
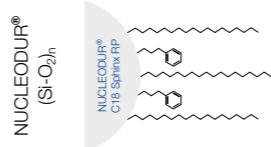
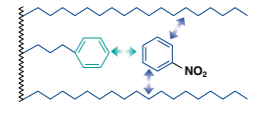

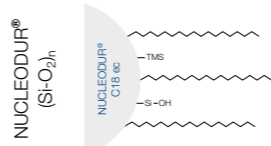
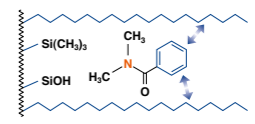

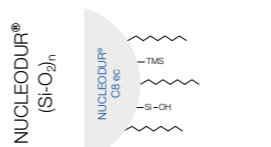
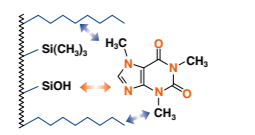

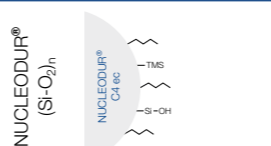
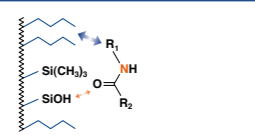

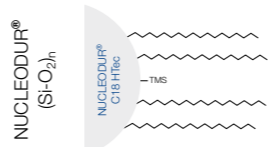
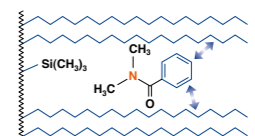

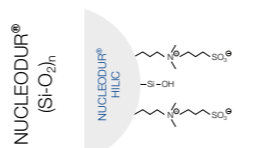
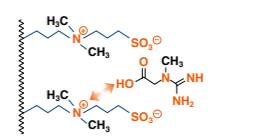

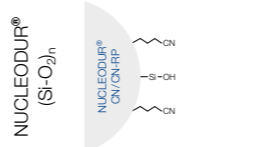
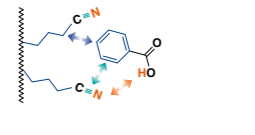

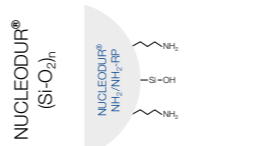
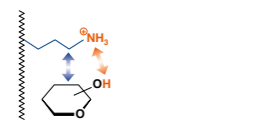

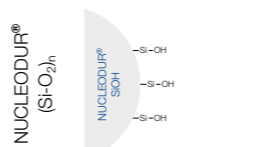
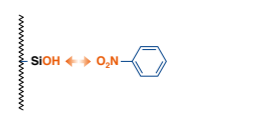


Phase	Specification	Characteristic*	Stability	Structure	Application	Similar phases**	Interactions - retention mechanism
C18 Gravity	octadecyl, high density coating, multi-endcapping 18% C USP L1	A ●●●●● B ● C ●●●	pH 1–11, suitable for LC/MS	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® C18 Gravity	in general compounds with ionizable functional groups such as basic pharmaceuticals and pesticides	NUCLEOSIL® C18 HD Xterra® RP18/MS C18; Luna® C18(2), Gemini®, Synergi® Max RP; Zorbax® Extend-C18; Inertsil® ODS III; Purospher® STAR RP-18; Hypersil™ BDS	hydrophobic (van der Waals interactions)
C18 Gravity-SB	octadecyl (monomeric), extensive endcapping 13% C USP L1	A ●●●●● B ●●●● C -	pH 1–9, suitable for LC/MS	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® C18 Gravity-SB	overall sophisticated analytical separations, especially for polar compounds, e.g., antibiotics, water-soluble vitamins, organic acids	-	hydrophobic (van der Waals interactions) with additional polar interactions
C8 Gravity	octyl, high density coating, multi-endcapping 11% C USP L7	A ●●●●● B ●●● C ●●	pH 1–11, suitable for LC/MS	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® C8 Gravity	like C ₁₈ Gravity, however, generally shorter retention times for nonpolar compounds	NUCLEOSIL® C8 HD Xterra® RP8/MS C ₈ ; Luna® C ₈ ; Zorbax® Eclipse XDB-C ₈	hydrophobic (van der Waals interactions)
C18 Isis	octadecyl phase with specially crosslinked surface modification, endcapping 20% C USP L1	A ●●●●●● B ●●●● C ●●●●●●	pH 1–10, suitable for LC/MS	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® C18 Isis	high steric selectivity, thus suited for separation of positional and structural isomers, planar / nonplanar molecules	NUCLEOSIL® C18 AB Inertsil® ODS-P; Pro C18 RS	steric and hydrophobic
C18 Pyramid	octadecyl with polar endcapping 14% C USP L1	A ●●●●● B ●●●●● C ●●●	stable in 100% aqueous eluent, pH 1–9, suitable for LC/MS	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® C18 Pyramid	basic pharmaceuticals, very polar compounds, organic acids	Aqua, Synergi® Hydro-RP; AQ; Atlantis® dC18; Polaris® C18-A	hydrophobic and polar (H bonds)
PolarTec	octadecyl with embedded polar group, endcapping 17% C USP L1 and L60	A ●●●●● B ●●●●● C ●●●●●	stable in 100% aqueous eluent, pH 1–9, suitable for LC/MS	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® PolarTec	basic pharmaceuticals, organic acids, pesticides, amino acids, water-soluble vitamins	NUCLEOSIL® C18 Nautilus ProntoSIL® C18 AQ; Zorbax® Bonus-RP; Polaris® Amide-C18; Ascentis® RP Amide; SymmetryShield™ RP18; SUPELCOSIL™ LC-ABZ+; HyPURITY™ ADVANCE; ACCLAIM Polar AD.II	hydrophobic and polar (H bonds)
Phenyl-Hexyl	phenylhexyl, multi-endcapping 10% C USP L11	A ●●●●● B ●●●●● C ●●●	pH 1–10, suitable for LC/MS	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® Phenyl-Hexyl	aromatic and unsaturated compounds, polar compounds like pharmaceuticals, antibiotics	Luna® Phenyl-Hexyl; Zorbax® Eclipse Plus Phenyl-Hexyl; Kromasil® Phenyl-Hexyl	π-π and hydrophobic
π ²	biphenylpropyl, multi-endcapping 17% C USP L11	A ●●●●● B ●●●●● C ●●●●●	pH 3–10	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® π ²	aromatic and unsaturated compounds, polar compounds like pharmaceuticals, antibiotics	Pinnacle® DB Biphenyl; Ultra Biphenyl	π-π and hydrophobic
PPF	pentafluorophenylpropyl, multi-endcapping 8% C USP L43	A ●●●●● B ●●●●● C ●●●●●	pH 1–9, suitable for LC/MS	NUCLEODUR® (Si-O) ₂ _n NUCLEODUR® PFP	aromatic and unsaturated compounds, halogen compounds, phenols, isomers, polar pharmaceuticals, antibiotics	ACQUITY® CSH Fluoro-Phenyl; Hypersil™ GOLD PFP; Luna® PFP(2); Discovery® HS F5; Allure® PFP Propyl; Ultra II PFP Propyl	polar (H bond), dipole-dipole, π-π and hydrophobic

* A = ● hydrophobic selectivity, B = ● polar / ionic selectivity, C = ● steric selectivity
** phases which provide a similar selectivity based on chemical and physical properties



Phase	Specification	Characteristic*	Stability	Structure	Application	Similar phases**	Interactions - retention mechanism
 Sphinx RP	bifunctional, balanced ratio of propylphenyl and octadecyl, endcapping 15% C USP L1 and L11	A ●●● B ●●● C ●	pH 1–10, suitable for LC/MS		compounds with aromatic and multiple bond systems	no similar phases	π - π and hydrophobic 
 C18 ec	octadecyl, medium density, endcapping, available in 110 Å and 300 Å pore size 17.5% / 4% C USP L1	A ●●●● B ●●● C ●●●●	pH 1–9		robust C ₁₈ phase for routine analyses	NUCLEOSIL® C18 Spherisorb® ODS II; Symmetry® C18; Hypersil® ODS; Inertsil® ODS II; Kromasil® C18; LiChrospher® RP-18	hydrophobic (van der Waals interactions) some residual silanol interactions 
 C8 ec	octyl, medium density, endcapping 10.5% C USP L7	A ●●● B ●●● C ●●●●	pH 1–9		robust C ₈ phase for routine analyses	NUCLEOSIL® C8 ec / C8 Spherisorb® C ₈ ; Symmetry® C ₈ ; Hypersil® MOS; Kromasil® C ₈ ; LiChrospher® RP-8	hydrophobic (van der Waals interactions) some residual silanol interactions 
 C4 ec	butyl, medium density, endcapping, 300 Å pore size 2.5% C USP L26	A ●●● B ●●● C ●●●	pH 1–9		biological macromolecules like proteins or peptides	Jupiter® C ₄ ; ACE® C ₄	hydrophobic (van der Waals interactions) some residual silanol interactions 
 C18 HTec	octadecyl, high density coating, high capacity, multi-endcapping 18% C USP L1	A ●●●●● B ●●●● C ●●●●	pH 1–11, suitable for LC/MS		robust and well base deactivated C ₁₈ phase; all separation tasks with preparative potential	Xterra® RP18 / MS C18 / SunFire™ C18; Luna® C18(2), Gemini®, Synergi® Max RP; Zorbax® Extend-C18; Inertsil® ODS III; Purospher® STAR RP-18; Hypersil® BDS	hydrophobic (van der Waals interactions) 
 HILIC	zwitterionic ammonium-sulfonic acid phase, no endcapping 7% C	A ●●●●● B ●●●●● C -	pH 2–8.5		hydrophilic compounds such as polar organic acids and bases, polar natural compounds	Sequant™ ZIC®-HILIC; Obelisc™	ionic / hydrophilic and electrostatic 
 CN / CN-RP	cyano (nitrile) for NP and RP separations, endcapping 7% C USP L10	A ●●●●● B ●●●●● C -	pH 1–8, stable towards highly aqueous mobile phases		polar organic compounds (basic drugs), molecules containing π -electron systems	NUCLEOSIL® CN / CN-RP	π - π and polar (H bond), hydrophobic 
 NH ₂ / NH ₂ -RP	aminopropyl for NP and RP separations, no endcapping 2.5% C USP L8	A ●●●●● B ●●●●● C -	pH 2–8, stable towards highly aqueous mobile phases		sugars, sugar alcohols and other hydroxy compounds, DNA bases, polar compounds in general	NUCLEOSIL® NH ₂ / NH ₂ -RP	polar / ionic and hydrophobic 
 SiOH	unmodified high purity silica, no endcapping USP L3	A - B - C -	pH 2–8		polar compounds in general	NUCLEOSIL® SiOH	polar / ionic 

* A = ● hydrophobic selectivity, B = ● polar / ionic selectivity, C = ● steric selectivity
** phases which provide a similar selectivity based on chemical and physical properties

