

Luna[®] Omega 5 Frequently Asked Questions

Question 1: Are the Luna Omega stationary phases stable with a 100% aqueous mobile phase?

The Luna Omega Polar C18, Luna Omega PS C18, and Luna Omega SUGAR columns are all 100% aqueous stable. The Luna Omega C18 requires a minimum of 5% organic solvent in the mobile phase to prevent phase de-wetting.



Aqueous Stability of Luna Omega Polar C18

Question 2: How does the loadability of Luna Omega compare to other fully porous stationary phases?

A thermal treatment process during the manufacturing of the Luna Omega silica particles does reduce the relative surface area of the material, however, this reduction does not negatively impact the loadability. This is because the thermal treatment reduces the presence of micropores rather than accessible particle porosity. As such Luna Omega stationary phases provides excellent loadability in comparison to other fully porous stationary phase materials.



Conditions for al	l columns:			
Columns:	Luna Omega 1.	6 µm PS C18		
	ACQUITY BEH 1	.7µm C18		
Dimensions:	50 x 2.1 mm			
Mobile Phase:	A. Water with 0	1 % Formic Acid		
	B: Acetonitrile v	with 0.1 % Formic Acid		
Gradient	Time (min)	0/ R		
ui auleni.		70 D		
	0	5		
	5	80		
Flow Rate:	0.4 mL/min			
Temperature:	22 °C			
Detection:	UV @ 254 nm			
Sample:	1. Amitriptylin	e (0.02 µg)		
	2. Amitriptyline (0.04 µg)			
	3. Amitriptyline (0.06 µg)			
	4. Amitriptyline (0.08 µg)			
	5. Amitriptyline (0.10 µg)			
	6. Amitriptylin	e (0.15µg)		
	Amitriptylin	e (0.20 µg)		
	Q Amitrintulin	o (0.20 µg)		



Question 3: What advantages does the Luna Omega Polar C18 phase offer when developing a method?

Luna Omega Polar C18 is a reversed phase stationary phase with additional functionality that allows for retention of both non-polar and polar compounds. The phase's unique selectivity can be used to distinguish compounds of interest that vary by polar functional groups. For example, it could provide improved separation between related compounds such as a parent drug and its polar metabolites. In addition, the column is also 100% aqueous stable which allows for use of a wider range of mobile phases during method development.



Question 4: What advantages does the Luna Omega PS C18 phase offer when developing a method?

The Luna Omega PS C18 has a useful selectivity that comes from its positive surface modification and hydrophobic selectivity of a typical C18 phase. Therefore, this allows for both non-polar and polar reversed phase selectivity and increased retention. In particular the positive charge on the surface can be advantageous for method development by:

- Increasing reversed phase retention of small, polar basic compounds which could elute in or close to the void volume of a traditional column.
- Improving the peak shape of basic compounds which typically can exhibit peak tail on a traditional C18 phase.



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Question 5: Can Luna Omega HPLC columns be used in supercritical fluid (SFC) separations?

The Luna Omega analytical columns are fully compatible with SFC mobile phase applications. However, non-polar phases like C18 are not typically the first choice for SFC separations. We recommend starting with a mixed functional phase such as Luna NH_2 , Luna Si(2), or Kinetex Biphenyl.



Material Characteristics

Phase	Particle Sizes (µm)	Pore Size (Å)	Effective Surface Area (m²/g)	Effective Carbon Load %	pH Stability	Pressure Stability
Luna Omega C18	1.6	100	260	11	1.5-8.5 [*]	1.000/0001
Luna Omega Polar C18	1.6, 3, 5	100	260	9	1.5-8.5 [*]	1,000/600'
Luna Omega PS C18	1.6, 3, 5	100	260	9	1.5-8.5 [*]	Dar

 $^{\star}\,$ pH stability under gradient conditions. pH stability is 1.5 - 10 under isocratic conditions.

[†] 2.1 mm ID columns are pressure stable up to 1000 bar.

Luna Omega Ordering Information

10.11								
1.6 µm Micro	obore Columns (mi	m)						
Phases	50 x 1.0	100 x 1.0	150 x 1.0	J				
Polar 618	00B-4748-A0 00B-4742-A0	00D-4748-A0 00D-4742-A0	00F-4748- 00F-4742-	Δ0				
PS C18	00B-4752-A0	00D-4752-A0	-	NO				
					CoourituCuard			
1.6 um Mini	ihore Columns (mm	n			III TRA Cartridges			
Phases	30 x 2 1	-7 50 x 2 1	100 x 2 1	150 x 2.1	3/nk‡			
Polar C18	00A-4748-AN	00B-4748-AN	00D-4748-AN	00F-4748-AN	AJ0-9505			
PS C18	00A-4752-AN	00B-4752-AN	00D-4752-AN	00F-4752-AN	AJ0-9508			
C18	00A-4742-AN	00B-4742-AN	00D-4742-AN	00F-4742-AN	AJ0-9502			
					for 2.1 mm ID			
3 um Minibo	ore and MidBore™ (Columns (mm)						SecurityGuard Cartridges (mm)
Phases	30 x 2.1	50 x 2.1	100 x 2.1	150 x 2.1	50 x 3.0	100 x 3.0	150 x 3.0	4 x 2.0°
								/10 pk
Polar C18	00A-4760-AN	00B-4760-AN	00D-4760-AN	00F-4760-AN	00B-4760-Y0	00D-4760-Y0	00F-4760-Y0	AJ0-7600
PS C18	00A-4758-AN	00B-4758-AN	00D-4758-AN	00F-4758-AN	00B-4758-Y0	00D-4758-Y0	00F-4758-Y0	AJ0-7605
					0			101 ID. 2.0-3.0 IIIIII
3 µm Analyt	tical Columns (mm))			Cartridges (mm	5		
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0°			
					/10 pk			
Polar C18	00B-4760-E0	00D-4760-E0	00F-4760-E0	00G-4760-E0	AJ0-7601			
PS C18	00B-4758-E0	00D-4758-E0	00F-4758-E0	00G-4758-E0	AJ0-7606			
_					IUI ID. 3.2-0.0 IIIIII			
5 um Minibo	ore and MidBore Co	olumns (mm)						Cartridges (mm)
Phases	30 x 2 1	50 x 2.1	100 x 2 1	150 x 2 1	50 x 3 0	100 x 3.0	150 x 3.0	4 x 2 0°
T Huses	00 X 2.1	50 X 2.1	100 X 2.1	100 X 2.1	50 X 0.0	100 x 0.0	100 x 0.0	/10.nk
Polar C18	00A-4754-AN	00B-4754-AN	00D-4754-AN	00F-4754-AN	00B-4754-Y0	00D-4754-Y0	00F-4754-Y0	AJ0-7600
PS C18	00A-4753-AN	00B-4753-AN	00D-4753-AN	00F-4753-AN	00B-4753-Y0	00D-4753-Y0	00F-4753-Y0	AJ0-7605
						-		for ID: 2.0 - 3.0 mm
					SecurityGuard	1		
5 µm Analyt	lical columns (mm))			Cartridges (mm)			
Phases	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	4 x 3.0"			
Polar C18	00B-4754-E0	00D-4754-E0	00E-4754-E0	000-4754-50	/10 pk	-		
PS C18	00B-4753-E0	00D-4753-E0	00F-4753-E0	00G-4753-F0	AJ0-7606			
					for ID: 3.2-8.0 mm			

SecurityGuard ULTRA Cartridges require holder, Part No.: AJ0-9000
 SecurityGuard Standard Analytical Cartridges require holder, Part No.: KJ0-4282

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5 Frequently Asked Questions About Luna Omega HPLC/UHPLC Columns

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