VDSpher® Blockbuster Phases for Replacements

In the past few years, VDS optilab has seen a steadily rising demand for its own brand VDSpher HPLC columns. The following gives an overview on the six most frequently purchased VDSpher Reversed Phases. In addition to phase characteristics and application conditions, recommendations for replacing phases of other manufacturers by the respective VDSpher Reversed Phase are given.

VDSpher® Blockbusters: Phase Characteristics and Application Conditions

RANKING	PHASE NAME	PORE SIZE	CARBON CONTENT	SURFACE AREA	ENDCAPPING	pH RANGE[1]
1	VDSpher PUR 100 C18-E monomerically bonded C18	100 Å	16.8%	320 m²/g	yes | liquid phase	2 – 8
2	VDSpher PUR 100 C18-SE monomerically bonded C18	100 Å	17.0%	320 m²/g	yes | gas phase	2 – 9
3	VDSpher PUR 100 C18-M-SE polymerically bonded C18	100 Å	20.0%	320 m²/g	yes | gas phase	1.5 – 9.5
4	VDSpher PUR 100 C8-E monomerically bonded C8	100 Å	10.0%	320 m²/g	yes | liquid phase	2 – 8
5	VDSpher PUR 100 C8-SE monomerically bonded C8	100 Å	10.4%	320 m²/g	yes | gas phase	2 – 8
6	VDSpher OptiAqua PUR 100 C18 monomerically bonded C18	100 Å	13.0%	320 m²/g	yes | hydrophilic	3 – 8

[1] pH RANGE: Recommendation only related to aqueous or RP conditions as well as constant flow applications. When not in use, HPLC columns have to be stored as provided or recommended.

1: VDSpher® PUR 100 C18-E

VDSpher C18-E is a C18-modified silica gel adapted for standard RP analyses. Monomerically bonded functionalities and liquid phase endcapping result in a C18 phase of medium hydrophobicity exhibiting residual silanols at the surface. VDSpher C18-E is suitable as alternative for partially endcapped C18 phases having residual silanol activity.

The chemical and physical characteristics of VDSpher PUR 100 C18-E can be compared with:

Zorbax® Eclipse 95 Plus C18 by AGILENT TECHNOLOGIES
Delta-Pak™ 100 C18 by WATERS

VDSpher PUR 100 C18-E is available in the following particle sizes: 2.5 µm | 3 µm | 3.5 µm | 4 µm | 5 µm | 10 µm.

2: VDSpher® PUR 100 C18-SE

VDSpher C18-SE has a monomeric C18 bonding and the silanol activity is significantly reduced by gas phase endcapping. Both hydrophobicity and pH stability are increased compared to partially and non-endcapped VDSpher Reversed Phases. VDSpher C18-SE is suitable as alternative for fully endcapped C18 phases having minimized silanol activity.

The chemical and physical characteristics of VDSpher PUR 100 C18-SE can be compared with:

Purospher® 90 RP-18 endcapped by MERCK
Luna® 100 C18(2) by PHENOMENEX

VDSpher PUR 100 C18-SE is available in the following particle sizes: 2.5 µm | 3 µm | 3.5 µm | 4 µm | 5 µm | 10 µm.

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3: VDSpher® PUR 100 C18-M-SE

VDSpher C18-M-SE is a highly hydrophobic phase due to a polymeric C18 bonding combined with gas phase endcapping. Both improves selectivity for separating spatial structures and pH stability resulting in a base-deactivated phase. VDSpher C18-M-SE is suitable as alternative for fully endcapped C18 phases of high density having minimized silanol activity.

The chemical and physical characteristics of VDSpher PUR 100 C18-M-SE can be compared with:

Luna® 100 C18(2) by PHENOMENEX
NUCLEODUR® 110 C18 Isis by MACHEREY-NAGEL

VDSpher PUR 100 C18-M-SE is available in the following particle sizes: 2.5 µm | 3 µm | 3.5 µm | 4 µm | 5 µm | 10 µm.

4: VDSpher® PUR 100 C8-E

VDSpher C8-E has monomerically bonded C8 groups with an additional endcapping performed in the liquid phase. As less hydrophobic phase compared to VDSpher C18-E the activity of the remaining surface silanols becomes more important. VDSpher C8-E is suitable as alternative for partially endcapped C8 phases having residual silanol activity.

The chemical and physical characteristics of VDSpher PUR 100 C8-E can be compared with:

Zorbax® Eclipse 95 Plus C8 by AGILENT TECHNOLOGIES

VDSpher PUR 100 C8-E is available in the following particle sizes: 3 µm | 3.5 µm | 4 µm | 5 µm | 10 µm.

5: VDSpher® PUR 100 C8-SE

VDSpher C8-SE is a C8-modified phase with significantly reduced silanol activity due to a gas phase endcapping. The resulting base deactivated phase has more hydrophobic characteristics in comparison with VDSpher C8-E. VDSpher C8-SE is suitable as alternative for fully endcapped C8 phases having minimized silanol activity.

The chemical and physical characteristics of VDSpher PUR 100 C8-SE can be compared with:

Luna® 100 C8(2) by PHENOMENEX

VDSpher PUR 100 C8-SE is available in the following particle sizes: 3 µm | 3.5 µm | 5 µm | 10 µm.

6: VDSpher® OptiAqua PUR 100 C18

VDSpher OptiAqua C18 is a C18-modified phase of medium hydrophobicity. 100% water compatibility is enabled by a special hydrophilic endcapping. The phase is suitable for the analyses of water-soluble substances. VDSpher OptiAqua C18 is suitable as alternative for water-compatible C18 phases having hydrophilic characteristics.

The chemical and physical characteristics of VDSpher OptiAqua PUR 100 C18 can be compared with:

Synergi 100 Hydro-RP by PHENOMENEX
NUCLEODUR® 110 C18 Pyramid by MACHEREY-NAGEL

VDSpher OptiAqua PUR 100 C18 is available in the following particle sizes: 2.5 µm | 3 µm | 5 µm | 10 µm.

Notes and Hints

RANKING: Sales ranking of VDSpher Reversed Phases is related to a particle size of 5 µm as well as to HPLC columns of 150 × 4.6 mm and 250 × 4.6 mm as standard dimensions for analytical purposes.

REPLACEMENT RECOMMENDATIONS: Recommendations regarding comparability of chemical and physical characteristics are based on empirical values from customers using VDSpher Reversed Phases as well as a comparison of the specifications of the VDSpher Reversed Phases and those of the phases of other manufacturers. Empirical values are related to specific applications/methods from customers and may differ for other applications/methods. VDS optilab accepts no liability for results that deviate using VDSpher Reversed Phases compared to phases of other manufacturers.

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