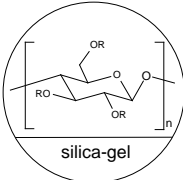
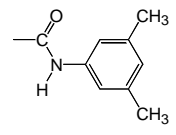
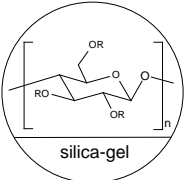
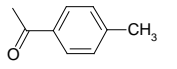


INSTRUCTION MANUAL FOR CHIRALCEL® OD and CHIRALCEL® OJ

Please read this instruction sheet completely before using these columns

Column Description

CHIRALCEL® OD	CHIRALCEL® OJ
<p>Cellulose tris(3,5-dimethylphenylcarbamate) coated on 10µm silica-gel.</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin: 0 20px;">R =</div>  </div>	<p>Cellulose tris(4-methylbenzoate) coated on 10µm silica-gel.</p> <div style="display: flex; align-items: center; justify-content: center;">  <div style="margin: 0 20px;">R =</div>  </div>
<p>Shipping solvent: n-Hexane / 2-propanol solvent mixture (90:10 v/v)</p> <p>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.</p>	

CAUTION

The entire HPLC system including the injector and the injection loop must be flushed with a solvent compatible with the column and its storage solvent prior to connecting. Many of the solvents commonly used in HPLC eluents such as acetone, chloroform, DMF, dimethylsulfoxide, ethyl acetate, methylene chloride and THF may DESTROY the chiral stationary phase if they are present, even in residual quantities, in the system.

If an auto-sampler is used, then the solvent employed to flush this unit between injections should also be changed and the relevant solvent lines flushed.

Operating Conditions

	250 x 4.6 mm i.d. Analytical column	250 x 10 mm i.d. Semi-Prep. column	250 x 20 mm i.d. Semi-Prep. column
Flow rate direction	As indicated on the column label		
Typical Flow rate ①	~ 1ml/min	~ 5ml/min	~ 18ml/min
Pressure limitation ②	Should be maintained < 150 Bar (2175 psi) for maximum column life Adapt flow rates to column size.		
Temperature	0 to 40°C		

- ① The maximum flow rate depends on the mobile phase viscosity (mobile phase composition), and should be adjusted in accordance with the pressure upper's limit (i.e. 150 Bar).
- ② The back pressure value that should be taken into account is the one generated by the column itself. This value is measured by calculating the difference between the pressure of [LC system + column] and the pressure of the LC system free of the column.

Operating Procedure

 **Please contact Chiral Technologies, Inc. for further assistance before trying any solvents not mentioned below.**

A - Mobile Phases

	Alkane ^① / 2-propanol ^②	Alkane ^① / Ethanol ^②	Alkane ^① / Methyl- <i>tert</i> -butyl ether (MTBE)	Alkane ^① / MeOH ^③	MeOH ^④ + ^⑤
CHIRALCEL[®]OD CHIRALCEL[®]OJ	100/0 to 0/100	100/0 to 0/100	100/0 to 50/50	100/0 to 85/15	0 to 100% EtOH or IPA in MeOH

- ① Alkane: n-hexane or iso-hexane or n-heptane. Some small selectivity differences may sometimes be found.
- ②
- ☐ The retention is generally shorter with Ethanol than with 2-propanol.
 - ☐ The retention is generally shorter with higher alcohol contents.
 - ☐ The use of other alcohols such as 1-propanol, 1-BuOH, 2-BuOH etc...is possible, but effectiveness cannot be guaranteed.
- ③ Due to limited miscibility of MeOH in Alkane, it is necessary to add an appropriate volume of EtOH together with MeOH in order to obtain an homogenous solvent mixture.
A maximum of 5% MeOH in n-hexane only may be used without adding EtOH.
- ④ Ideal starting conditions: MeOH/EtOH 50:50 (v/v) when alcohol mixtures are required.

- ⑤ The use of polar solvents as 100% methanol is possible with CHIRALCEL® OD and OJ columns. Nevertheless once the column is transferred to a polar mode **it should be dedicated to this specific application.**

To safely transfer the column from hexane to methanol **it is strongly recommended to use 100% 2-propanol as a transition mobile phase.**

B – Additives

For basic samples or acidic samples, it is necessary to add an additive into the mobile phase in order to achieve the chiral separation:

- ⑥ For primary amines mainly
⑦ For primary amino alcohols mainly

Basic Samples Require Basic modifiers	Acidic Samples Require Acidic modifiers
DEA Butyl amine⑥ Ethanol amine⑦	TFA CH ₃ COOH
< 0.5% Typically 0.1%	< 0.5% Typically 0.1%

Column Care / Maintenance

- ❑ The use of a guard column is highly recommended for maximum column life.
- ❑ Samples should be dissolved in the mobile phase and should be filtered through a membrane filter of approximately 0.5µm porosity.
- ❑ For alkane containing mobile phases, flush the column with Storage Solvent (Hexane / 2-propanol 9:1) when stored for more than one week.
- ❑ For columns dedicated to polar solvents, flush the column with the regular mobile phase **without the additive.**

☞ When washing is required, flush pure Ethanol for 3 hours.
(Columns used with alkane/alcohol mobile phase only).

 **Before flushing with 100% Ethanol use 100% 2-propanol as a transition mobile phase.**

Important Notice

⇒ STRONGLY BASIC solvent modifiers or sample solutions MUST BE AVOIDED, because they are likely to damage the silica gel used in this column.

Operating this column 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, please email questions@chiraltech.com or call 800-6-CHIRAL for assistance.

Part Number	Name	Particle Size	Internal Diameter	Column Length	Product Type
14022	CHIRALCEL OD	10	4.6	50	Guard Column
14025	CHIRALCEL OD	10	4.6	250	Analytical
14035	CHIRALCEL OD	10	10	250	Semi-Prep
14045	CHIRALCEL OD	10	20	250	Semi-Prep

Part Number	Name	Particle Size	Internal Diameter	Column Length	Product Type
17022	CHIRALCEL OJ	10	4.6	50	Guard Column
17025	CHIRALCEL OJ	10	4.6	250	Analytical
17035	CHIRALCEL OJ	10	10	250	Semi-Prep
17045	CHIRALCEL OJ	10	20	250	Semi-Prep

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