

# APPLICATION



## Rapid Analysis of 23 Per- and Poly-Fluorinated Alkyl Substances (PFASs) by UHPLC-MS/MS using Luna<sup>®</sup> Omega 1.6 μm PS C18

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### Overview

Per- and poly-fluoroalkyl substances (PFASs) are synthetic organofluorine compounds which are extremely resistant to degradation due to heat, acids, or bases. They are present in a variety of products—including food packaging, textiles, and fire-fighting foams—and have been detected in the environment as well as in the blood of the general population. Additionally, PFASs are bioaccumulative and have been associated with various adverse health effects. This, combined with the persistent nature of PFASs, has prompted the USEPA to issue health advisory limits for two of the most common PFASs: PFOA and PFOS. This application describes a method for the rapid analysis of 23 PFASs by UHPLC-MS/MS using the Luna Omega 1.6 μm PS C18 column. The high resolution and unique mixed-mode selectivity of the Luna Omega 1.6 μm PS C18 results in excellent chromatography and peak shapes for PFASs in a very short four minute run.

### Acknowledgement

We would like to provide special thanks to Weck Laboratories for contributing this application.



**Column:** Luna Omega 1.6 μm PS C18  
**Dimensions:** 50 x 2.1 mm  
**Part No.:** 00B-4752-AN  
**Mobile Phase:** A: 5 mM Ammonium Acetate in Water  
 B: Acetonitrile  
**Gradient:**

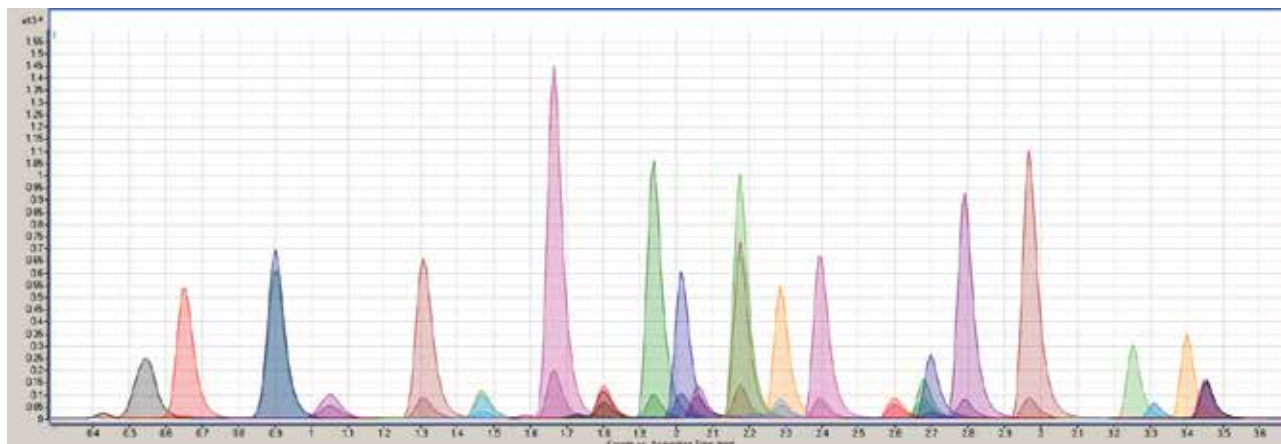
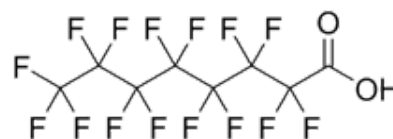
Time (min)	B (%)
0.0	40
0.5	40
3.0	90
3.1	100
4.0	100

  
**Injection:** 5 μL  
**Flow Rate:** 0.55 mL/min  
**Temperature:** 40 °C  
**System:** Agilent<sup>®</sup> 1290  
**Detection:** Agilent 6460 QQQ

### Analytes

- |            |           |            |
|------------|-----------|------------|
| 1. 6:2 FTS | 11. PFDoA | 21. PFTeDA |
| 2. 8:2 FTS | 12. PFDS  | 22. PFTrDA |
| 3. EtFOSA  | 13. PFHpA | 23. PFUdA  |
| 4. EtFOSE  | 14. PFHpS |            |
| 5. FOSA    | 15. PFHxA |            |
| 6. MeFOSA  | 16. PFHxS |            |
| 7. MeFOSE  | 17. PFNA  |            |
| 8. PFBA    | 18. PFOA  |            |
| 9. PFBS    | 19. PFOS  |            |
| 10. PFDA   | 20. PFPeA |            |

### PFOA



App ID 23838



# APPLICATION

## Luna Omega Ordering Information

1.6 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
<b>Polar C18</b>	00A-4748-AN	00B-4748-AN	00D-4748-AN	00F-4748-AN	AJO-9505
<b>PS C18</b>	00A-4752-AN	00B-4752-AN	00D-4752-AN	00F-4752-AN	AJO-9508
<b>C18</b>	00A-4742-AN	00B-4742-AN	00D-4742-AN	00F-4742-AN	AJO-9502
					for ID: 2.1 mm ID

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

5 µm Minibore Columns (mm)					SecurityGuard Cartridges (mm)
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	4 x 2.0* (10/pk)
<b>Polar C18</b>	00A-4754-AN	00B-4754-AN	00D-4754-AN	00F-4754-AN	AJO-7600
<b>PS C18</b>	00A-4753-AN	00B-4753-AN	00D-4753-AN	00F-4753-AN	AJO-7605
					for ID: 2.0 - 3.0 mm

5 µm MidBore™ Columns (mm)					SecurityGuard Cartridges (mm)
Phases	50 x 3.0	100 x 3.0	150 x 3.0		4 x 2.0* (10/pk)
<b>Polar C18</b>	00B-4754-YO	00D-4754-YO	00F-4754-YO		AJO-7600
<b>PS C18</b>	00B-4753-YO	00D-4753-YO	00F-4753-YO		AJO-7605
					for ID: 2.0 - 3.0 mm

5 µm Analytical Columns (mm)					SecurityGuard Cartridges (mm)
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0* (10/pk)
<b>Polar C18</b>	00B-4754-E0	00D-4754-E0	00F-4754-E0	00G-4754-E0	AJO-7601
<b>PS C18</b>	00B-4753-E0	00D-4753-E0	00F-4753-E0	00G-4753-E0	AJO-7606
					for ID: 3.1-8.0 mm

†SecurityGuard Analytical cartridges require holder, Part No.: KJO-4282

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### Disclaimer

Phenomenex is not affiliated with Agilent Technologies.

SecurityGuard is patented by Phenomenex. U.S. Patent No. 6,162,362.

**CAUTION:** this patent only applies to the analytical-sized guard cartridge holder, and does not apply to SemiPrep, PREP or ULTRA holders, or to any cartridges.

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If Luna 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.