

**INSTRUCTION MANUAL FOR
CROWNPAK® CR-I(+) and CROWNPAK® CR-I(-)**

<Normal Phase>

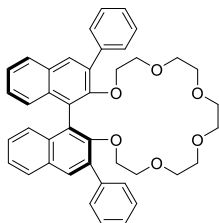
Please read this instruction sheet completely before using these columns.

**These columns can also be used in reversed phase mode.
Please refer to the corresponding instruction sheet for details.**

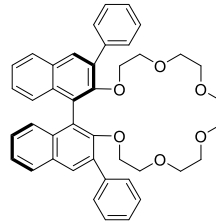
Column Description

Packing composition:

Chiral Crown Ether immobilized on **5µm silica-gel**.



CROWNPAK® CR-I(+)



CROWNPAK® CR-I(-)

Shipping solvent:

H₂O/MeOH 95:5 (v/v)

All columns have been pre-tested before packaging. Test parameters and results, as well as the Column Lot Number, are included on a separate (enclosed) page.

Switching Between RP and NP Mode

Shipping solvent of CROWNPAK CR-I(+)/CR-I(-) columns are H₂O/MeOH=95/5.

To switch from reversed phase mode to normal phase mode, and vice versa, column should be carefully flushed with miscible solvent (ethanol and 2-propanol).

Sufficient equilibration time is necessary for the stabilization of retention times when the column is switched from reversed phase mode to normal phase mode.

Operating Procedure / Normal Phase

A. Mobile phase

When developing methods, we would recommend reversed phase mode as a first choice. Normal phase mode is a second choice.

Primary solvent	Alkane [Ⓢ] /EtOH [Ⓢ] /TFA [Ⓢ] /H ₂ O [Ⓢ]
Typical starting conditions (v/v/v/v)	50 / 50 / 0.5 / 0.5
Advised optimization range (v/v/v/v)	70 / 30 / 0.5 / 0.5 ~ 30 / 70 / 0.5 / 0.5

- ① Alkane = n-Hexane, iso-Hexane or n-Heptane. Some small selectivity differences may sometimes be found.
- ② The retention is generally quite shorter with Ethanol than with 2-Propanol.
- ③ Use TFA at less than 1.0% to prolong column lifetime.
- ④ By the addition of H₂O, the peak shapes can be improved. When additive amount of H₂O is so high, the mobile phase is not miscible. Maximum additive amount allowed of H₂O is depending on the kinds and proportion of alcohol. In the case of n-Hexane / EtOH = 50 / 50 (v/v), the additive amount of H₂O is up to 3.0%.

Column Care / Maintenance

- ❑ When washing is required, use the solvent which can dissolve the sample such as pure methanol or ethanol at 0.2 mL/min for about 2 hours (room temperature).
- ❑ The column should be immediately flushed with a mobile phase without the TFA and H₂O after the use.
- ❑ n-Hexane / ethanol = 50 / 50 can be used as a storage solvent when used continuously under normal phase.

Refer to instruction sheet for reverse phase and column care/maintenance.

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

⇒ If you have any questions about the use of this column, or encounter a problem, contact:

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