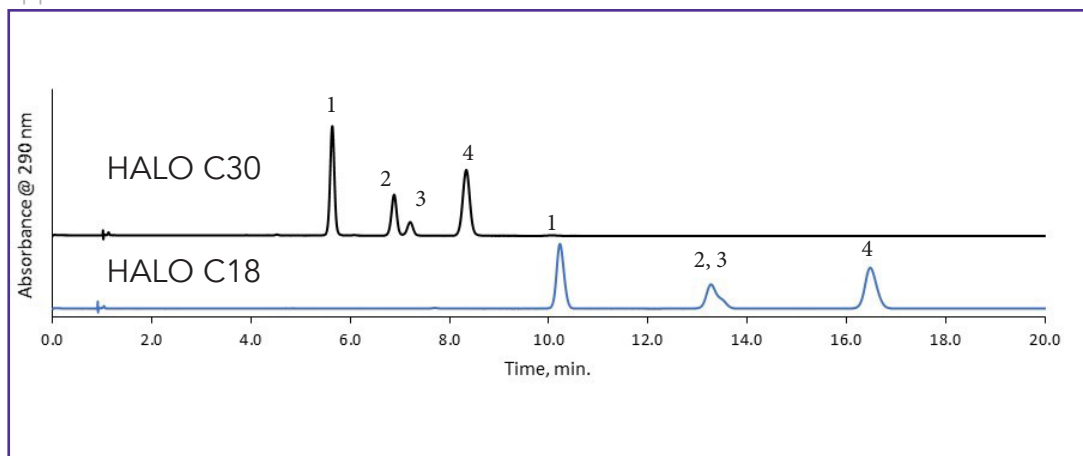




Separation of Tocopherols on HALO® C30

Application Note 185-V



PEAK IDENTITIES:

1. δ -tocopherol
2. γ -tocopherol
3. β -tocopherol
4. α -tocopherol

Tocopherols are a form of vitamin E (fat-soluble) that have antioxidant properties in both the body and in food. They are also used for cosmetics and many personal care products. Here, tocopherols are separated on a 160 Å C30 column with baseline resolution between the beta and gamma isomers compared to a 90 Å C18 column. While the HALO® C18 has more surface area (135 m²/g vs. 90 m²/g) and exhibits twice the retention, it produces a coelution of the isomers. Due to the C30's shape selectivity, complete separation of the isomers is achieved.

TEST CONDITIONS:

Columns:

- 1) HALO 160 Å C30, 2.7 μ m, 4.6 x 150 mm
Part Number: 92114-730
- 2) HALO 90 Å C18, 2.7 μ m, 4.6 x 150 mm
Part Number: 92814-702

Mobile Phase:

- A: Water
B: Methanol

Isocratic: 95% B

Flow Rate: 1.5 mL/min

Pressure: 337 bar for C30
348 bar for C18

Temperature: 10 °C

Detection: UV 290 nm, PDA

Injection Volume: 1.5 μ L

Sample Solvent: Ethanol/methanol

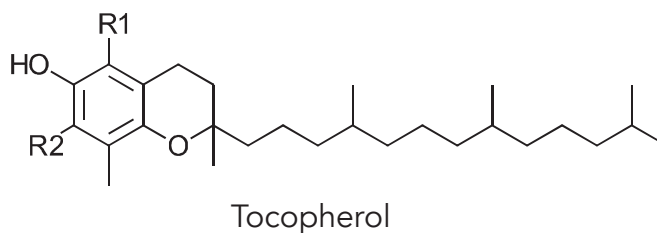
Response Time: 0.02 sec

Data Rate: 80 Hz

Flow Cell: 2.0 μ L

LC System: Agilent 1200 SL

STRUCTURES:



Tocopherol	R1	R2
Alpha (α)	CH ₃	CH ₃
Beta (β)	CH ₃	H
Gamma (γ)	H	CH ₃
Delta (δ)	H	H

