

# Extend Column Lifetime with VanGuard Column Protection Products



VanGuard™ Pre-columns and Cartridges prolong analytical column lifetimes without compromising chromatographic performance. They are available in a wide selection of particle sizes and stationary phases, making them ideally suited for the physical and chemical protection of all Waters® analytical columns.

- Removes particulates and chemical contamination
- Maintains UPLC®, UHPLC, and HPLC separation efficiency
- Provides cost effective protection for Waters analytical columns



## SELECTION GUIDE

VanGuard Column Protection Cartridge/Pre-column selection based on analytical column I.D.			
Column I.D.	Particle size	VanGuard format	VanGuard dimension
2.1 mm	< 2 µm	Pre-column	2.1 x 5 mm
2.1 mm	> 2 µm	Cartridge Column	2.1 x 5 mm
3.0 mm	> 2 µm	Cartridge Column	2.1 x 5 mm
3.9 mm	> 2 µm	Cartridge Column	3.9 x 5 mm
4.6 mm	> 2 µm	Cartridge Column	3.9 x 5 mm

## ORDERING INFORMATION

**VanGuard Pre-columns** are UltraPerformance LC® pre-columns that will accommodate all 2.1 mm I.D. analytical columns. VanGuard Pre-columns connect directly to the inlet of the ACQUITY UPLC® Column to reduce dispersion and eliminate leaks due to faulty connections.



### CORTECS UPLC VanGuard Pre-columns, 1.6 µm

Dimension	Particle size	C <sub>18</sub> +	C <sub>18</sub>	C <sub>8</sub>	HILIC	Phenyl
2.1 x 5 mm	1.6 µm	186007125	186007123	186008423	186007124	186008420

### ACQUITY UPLC VanGuard Pre-columns, 1.7 µm

Dimension	Particle size	CSH C <sub>18</sub>	CSH Fluoro-Phenyl	CSH Phenyl-Hexyl	BEH C <sub>18</sub>	BEH Shield RP18	BEH C <sub>8</sub>	BEH Phenyl	BEH Amide
2.1 x 5 mm	1.7 µm	186005303	186005358	186005413	186003975	186003977	186003978	186003979	186004799

### ACQUITY UPLC VanGuard Pre-columns, 1.8 µm

Dimension	Particle size	HSS C <sub>18</sub>	HSS C <sub>18</sub> SB	HSS T3	HSS PFP	HSS Cyano
2.1 x 5 mm	1.8 µm	186003981	186004136	186003976	186005974	186005995

**VanGuard Cartridges** are high performance HPLC and UHPLC column guards that will accommodate all 2.1 mm, 3.0 mm, 3.9 mm, and 4.6 mm I.D. analytical columns. VanGuard Cartridges are available for the following Waters Brands and configurations:



Brand	Particle size	Recommended VanGuard Cartridge	
		2.1 mm and 3.0 mm I.D. analytical columns	3.9 mm and 4.6 mm I.D. analytical columns
Atlantis®	3 and 5 µm	2.1 x 5 mm	3.9 x 5 mm
CORTECS®	2.7 µm	2.1 x 5 mm	3.9 x 5 mm
SunFire®	2.5, 3.5, and 5 µm	2.1 x 5 mm	3.9 x 5 mm
Symmetry®	3.5 and 5 µm	2.1 x 5 mm	3.9 x 5 mm
XBridge® BEH	2.5, 3.5, and 5 µm	2.1 x 5 mm	3.9 x 5 mm
XSelect® CSH	2.5, 3.5, and 5 µm	2.1 x 5 mm	3.9 x 5 mm
XSelect® HSS	2.5, 3.5, and 5 µm	2.1 x 5 mm	3.9 x 5 mm
XTerra®	2.5, 3.5, and 5 µm	2.1 x 5 mm	3.9 x 5 mm

#### Universal VanGuard Cartridge Holder

Description	Part Number
Universal VanGuard Cartridge Holder	186007949

#### CORTECS VanGuard Cartridges

Dimension	Particle size	C <sub>18</sub>	C <sub>18</sub> +	C <sub>8</sub>	HILIC	Phenyl
2.1 x 5 mm	2.7 µm	186007682	186007685	186008421	186007688	186008418
3.9 x 5 mm	2.7 µm	186007684	186007687	186008422	186007690	186008419

#### XBridge VanGuard Cartridges

Dimension	Particle size	C <sub>18</sub>	C <sub>8</sub>	Shield RP18	Phenyl	HILIC	Amide
2.1 x 5 mm	2.5 µm	186007772	186007781	186007808	186007799	186007790	186007763
2.1 x 5 mm	3.5 µm	186007766	186007775	186007802	186007793	186007784	186007757
2.1 x 5 mm	5 µm	186007769	186007778	186007805	186007796	186007787	186007760
3.9 x 5 mm	2.5 µm	186007774	186007783	186007810	186007801	186007792	186007765
3.9 x 5 mm	3.5 µm	186007768	186007777	186007804	186007795	186007786	186007759
3.9 x 5 mm	5 µm	186007771	186007780	186007807	186007798	186007789	186007762

#### XSelect VanGuard Cartridges

Dimension	Particle size	CSH C <sub>18</sub>	CSH Phenyl-Hexyl	CSH Fluoro-Phenyl	HSS T3	HSS C <sub>18</sub>	HSS C <sub>18</sub> SB	HSS PFP	HSS CN
2.1 x 5 mm	2.5 µm	186007817	186007839	186007827	186007884	186007857	186007848	186007875	186007866
2.1 x 5 mm	3.5 µm	186007811	186007830	186007820	186007878	186007851	186007842	186007869	186007860
2.1 x 5 mm	5 µm	186007814	186007836	186007824	186007881	186007854	186007845	186007872	186007863
3.9 x 5 mm	2.5 µm	186007819	186007841	186007829	186007886	186007859	186007850	186007877	186007868
3.9 x 5 mm	3.5 µm	186007813	186007832	186007822	186007880	186007853	186007844	186007871	186007862
3.9 x 5 mm	5 µm	186007816	186007838	186007826	186007883	186007856	186007847	186007874	186007865

#### Symmetry VanGuard Cartridges

Dimension	Particle size	Symmetry C <sub>18</sub>	Symmetry C <sub>8</sub>	Symmetry Shield RP18	Symmetry Shield RP8	Symmetry300 C <sub>4</sub>	Symmetry300 C <sub>18</sub>
2.1 x 5 mm	3.5 µm	186007725	186007733	186007749	186007741	186007717	186007709
2.1 x 5 mm	5 µm	186007729	186007737	186007753	186007745	186007721	186007713
3.9 x 5 mm	3.5 µm	186007727	186007735	186007751	186007743	186007719	186007711
3.9 x 5 mm	5 µm	186007731	186007739	186007755	186007747	186007723	186007715

#### Atlantis VanGuard Cartridges

Dimension	Particle size	dC <sub>18</sub>	T3	HILIC
2.1 x 5 mm	3 µm	186007658	186007674	186007666
2.1 x 5 mm	5 µm	186007662	186007678	186007670
3.9 x 5 mm	3 µm	186007660	186007676	186007668
3.9 x 5 mm	5 µm	186007664	186007680	186007672

#### SunFire VanGuard Cartridges

Dimension	Particle size	C <sub>18</sub>	C <sub>8</sub>
2.1 x 5 mm	2.5 µm	186007691	186007700
2.1 x 5 mm	3.5 µm	186007694	186007703
2.1 x 5 mm	5 µm	186007697	186007706
3.9 x 5 mm	2.5 µm	186007693	186007702
3.9 x 5 mm	3.5 µm	186007696	186007705
3.9 x 5 mm	5 µm	186007699	186007708

#### XTerra VanGuard Cartridges

Dimension	Particle size	MS C <sub>18</sub>	MS C <sub>8</sub>	Shield RP18	Shield RP8	Phenyl
2.1 x 5 mm	2.5 µm	186007887	186007901	–	–	–
2.1 x 5 mm	3.5 µm	186007892	186007905	186007929	186007941	186007917
2.1 x 5 mm	5 µm	186007896	186007909	186007933	186007945	186007921
3.9 x 5 mm	2.5 µm	186007889	186007903	–	–	–
3.9 x 5 mm	3.5 µm	186007894	186007907	186007931	186007943	186007919
3.9 x 5 mm	5 µm	186007899	186007911	186007935	186007947	186007923