New Chiral ß Column from Agilent

Product Brief

Columns and Supplies

In response to increasing interest from the pharmaceutical, agrochemical, and fragrance industries, Agilent Technologies has developed a versatile GC capillary column with a chiral stationary phase based on permethylated beta-cyclodextrin. The new Agilent Chiral ß capillary is especially useful for resolving volatile optical isomers.

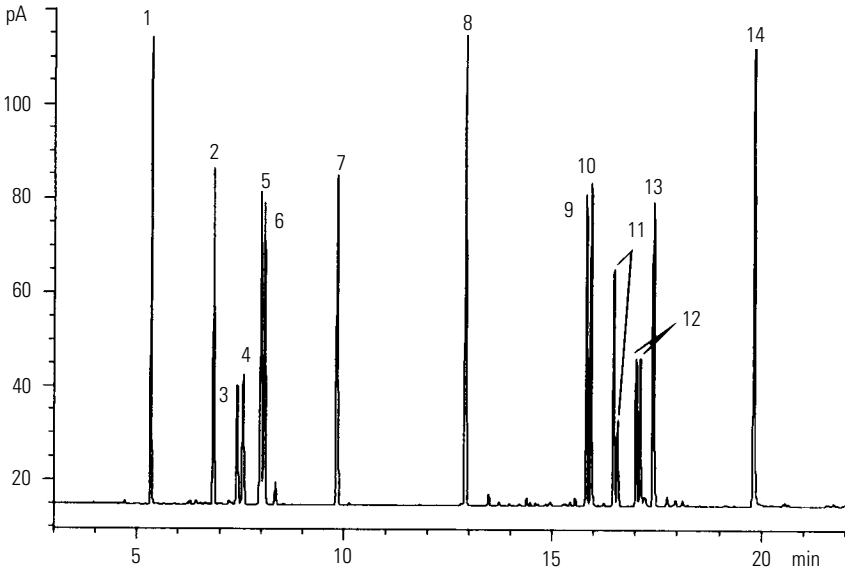
Agilent chose beta-cyclodextrin because of its broad applicability for separating chiral compounds. Hundreds of chiral isomers can be resolved using beta-cyclodextrin.

In the Agilent Chiral ß phase capillary, the beta-cyclodextrin is dispersed in a phenyl-based polymer. This polymer provides low bleed, and will not interfere with nitrogen-specific detectors like the nitrogen phosphorous detector, allowing optimized sensitivity for chiral compounds containing nitrogen. This sets it apart from competitive products that use cyano-based polymers that may interfere with nitrogen detection.

Although many types of chiral columns are available, it is virtually impossible to predict which column will work for a new chiral application. This makes the Agilent Chiral ß with optimized sensitivity for nitrogen a logical choice when screening chiral isomers for the first time.

Separation of chiral compounds commonly found in essential oils and fragrances

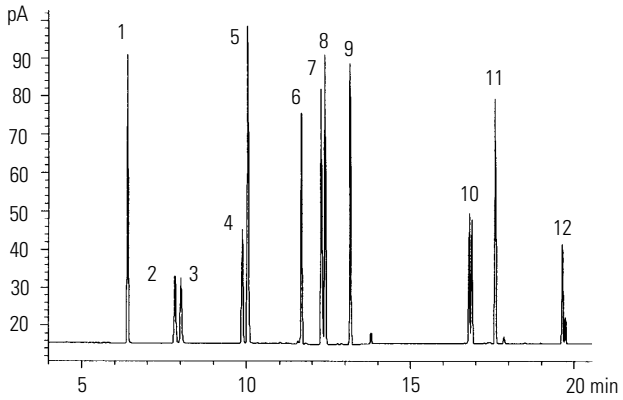
1. 1,2-Dimethylbenzene
2. Myrcene
3. (–)-Camphene
4. (+)-Camphene
5. (+)-ß-pinene
6. 1S-(–)-ß-pinene
7. Cineole
8. (R)-(+)-Citronellal
9. 1S,2R,5S-(+)-Menthol
10. 1R,2S,5R-(–)-Menthol
11. α-Terpineol
12. (+/–)-isoborneol
13. (+)-borneol
14. trans-Cinnamaldehyde



GC:	6890	Oven:	65°C (1 min) to 170°C at 5°C/min
Column:	30 m x 0.25 mm x 0.25 µm Part no. 19091G-B233	Injection:	Split (ratio 30:1), 1 µl, Inj Temp 250°C
		Detection:	FID, Det Temp 300°C
Carrier:	Hydrogen, 39 cm/sec, Constant pressure	Sample:	0.25 ng/µl each analyte in Hexane

The Agilent Chiral ß column is available in two concentrations of beta-cyclodextrin: 10% and 20%. Chiral resolution and polarity is greater with the 20% beta-cyclodextrin making it the column of choice for initial screenings. If an impurity interferes with the analysis of one of the chiral peaks using 20% beta-cyclodextrin, then the 10% beta-cyclodextrin column may improve the separation with the interfering compound.

Separation of chiral compounds commonly found in essential oils and fragrances



GC:	6890
Column:	Chiral-20 ß, 30 m x 0.25 mm x 0.25 µm Part number 19091G-B233
Carrier:	Hydrogen, 36 cm/sec, constant pressure
Oven:	50°C (2 min) to 143°C at 5°C/min
Injection:	Split (ratio 30:1), 1 µl, Inj Temp 250°C
Detection:	FID, Det Temp 300°C
Sample:	0.25 ng/µl each analyte in Hexane

1. Nonane
2. (+) 3,3-Dimethyl-2-butanol
3. (–) 3,3-Dimethyl-2-butanol
4. (1S)-(–)-alpha-pinene
5. (1R)-(+)-alpha-pinene
6. α-Terpinene
7. (S)-(–)-Limonene
8. (R)-(+)-Limonene
9. γ-Terpinene
10. (+/–)-Linalool
11. (–)-Menthone
12. (+/–)-α-Terpinen-4-ol

Chiral ß Columns Available from Agilent

Product Name	Part Number	Configuration	% Cyclodextrin
Agilent Chiral-10 ß	19091G-B113	30 m x 0.32 mm x 0.25 µm	10%
Agilent Chiral-20 ß	19091G-B213	30 m x 0.32 mm x 0.25 µm	20%
Agilent Chiral-10 ß	19091G-B133	30 m x 0.25 mm x 0.25 µm	10%
Agilent Chiral-20 ß	19091G-B233	30 m x 0.25 mm x 0.25 µm	20%

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