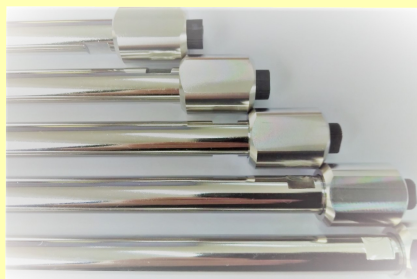


Solubility	Molecular Weight Range [Da]	Chromatography Mechanism	Temperature / pH Stability	Analyte, Examples	Typical Solvent / Eluent	AppliChrom Column	Comments, Examples in more detail.
Aqueous - hydrophilic	60 ~ 2500Da	Reversed Phase	10-90°C pH 1-14	Vitamins, Peptides	H ₂ O/ACN or MeOH	AppliChrom RPeptide	1 % TFA, 1 % NaOH, long-term stable at higher temperatures, wide pH range can be used - ideal for peptide analysis/purification, LC-MS
			10-40°C pH 2-8	Polar, medium polar and hydrophobic small molecules	H ₂ O/ACN or MeOH	AppliChrom OTU LipoMare C18	High performance universal use high purity medium polar C18 column. Eluent : 100 % water up to 100 % organics
			10-40°C pH 1,5-9	Medium polar and hydrophobic small molecules	H ₂ O/ACN or MeOH	AppliChrom OTU TriKala C18	High performance high purity hydrophobic C ₁₈ column for medium polar to hydrophobic analytes
		Ligand Exchange	10-90°C	Mono-disaccharides, oligosaccharides, sugar alcohols, alcohols	H ₂ O	AppliChrom SugarSep-Ca AppliChrom SugarSep-Pb AppliChrom SugarSep-Ag	Orthogonal selectivity for saccharide analysis against AppliChrom OTU Amino. Eluent pure water works perfectly. Largest database with selectivities at www.sugar-hplc.com
		HILIC	10-40°C	Mono-, disaccharides, oligosaccharides	ACN/H ₂ O // 70/30	AppliChrom OTU Amino	Orthogonal selectivity for saccharides compared to the AppliChrom SugarSep series. Good selectivity and exceptionally long service life even in high-throughput applications.
		Ion Exclusion	10-90°C pH 1-7	Saccharides, sugar alcohols, alcohols, acids	H ₂ O, 0,1 % H ₂ SO ₄	AppliChrom SugarSep-H I / II / III / IV / V	Simultaneous analysis of sugars and organic acids. High sensitivity even in combination with RI-detection.
				Ascorbic acid in complex matrice	H ₂ O, special buffer	AppliChrom VitaC	Easy and accurate determination of ascorbic acid / vitamin C even in complex matrix
				Taurine in drinks	H ₂ O, special buffer	AppliChrom ASA Energy	Easy and accurate determination of taurine, sugars and more in energy drinks

Solubility	Molecular Weight Range [Da]	Chromatography Mechanism	Temperature / pH Stability	Analyte, Examples	Typical Solvent / Eluent	AppliChrom Column	Comments, Examples in more detail.
Aqueous - hydrophilic	> 2500	SEC	10-90°C pH 2-11	Aqueous soluble neutral or anionic polymers, technical and biopolymers. Oligomers up to 40Mio Da	H ₂ O, buffers, organic additives	AppliChrom SuperOH-P	Your workhorse for most water soluble, technical and biopolymers. Large database, very powerful tool for neutral and anionic charged polymers
			10-90°C pH 2-11	Water soluble proteins, humic substances. Oligomers up to 40Mio Da	H ₂ O, buffers	AppliChrom VivoSep	Designed for simple, accurate and easy-to-use SEC analysis of a wide range of aqueous soluble proteins and humic substances. Pressure-stable material, short analysis times, high separation performance, buffers analogous to dextrans can be used, no degenerating surfactants required for protein analysis.
			10-90°C pH 2-11	Oligomers up to 40Mio Da	H ₂ O, buffers	AppliChrom CatPhil-P	Enables accurate pure SEC analysis of polycations, polyamines and polyelectrolytes even at low salt concentrations. Up to 40 million Da also for block copolymers containing a polycation on one side and a polyanion on the other - a unique feature. Calibration with neutral PEG/PEO, pullulan/dextran. Compatible for light scattering. Examples: Water soluble analytes with focus on polyelectrolytes, polycations including polycation-block-co-polyanions, poly-DADMAc, polyquat/polyquaternium, chitosan...

Solubility	Molecular Weigh Range [Da]	Chromatography Mechanism	Temperature / pH Stability	Analyte, Examples	Typical Solvent / Eluent	AppliChrom Column	Comments, Examples in more detail.
Organic - hydrophobic	60 ~ 2500Da	Reversed Phase	10-90°C pH 1-14	Vitamins, Peptides	H ₂ O/ACN or MeOH	AppliChrom RPeptide	1 % TFA, 1 % NaOH, long-term stable at higher temperatures, wide pH range can be used - ideal for peptide analysis/purification, LC-MS
			10-40°C pH 2-8	Polar, medium polar and hydrophobic small molecules	H ₂ O/ACN or MeOH	AppliChrom OTU LipoMare C18	High performance universal use high purity medium polar C18 column. Eluent : 100 % water up to 100 % organics
			10-40°C pH 1,5-9	Medium polar and hydrophobic small molecules	H ₂ O/ACN or MeOH	AppliChrom OTU TriKala C18	High performance high purity hydrophobic C ₁₈ column for medium polar to hydrophobic analytes
	> 2500Da	GPC	10-145°C	Hydrophobic oligo- and polymer oligomers up to 40Mio Da	THF, Toluene, CHCl ₃ , dichlorobenzene, hexane/ethyl-acetate 10/90	AppliChrom StyDiViBe-P	High-performance and high-purity GPC columns for most standard applications with high resolution; PVC, polymethyl methacrylate - PMMA, epoxy resins, polystyrene - PS, bitumen, polyethylene - PE, polypropylene - PP, polyester, polylactide - PLA, bisphenol A resin, enrichment of impurities from fats/vegetable oils for subsequent HPLC or GC analysis - enrichment by automated GPC sample pretreatment, olive oil and fat analysis, analysis of degradation products from hydrophobic polymers and resins. Calibration against polystyrene. PMMA or polyethylene oxides also possible
			40-90°C (145°C)	Polar, non-water-soluble oligo/polymers. Oligomers up to 40Mio Da	DMSO 0,075M NaNO ₃	AppliChrom DMSO-Phil-P	Perfect tool for simple and accurate GPC analysis of many weakly and strongly polarised analytes. Advantages include tolerance to water traces in the eluent. Calibration: Dextran or Pullulan. Analytes: Starch, amylose, amylopectin, starchy protein fraction from plants/legumes (pea, bean, ...), (melamine)-urea-formaldehyde resins, (M)UF/UF resins, lignin, humic substances, humic acid, coniferous wood bark extracts, polysaccharides...

Solubility	Molecular WeighRange [Da]	Chromatography Mechanism	Temperature / pH Stability	Analyte, Examples	Typical Solvent / Eluent	AppliChrom Column	Comments, Examples in more detail.
Organic - hydrophobic	> 2500Da	GPC	35-50°C	Crystalline high performance polymers. Oligomers up to 40Mio Da	HFIP (0,1 % KTFa)	AppliChrom HFIP-P series	Precise GPC analysis of high-performance plastics, including crystalline polymers, for use in HFIP. The AppliChrom broad pore technology (BPT) tool enables the most precise measurements and calibration of molecular mass in the range of 100-1mio Da while avoiding the classic effects of the inflection points
			20-50°C	Hydrophobic oligo- and polymers. Oligomers up to 40Mio Da	DMAc, DMF, NMP (typical addition of LiBr)	AppliChrom DMAc-Phil-P series	For your precise GPC analysis of slightly polar polymers. Optimized for the medium polar eluents DMF, NMP and DMAc. Calibration: PMMA, polyacrylonitrile, ABS rubber (acrylonitrile-butadiene-styrene), carboxymethylcellulose, cellulose, butadiene-acrylonitrile, polyacetal /POM/polyoxymethylene, polyamide, polyethersulfone, some lignin methods...
			40-50°C	Polyphenoles / antioxidants, secondary plant products, organosolv lignin. Oligomers up to 40Mio Da	Acetone / water	AppliChromAceton-Aq-Phil-P	Unique instrument for analysing antioxidants, lignin and oligophenols by GPC-MS or Prep-GPC fractionation. High loading capacity. Calibration: PEG/PEO in water



Polymeric SEC / GPC / HPLC Columns and Bulk Material

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