchasing Lux™ columns for your chiral work. Below are the recommended instructions for the care and use of your column.

Specifications

Shipping Solvent

n-Hexane/2-propanol (9:1, v/v)

Test Certificate

Each column is individually tested before shipment. A test certificate showing the separation parameters for *trans*-stilbene oxide is enclosed with each column.

Operating Parameters

Mobile Phase Compatibility

Lux columns can be used with normal phase (alkane/alcohol), reversed phase (aqueous methanol, aqueous acetonitrile or appropriate buffer/methanol or buffer/acetonitrile mixtures), as well as with pure polar organic solvents (low molecular weight alcohols, acetonitrile or their mixtures).

Solvent Switching

An appropriate column washing procedure must be applied when changing from one mobile phase to another. The miscibility of the different mobile phase components must be carefully considered for this wash. To safely transfer a column from hexane to methanol (or acetonitrile) or from methanol (or acetonitrile) to hexane, use 100 % 2-propanol as transition solvent at a flow rate of 0.2-0.5 mL/min. Ten column volumes of 2-propanol (i.e. 25 mL for a 250 x 4.6 mm i.d. column or 15 mL for a 150 x 4.6 mm i.d. column) are sufficient for completely removing the old mobile phase.

To safely transfer a column from normal phase to reversed phase conditions flush the column with 100 % 2-propanol at 0.2-0.5 mL/min for minimum ten column volumes. In addition, when the buffer salt additive of the RP mobile phase is insoluble in 2-propanol, flush the column briefly with water before switching to a buffered mobile phase. We recommend the use of dedicated Lux columns to reversed phase operation hence avoiding the need of converting columns used in normal phase elution mode to reversed phase or vice versa.

Use of Mobile Phase Modifiers

For basic samples or acidic chiral compounds, it may be necessary to use an appropriate mobile phase modifier in order to achieve chiral resolution and to insure proper peak shapes. Diethylamine, ethanolamine and butyl amine in the concentration range 0.1-0.5 % can be used with basic analytes, while trifluoroacetic or acetic acid (0.1-0.5 %; typically 0.1-0.2 %) with acidic analytes. Mixtures of basic and acidic mobile phase additives are acceptable (e.g. diethylamine acetate or trifluoroacetate). Lux columns will deliver consistent results when operated with mobile phases containing additives at the concentration levels specified above. However, limited decrease in column efficiency may occur when a column is used in combination with these additives. Therefore, we advise to dedicate columns to mobile phases containing basic additives.

Mobile Phase Restrictions

Lux chiral stationary phases are prepared by coating silica with various polysaccharide derivatives. Therefore, any solvent dissolving the polysaccharide derivative (such as tetrahydrofurane, acetone, chlorinated hydrocarbons, ethylacetate, dimethylsulfoxide, dimethylformamide, N-methylformamide, etc.) must be avoided even in trace amounts (e.g. even as sample solvent).

Operating Backpressure

The mobile phase flow rate should be set such that the column backpressure stays below 300 bar (4300 psi). This maximum backpressure should not be exceeded for long periods of time.

Operating Temperatures

With standard mobile phases (such as alkane/alcohol) the column can be used in the temperature range 0-50 °C.

Column Storage

Column storage for a longer period of time is recommended in n-hexane/2-propanol (9:1, v/v).

Columns used in reversed phase conditions should be first flushed with water (whenever a buffer salt was used as RP mobile phase additive) and then with methanol (or with methanol only when no salt was used). The column can be stored in methanol.

Extending Lifetime and Reconditioning

Phenomenex recommends the use of SecurityGuard™ guard cartridges to extend the lifetime of your column, especially with samples extracted from complex matrixes. Ideally, samples must be completely dissolved in the mobile phase or filtered through a syringe filter of approximately 0.45 µm porosity.

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