

APPLICATION

Extraction and Separation of Phenolic Antioxidants from Edible Oils using a Kinetex® 2.6 µm Polar C18 Column

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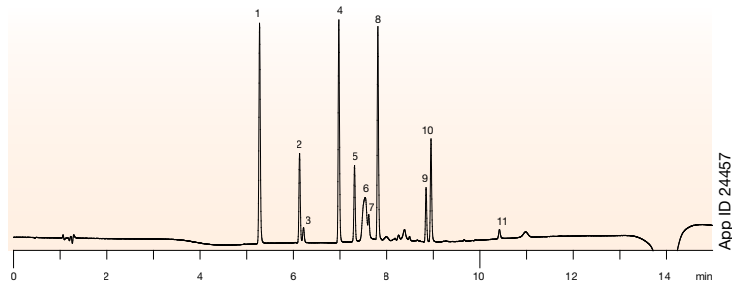
Overview

Phenolic antioxidants are commonly used compounds for the preservation of edible fats and oils. As with any food product, it is highly important to be able to accurately and efficiently monitor chemical additives. It is in the best interest of the manufacturer and the consumer to have the minimum amount of preservative present to be sufficiently effective. The AOAC official method 983.15 provides an extraction and HPLC separation of nine phenolic antioxidants. We included Vitamin E and Vitamin E Acetate to expand the phenolic antioxidants profile. Additionally, the mixture of all eleven antioxidants was spiked into to each of the matrices to provide a wholesome profile for antioxidants that can be found in edible goods. For this analysis, we developed a fast, robust, and efficient separation on a Kinetex 2.6 µm Polar C18 phase. This is a highly robust, core-shell stationary phase capable of providing increased efficiency over fully porous products. The Kinetex Polar C18 functionality provides unique polar selectivity that was critical in effectively retaining and separating these phenolic antioxidants.

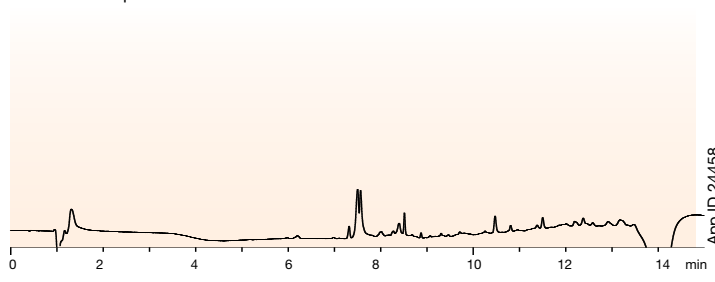
LC Conditions

Column: Kinetex 2.6 µm Polar C18
Dimensions: 100 x 3.0 mm
Part No.: 00D-4759-Y0
Mobile Phase: A: Water with 0.5 % Acetic Acid
 B: Acetonitrile/Methanol (50:50) with 0.5 % Acetic Acid
Gradient: 75:25 to 100 % B over 5 min, hold until 10 min
Injection: 5 µL
Flow Rate: 0.4 mL/min
Temperature: 22 °C
Detection: UV @ 280 nm
Analytes: 1. Propyl Gallate
 2. Ethoxyquin
 3. TBHQ
 4. NDGA
 5. BHA
 6. Ionox – 100
 7. Vitamin E
 8. Octyl Gallate
 9. BHT
 10. Lauryl Gallate
 11. Vitamine E Acetate

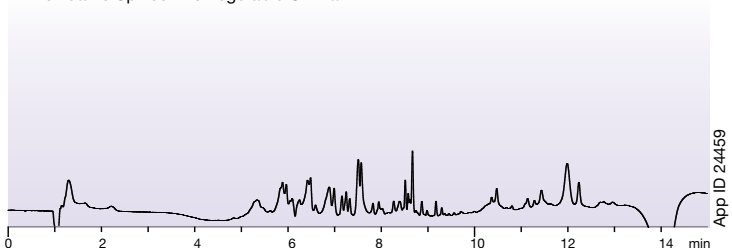
-Neat Antioxidant Standards



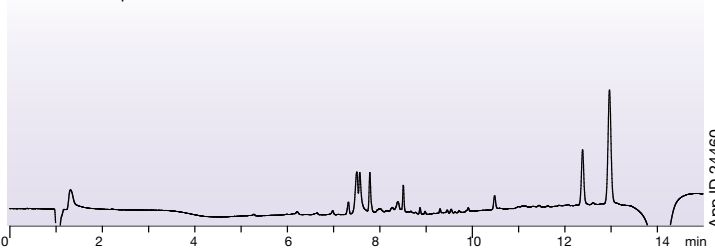
Antioxidants Spiked into Olive Oil Matrix



Antioxidants Spiked into Vegetable Oil Matrix



Antioxidants Spiked into Butter Matrix



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Kinetex Ordering Information

2.6 µm Minibore Columns (mm)					SecurityGuard™ ULTRA Cartridges†
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	3/pk
Polar C18	00A-4759-AN	00B-4759-AN	00D-4759-AN	00F-4759-AN	AJ0-9532 for 2.1 mm ID

2.6 µm MidBore™ Columns (mm)					SecurityGuard™ ULTRA Cartridges†
Phases	30 x 3.0	50 x 3.0	100 x 3.0	150 x 3.0	3/pk
Polar C18	—	00B-4759-Y0	00D-4759-Y0	00F-4759-Y0	AJ0-9531 for 3.0 mm ID

2.6 µm Analytical Columns (mm)					SecurityGuard™ ULTRA Cartridges†
Phases	30 x 4.6	50 x 4.6	100 x 4.6	150 x 4.6	3/pk
Polar C18	—	00B-4759-E0	00D-4759-E0	00F-4759-E0	AJ0-9530 for 4.6 mm ID

† SecurityGuard ULTRA Cartridges require holder, Part No.: AJ0-9000.

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If Kinetex analytical columns do not provide at least an equivalent separation as compared to a competing column of the same particle size, similar phase and dimensions, return the column with comparative data within 45 days for a FULL REFUND.

Terms and Conditions

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