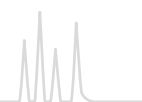




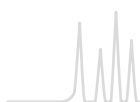
# NUCLEOSHELL® phase overview



## Overview of NUCLEOSHELL® HPLC phases

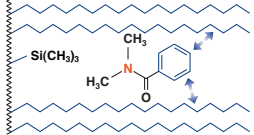
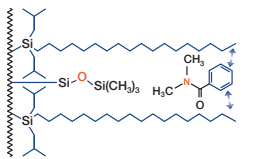
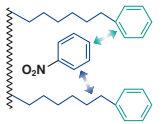
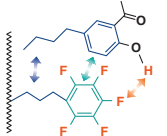
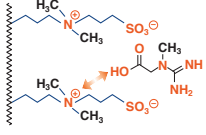
Phase	Specification	Page	Characteristic*	Stability	Structure
 RP 18	octadecyl, multi-encapping 7.8 % C (2.7 µm particles) 6.1 % C (5 µm particles) USP L1	200	A ●●●●● B ● C ●●●	pH 1–11, suitable for LC/MS	NUCLEOSHELL® (Si-O) <sub>2</sub> H 
 RP 18plus	octadecyl (monomeric), multi-encapping 5.7 % C (2.7 µm particles) 4.4 % C (5 µm particles) USP L1	202	A ●●●●● B ●●●● C -	pH 2–9, suitable for LC/MS	NUCLEOSHELL® (Si-O) <sub>2</sub> H 
 Phenyl-Hexyl	phenylhexyl, multi-encapping 4.5 % C (2.7 µm particles) USP L11	204	A ●● B ●●●● C ●	pH 1–10, suitable for LC/MS	NUCLEOSHELL® (Si-O) <sub>2</sub> H 
 PFP	pentafluorophenyl, multi-encapping ~ 3 % C (2.7 µm particles) USP L43	206	A ●● B ●●●●● C ●●●●●	pH 1–9, suitable for LC/MS	NUCLEOSHELL® (Si-O) <sub>2</sub> H 
 HILIC	zwitterionic ammonium – sulfonic acid 1.3 % C (2.7 µm particles)	208	A ● B ●●●●● C -	pH 2–8.5, suitable for LC/MS	NUCLEOSHELL® (Si-O) <sub>2</sub> H 

\* A = ● hydrophobic selectivity, B = ● polar / ionic selectivity, C = ● steric selectivity



# NUCLEOSHELL<sup>®</sup> phase overview



Application	Similar phases**	Interactions · retention mechanism
overall sophisticated analytical separations, e.g., analgesics, anti-inflammatory drugs, antidepressants; herbicides; phytopharmaceuticals; immunosuppressants	Kinetex <sup>®</sup> C18; Cortecs <sup>®</sup> C18; Raptor <sup>®</sup> C18; Accucore <sup>®</sup> C18; Ascentis <sup>®</sup> Express C18	hydrophobic (van der Waals interactions) 
overall sophisticated analytical separations, especially for polar compounds, e.g., pharmaceuticals like antibiotics, water-soluble vitamins, organic acids	Kinetex <sup>®</sup> XB-C18; Bonshell <sup>®</sup> ASB-C18; Raptor <sup>®</sup> ARC-C18;	hydrophobic (van der Waals interactions) 
aromatic and unsaturated compounds, polar compounds like pharmaceuticals, antibiotics	Ascentis <sup>®</sup> Express Phenyl-Hexyl; Kinetex <sup>®</sup> Phenyl-Hexyl; Accucore <sup>®</sup> Phenyl-Hexyl; Ultracore <sup>®</sup> Phenyl-Hexyl; Poroshell <sup>®</sup> Phenyl-Hexyl	$\pi$ - $\pi$ and hydrophobic 
aromatic and unsaturated compounds, phenols, halogenated hydrocarbons, isomers, polar compounds like pharmaceuticals, antibiotics	Kinetex <sup>®</sup> PFP; Ascentis <sup>®</sup> Express F5; Accucore <sup>®</sup> PFP	polar (H bond), dipole-dipole, $\pi$ - $\pi$ and hydrophobic 
hydrophilic compounds such as organic polar acids and bases, polar natural compounds	–	ionic / hydrophilic and electrostatic 

\*\* phases which provide a similar selectivity based on chemical and physical properties