ANALYTICAL STATIONARY PHASES FOR ACHIRAL AND CHIRAL SFC/LC FROM YMC

		STATIONARY PHASE	PHASE CHARACTERISTICS (silica-based unless stated)	USP CLASS	PARTICLE SIZE (µm)	PORE SIZE (nm)	pH RANGE	TYPICAL APPLICATIONS
Achiral	Normal Phase / HILIC	YMC-Pack Diol-NP	classical polar modified NP phase	L20	5	6, 12	2.0–7.5	small organic molecules, fat-soluble vitamins, tocopherols
		YMC-Pack Polyamine II	specialty sugar phase, amino derivative, enhanced lifetime compared to NH2	L111	5	12	2.0–7.5	(malto-oligo)saccharides, nucleotides, sugars
		YMC-Pack NH2	classical basic NP/HILIC phase	L8	3, 5	12	2.0–7.5	sugars, nucleotides, water-soluble vitamins
		YMC-Pack SIL	ultra-high purity silica	L3	3, 5	6, 12	2.0–7.5	SFC, small organic molecules, fat-soluble vitamins, tocopherols
		YMC-Pack PVA-Sil	specialty NP/HILIC phase, polyvinyl alcohol bonded on silica support	L24	5	12	2.0–9.5	SFC, phospholipids, retinoids, lipids
		YMC-Pack CN	classical NP/HILIC phase	L10	3, 5	12, 30 *	2.0–7.5	SFC, proteins, steroids, catechols
		YMC-Triart Diol-HILIC	organic/inorganic hybrid silica, general purpose HILIC phase	L20	1.9, 3, 5	12	2.0–10.0	very polar small organic molecules, water-soluble vitamins
		YMC-Triart Diol (SFC/NP)	organic/inorganic hybrid silica, general purpose HILIC phase	L20	1.9, 3, 5	12	2.0–10.0	SFC, small organic molecules
		YMC-Triart PFP	organic/inorganic hybrid silica, PFP-propyl ligand, steric recognition	L43	1.9, 3, 5	12	1.0–8.0	SFC, aromatic stereoisomers, halogenated and polar compounds
		YMC-Triart SIL	organic/inorganic hybrid silica, general purpose NP/SFC phase	L3	3, 5	12	2.0–8.0	SFC, small organic molecules
		YMC-Triart C18	organic/inorganic hybrid silica, most versatile phase	L1	1.9, 3, 5	12	1.0–12.0	SFC, acidic/neutral/basic compounds, medium polar compounds
Chiral	Polysaccharides	CHIRAL ART Amylose-C	coated derivative [alternative to CHIRALPAK® AD-H, AD-3]	L51	3, 5	proprietary	—	NP and SFC mode chiral screening and separation
		CHIRAL ART Amylose-C Neo	extended resolution and loadability, coated [alternative to CHIRALPAK® AD-H,AD-3]	L51	3,5	proprietary	—	NP and SFC mode chiral screening and separation
		CHIRAL ART Cellulose-C	coated derivative [alternative to CHIRALCEL® OD-H, OD-3]	L40	3, 5	proprietary	—	NP and SFC mode chiral screening and separation
		CHIRAL ART Amylose-SA	immobilised derivative [alternative to CHIRALPAK® IA, IA-3]	L99	3, 5	proprietary	2.0–9.0	NP, SFC and RP mode chiral screening and separation
		CHIRAL ART Cellulose-SB	immobilised derivative [alternative to CHIRALPAK® IB, IB-3]	—	3, 5	proprietary	2.0–9.0	NP, SFC and RP mode chiral screening and separation
		CHIRAL ART Cellulose-SC	immobilised derivative [alternative to CHIRALPAK® IC, IC-3]	—	3, 5	proprietary	2.0–9.0	NP, SFC and RP mode chiral screening and separation
		CHIRAL ART Cellulose-SJ	immobilised derivative [alternative to CHIRALPAK® IJ, IJ-3; coated CHIRALCEL® OJ-H, OJ-3]	—	3, 5	proprietary	2.0–9.0	NP, SFC and RP mode chiral screening and separation
		CHIRAL ART Cellulose-SZ	immobilised derivative [alternative to coated CHIRALCEL® OZ-H, OZ-3]	—	3, 5	proprietary	2.0–9.0	NP, SFC and RP mode chiral screening and separation
		YMC CHIRAL NEA (R)(S)	polymeric 1-naphthylethylamine	—	5	30	2.0–6.5	nonpolar to medium polar optical isomers for NP, RP mode
		YMC CHIRAL CD BR	α-, β-, γ-bromo-cyclodextrin	—	5	12	3.5–6.5	optical and positional isomers in RP mode

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pH high pH stability immobilised polysaccharide

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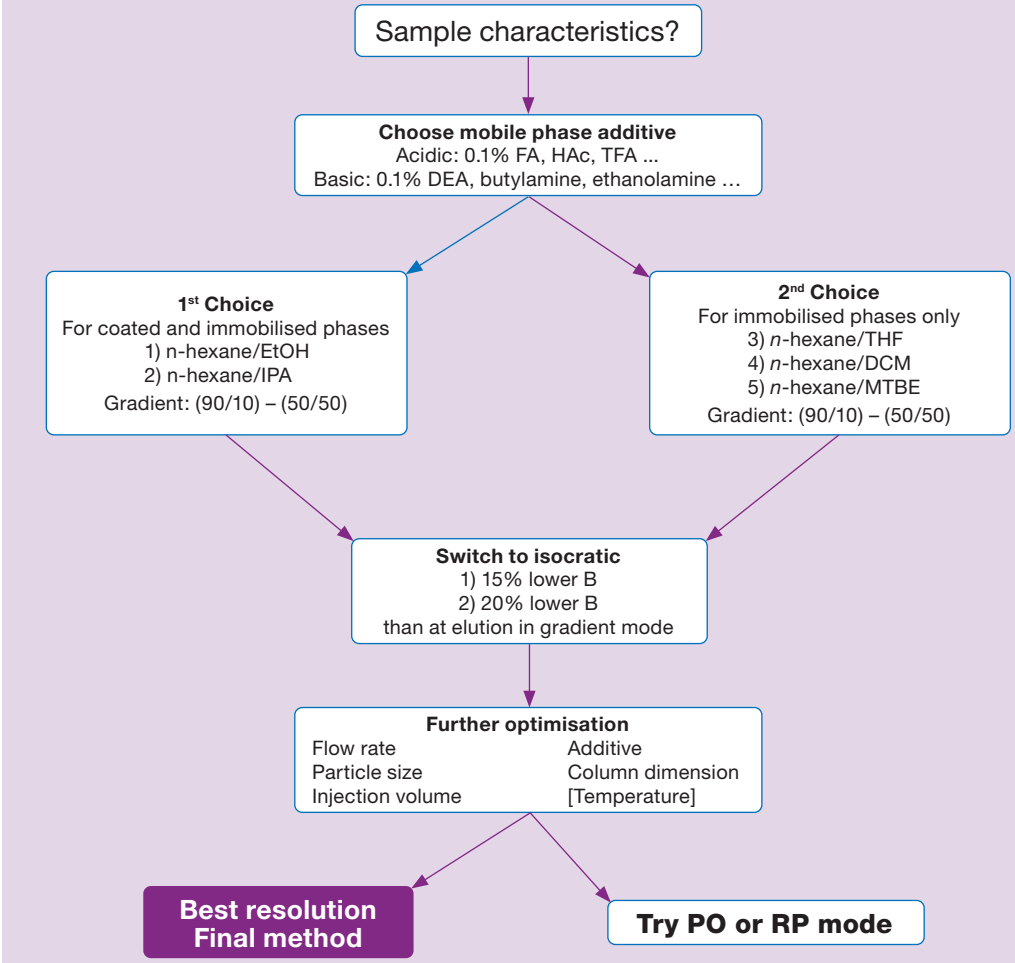
Expert Tips for robust and reproducible HILIC Method Development

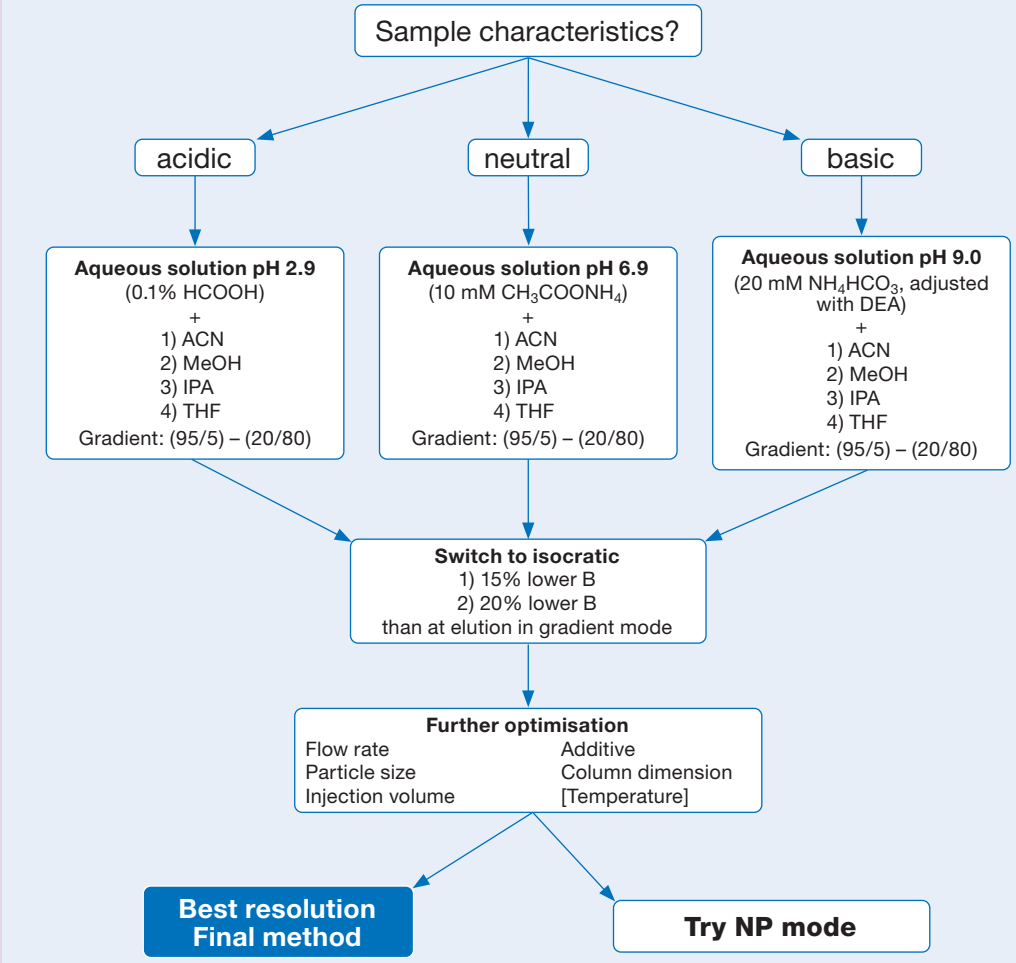
- Dissolve your sample in mobile phase. For gradient methods use the composition of your starting eluent.
- Your mobile phase should at least contain 3 % and at maximum 40 % water.
- We suggest buffer concentrations up to 10 mM and to buffer both mobile phases.
- Recommended buffers are ammonium salts of acetic or formic acids, bicarbonate salts or triethylamine phosphate for high solubility in organic solvents.
- Use aprotic solvents like THF, acetone or acetonitrile as weak eluent. Use of protic solvents like alcohols generally decrease retention.
- Stationary phase selectivities are very different in HILIC analysis. Screening different phases may find you a more optimal fit for your analytes.
- Give your HILIC phase enough time for equilibration. We recommend at least 20 column volumes prior to analysing your samples and/or post-gradient.

Chiral Method Screening Strategy

NP Screening Strategy



RP Screening Strategy For immobilised stationary phases only



Abbreviations used:
FA (formic acid); HAc (acetic acid); TFA (trifluoroacetic acid); DEA (diethylamine); EtOH (ethanol); IPA (2-propanol); THF (tetrahydrofuran); DCM (dichloromethane); MTBE (methyl tert-butyl ether); ACN (acetonitrile); MeOH (methanol)

Chiral / Achiral_overview analytical 03/2020