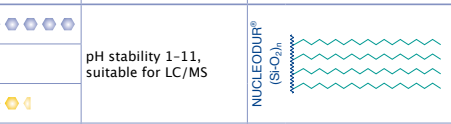
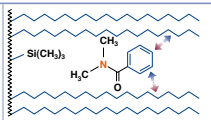
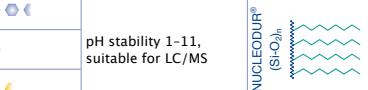
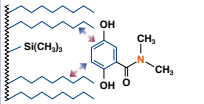
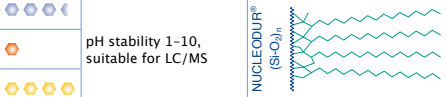
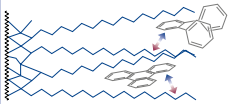
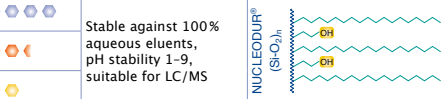
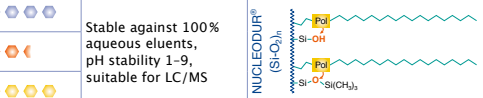
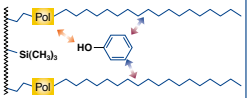
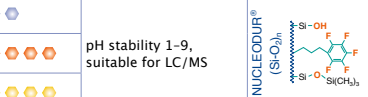
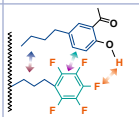
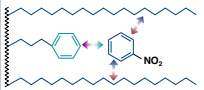
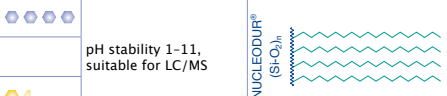
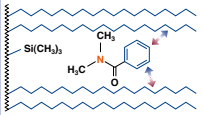
Overview of NUCLEODUR® HPLC phases

An optimized phase for every separation

Phase	Specification	Characteristics*	Stability	Structure	Application	Similar phases** (同等品)	Interactions · Retention mechanism
C_{18} Gravity	Octadecyl phase, high density coating, multi-endcapping 18% C · USP **L1**	A B C	pH stability 1–11, suitable for LC/MS		In general compounds with ionizable functional groups such as basic pharmaceuticals and pesticides	**NUCLEOSIL® C_{18} HD** XTerra® RP18 / MS C_{18}; Luna® C18(2), Gemini®, Synergi® Max RP; Zorbax® Extend-C18; Inertsil® ODS III; Purospher® STAR RP-18; Hypersil™ BDS	**Hydrophobic** (van der Waals) 
C_8 Gravity	Octyl phase, high density coating, multi-endcapping 11% C · USP **L7**	A B C	pH stability 1–11, suitable for LC/MS		Like C_{18} Gravity, however generally shorter retention times for nonpolar compounds	**NUCLEOSIL® C_8 HD** XTerra® RP8 / MS C_8; Luna® C8; Zorbax® Eclipse XDB-C8	**Hydrophobic** (van der Waals) 
C_{18} Isis	Octadecyl phase with specially crosslinked surface modification, endcapping 20% C · USP **L1**	A B C	pH stability 1–10, suitable for LC/MS		High steric selectivity, thus suited for separation of positional and structural isomers, planar/nonplanar molecules	**NUCLEOSIL® C_{18} AB** Inertsil® ODS-P; Pro C18 RS; Zorbax® SB	Steric and **hydrophobic** 
C_{18} Pyramid	C_{18} modification with polar endcapping 14% C · USP **L1**	A B C	Stable against 100% aqueous eluents, pH stability 1–9, suitable for LC/MS		Basic pharmaceutical ingredients, very polar compounds, organic acids	Aqua, Synergi® Hydro-RP; AQ; Atlantis® dC_{18}	**Hydrophobic** and **polar** (H bonds) 
PolarTec	Octadecyl phase with embedded polar group, endcapping 17% C · USP **L1** and **L60**	A B C	Stable against 100% aqueous eluents, pH stability 1–9, suitable for LC/MS		Basic pharmaceuticals, organic acids, pesticides, amino acids, water-soluble vitamins	**NUCLEOSIL® C_{18} Nautilus** ProntoSIL® C18; Zorbax® Bonus-RP, Polaris® Amide-C18; Ascentis® RP Amide; SymmetryShield™ RP18; SUPELCOSIL™ LC-ABZ+; HyPURITY™ ADVANCE	**Hydrophobic** and **polar** (H bonds) 
PFP	Pentafluorophenyl-propyl modification with multi-endcapping 8% C · USP **L43**	A B C	pH stability 1–9, suitable for LC/MS		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 bonds), **dipole-dipole**, **π–π** and **hydrophobic** 
Sphinx RP	Bifunctional RP phase, propylphenyl and C_{18} ligands, endcapping 15% C · USP **L1** and **L11**	A B C	pH stability 1–10, suitable for LC/MS		Compounds with aromatic and multiple bond systems	No similar phases	**π–π** and **hydrophobic** 
C_{18} HTec	Octadecyl phase with high capacity, high density coating, multi-endcapping 18% C · USP **L1**	A B C	pH stability 1–11, suitable for LC/MS		Robust and well base deactivated C_{18} phase; all separation tasks with preparative potential	XTerra® RP18 / MS C_{18} / SunFire™ C_{18}; Luna® C18(2), Gemini®, Synergi® Max RP; Zorbax® Extend-C18; Inertsil® ODS III; Purospher® STAR RP-18; Hypersil™ BDS	**Hydrophobic** (van der Waals) 

* A = Hydrophobic selectivity, B = Polar / ionic selectivity, C = Steric selectivity

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

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株式会社 ケムコプラス
http://www.chemcoplus.co.jp/

大阪本社
〒577-0065 大阪府東大阪市高井田中3-10-7
TEL (06) 6787-5551 (代)
FAX (06) 6787-6688

東京営業所
〒108-0074 東京都港区高輪2-19-17-701
TEL (03) 3444-4201 (代)
FAX (03) 3444-4238

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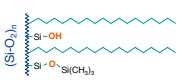
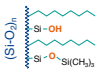
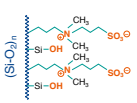
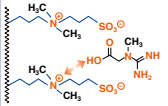
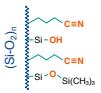
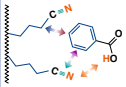
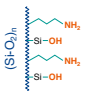
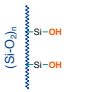
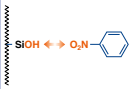
Overview of NUCLEODUR® HPLC phases

An optimized phase for every separation

Phase	Specification	Characteristics*	Stability	Structure	Application	Similar phases** (同等品)	Interactions · Retention mechanism
C_{18} ec	Octadecyl phase, medium density coating endcapping 17.5 % C · USP **L1**	A B C	pH stability 1–9		Robust C_{18} phase for routine analyses	**NUCLEOSIL® C_{18}** Spherisorb® ODS II, Symmetry® C_{18}; Hypersil™ ODS; Inertsil® ODS II; Kromasil C_{18}; LiChrospher® RP-18	**Hydrophobic** (van der Waals) Some residual silanol interactions	
C_8 ec	Octyl phase, medium density coating endcapping 10.5 % C · USP **L7**	A B C	pH stability 1–9		Robust C_8 phase for routine analyses	**NUCLEOSIL® C_8 ec / C_8** Spherisorb® C_8, Symmetry® C_8; Hypersil™ MOS; Kromasil C_8; LiChrospher® RP-8	**Hydrophobic** (van der Waals) Some residual silanol interactions	
HILIC	Zwitterionic ammonium sulfonic acid modification 7 % C	A B C –	pH stability 2–8.5, suitable for LC/MS		Hydrophilic compounds such as organic polar acids and bases, polar natural compounds	SeQuant™ ZIC®-HILIC; Obelisc™	**Ionic / hydrophilic** and **electrostatic**	
CN / CN-RP	Cyano (nitrile) phase for NP and RP separations 7 % C · USP **L10**	A B C –	pH stability 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 bonds), **hydrophobic**	
NH_2 / NH_2-RP	Amino phase for NP and RP separations 2.5 % C · USP **L8**	A B C –	pH stability 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 USP **L3**	A – B n.a. C –	pH stability 2–8		Polar compounds in general	**Unmodified NUCLEOSIL®**	**Polar / ionic**	

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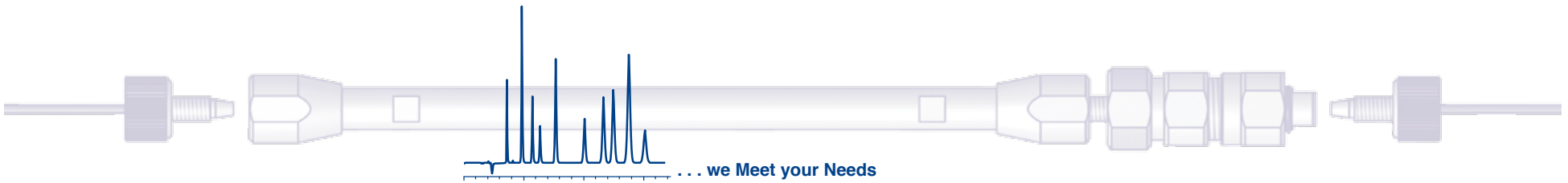
** Phases which provide a similar selectivity based on chemical and physical properties

NDurOverviewPhases_2013.indd



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株式会社 ケムコプラス
http://www.chemcoplus.co.jp/

大阪本社
〒577-0065 大阪府東大阪市高井田中3-10-7
TEL(06)6787-5551(代)
FAX(06)6787-6688

東京営業所
〒108-0074 東京都港区高輪2-19-17-701
TEL(03)3444-4201(代)
FAX(03)3444-4238

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