



# Experience Consistent Quality with **KNAUER** *originals* HPLC Consumables and Supplies

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Newest Range of Chromatography  
Consumables and Supplies for Your Lab



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# Precision in Preparation: the key to enhanced HPLC analysis

Save time and money by optimizing the HPLC/UHPLC analysis with straightforward sample and solvent preparation.

KNAUER Sepapure® Syringe and Membrane Disc Filters ensure that samples and solvents are particle-free to protect the column and HPLC components and avoid downtime.

KNAUER *originals* vials and caps protect your sample, avoiding degradation or solvent evaporation and improving injection reproducibility.

KNAUER BlueOrchid Pipettes allow for effortless and precise pipetting, ensuring ease in every sample transfer and delivering accurate results.



# Sample and Mobile Phase Preparation

Follow this guide for best practice.

The simple steps below are the best preventive procedures to protect your HPLC system and column for worry-free non-stop analyses.

- 01 Sample Filtration:** Make sure the sample is clean and particle-free with Sepapure® Syringe Filters to avoid clogging the HPLC injection flow path or irreversibly damage the column.
- 02 Mobile Phase Purity:** Utilize Sepapure® Membrane Filters and glass filtration systems to remove particles, extend the HPLC instrument's lifetime, and preserve the system's integrity for reproducible results.
- 03 Sample Transfer:** Ensure accurate and contamination-free sample and reagent handling with BlueOrchid Pipettes and Tips for reliable results.
- 04 Vial Type:** Store and protect your sample with KNAUER *originals* glass vials; amber vials for light-sensitive samples, or clear glass to conveniently see your samples. Optimize the analysis of low-amount samples and ensure to inject until the last drop with micro inserts.
- 05 Vial Closure:** Select vial caps and septa based on sample volatility and number of injections per vial.

KNAUER *originals* chromatography consumables and supplies offer the best tools to integrate the sample and mobile phase preparation in your chromatography workflow.



Sample

AZURA® (U)HPLC System

Mobile Phase



# Filter Selection Guide

Filtration of samples and solvents is the best preventive maintenance procedure to extend the lifetime of your HPLC/UHPLC system and increase analysis reproducibility.

KNAUER Sepapure® Syringe and Membrane Disc Filters remove particles and microorganisms from samples as well as from the mobile phase prior to entering the HPLC/UHPLC system. Available in a range of membrane types, pore sizes and dimensions to meet your application requirements.

**01 Filter Diameter:** Select the filter diameter depending on the volume of eluent you want to filter.

10 mL	50 mL	100 mL	> 100 mL
13 mm	25 mm	30 mm	47 mm

**02 Filter Pore Size:** Select the membrane pore size based on the particle size of the stationary phase and on your instrumentation, HPLC or UHPLC.

Particle Size	Application	Pore Size of Filter
< 3 µm	UHPLC & MS	0.22 µm
> 3 µm	Routine analyses	0.45 µm

**03 Membrane Material:** Select the membrane material based on the solvent type and the application.

Define Solvent		Aqueous Solutions	Aqueous and Organic Solutions	Organic Solutions	
Define Application		Sensitive biological samples, buffers, protein analysis, pH 4-8	Tissue culture, proteins, and nucleic acids filtration, ion chromatography, pH 1-14, high-temperature liquids	General purpose laboratory filtration for most HPLC samples and solvents, pH 3-12	Versatile for aqueous and aggressive organic solvent-based solutions, alkali filtration, pH 1-14
Select Filter		CA - Cellulose Acetate	PES - Polyethersulfone	Nylon	hPTFE - hydrophilic Polytetrafluoroethylene
					PTFE - Polytetrafluoroethylene



Solvent	CA	PES	Nylon	hPTFE	PTFE
Water	+	+	+	+	-
Acetonitrile	-	+	+	+	+
Methanol, 98%	-	+	+	+	+
Ethanol, 98%	+	+	+	+	+
Isopropanol	+	+	+	+	+
THF	-	-	+	+	+
DMSO	-	-	+	+	+
Chloroform	-	-	+	+	+

+ compatible; - Incompatible (not recommended) For further information visit: [store.knauer.net](http://store.knauer.net)

**04 Filter Unit:** Opt for glass filter units for mobile phase filtration or reusable syringe filter holder as an eco-conscious syringe filter alternative.



Reusable syringe filter holder



Glass vacuum filter unit



# Laboratory Filtration

## Sepapure® Syringe Filters

Streamline your workflow with Sepapure® Syringe Filters: intuitively color-coded for quick selection, ensuring optimal throughput and minimal sample loss. Achieve unmatched precision and purity in every filtration.

- **Color-coded and labeled:** Easy identification of membrane and filter type. Each unit is clearly marked with an identifying code to denote pore size and membrane material
- **Bonded outer ring on housing:** Durability under higher working pressures (> 87 psi or 6 bar)
- **Built-in prefilter:** Polypropylen prefilter
- **Specifically designed to maximize sample recovery:** Minimal sample hold-up volume
- **Broad compatibility:** Many types of applications and membranes

Sample volume	Diameter [mm]	Pore size [µm]	Membrane material	Housing material	Solvent compatibility	Units per package	Article number
< 10 mL	13	0.22	Nylon	Polypropylen	aqueous and organic	500	A09000
< 10 mL	13	0.45	Nylon	Polypropylen	aqueous and organic	500	A09001
< 50 mL	25	0.22	Nylon	Polypropylen	aqueous and organic	100	A09002
< 50 mL	25	0.45	Nylon	Polypropylen	aqueous and organic	100	A09003
< 50 mL	25	0.45	hPTFE	Polypropylen	aqueous and organic	100	A09013
< 50 mL	25	0.45	CA	Polypropylen	aqueous	100	A09033
< 50 mL	25	0.45	PTFE	Polypropylen	organic	100	A09043
< 100 mL	30	0.22	Nylon	Polypropylen	aqueous and organic	100	A09004
< 100 mL	30	0.45	Nylon	Polypropylen	aqueous and organic	100	A09005

## Sepapure® Membrane Disc Filters

Enhance your filtration process with Sepapure® Membrane Disc Filters, which offer a variety of materials for efficient separation and clear results. Perfect for complex tasks, ensuring purity and reliability.



Diameter [mm]	Pore size [µm]	Membrane material	Solvent compatibility	Units per package	Article number
13	0.22	Nylon	aqueous and organic	100	A09100
13	0.45	Nylon	aqueous and organic	100	A09101
25	0.22	Nylon	aqueous and organic	100	A09102
25	0.45	Nylon	aqueous and organic	100	A09103
25	0.22	hPTFE	aqueous and organic	100	A09112
25	0.45	hPTFE	aqueous and organic	100	A09113
25	0.22	CA	aqueous	100	A09132
25	0.45	CA	aqueous	100	A09133
25	0.22	PTFE	organic	100	A09142
25	0.45	PTFE	organic	100	A09143
25	0.22	PES	aqueous	100	A09152
25	0.45	PES	aqueous	100	A09153
47	0.22	Nylon	aqueous and organic	100	A09104
47	0.45	Nylon	aqueous and organic	100	A09105



## Filter Units and Syringes

Upgrade your filtration efficiency with our top-tier glass filter units and reusable filter holders for membrane disc filters, plus luer-lock syringes for syringe filters. Durable, eco-conscious choice.

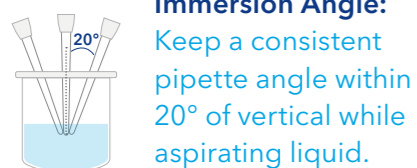
Filter Unit or Syringe Type	Product	Article number
Glass Vacuum Filter Unit	Set, 1 000 mL, Ground Glass Joint	A09200
	Set, 2 000 mL, Ground Glass Joint	A09201
	Collection Flask, 1000 mL, Ground Glass Joint	A09202
	Collection Flask, 2000 mL, Ground Glass Joint	A09203
	Set, 1 000 mL, Rubber Joint	A09210
	Set, 2 000 mL, Rubber Joint	A09211
	Collection Flask, 1 000 mL, Rubber Joint	A09212
Reuseable Syringe Filter Holder	Collection Flask, 2 000 mL, Rubber Joint	A09213
	Polypropylen, 13 mm	A09220
	Polypropylen, 25 mm	A09221
Syringe	Polypropylen, 47 mm	A09222
	B.Braun Injekt® Luer Lock 2 mL Syringes	A09090
	B.Braun Injekt® Luer Lock 5 mL Syringes	A09091
	B.Braun Injekt® Luer Lock 10 mL Syringes	A09092
	B.Braun Injekt® Luer Lock 20 mL Syringes	A09093



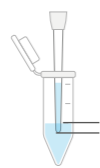
# Pipetting - Best Practice Guide

Correct pipetting techniques are essential for accurate, precise results and thus reproducible, reliable HPLC measurements. Follow these best practices when using BlueOrchid Pipettes.

## 01 Pipetting Technique

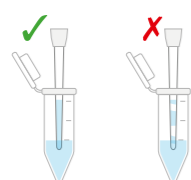


**Immersion Angle:** Keep a consistent pipette angle within 20° of vertical while aspirating liquid.

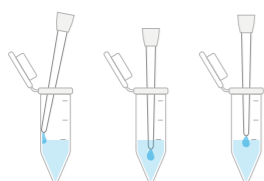


**Immersion Depth:** Immerse the tip in the sample to the recommended depth based on the pipette volume. Too deep may draw excess liquid, while too shallow may cause air bubbles.

Volume	Immersion Depth
0.1 - 1 µL	1 mm
1 - 100 µL	2 - 3 mm
100 - 1 000 µL	2 - 4 mm
1 - 10 mL	3 - 5 mm

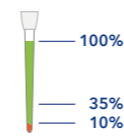


**Rhythm and Speed:** Use consistent plunger pressure and pace. Press and release smoothly, pausing one second before tip removal from the liquid. Avoid fast or jerky motions to prevent sample loss, bubbles, or contamination.

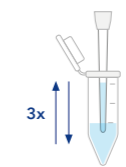


**Dispense:** Touch the tip to the vessel wall and slide up to release all liquid. Keep thumb on the plunger stop when removing the pipette to avoid re-aspiration. For aqueous, non-viscous liquids, you may also dispense directly into or onto the liquid.

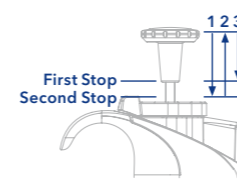
## 02 Pipetting Performance



**Volume Range:** Use air displacement pipettes between 35-100% of their nominal volume. Avoid volumes below 10%.



**Pre-Wet:** Aspirate and dispense the sample three times at nominal volume before transferring. This equalizes temperature and humidifies the air space, improving accuracy and reducing evaporation-related volume loss.



**Viscous and Volatile Liquids:** Use reverse pipetting for both. For viscous samples, go slow to minimize liquid clinging to the tip. For volatile samples, pre-wet the tip and pipette quickly to reduce evaporation effects.

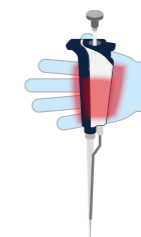


**Recalibration:** Recalibrate the pipette when using liquids with densities significantly different from water. Factory calibration uses water at room temperature, so other densities may cause inaccuracy.

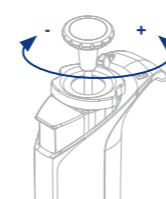
## 03 Environmental Influences



**Temperature:** Let pipette, tips, and liquids reach ambient temperature before use. Temperature fluctuations affect the air cushion, impacting accuracy and precision.



**Pipette Handling:** Set the pipette down between pipetting cycles to avoid heat-induced air expansion and inaccurate results. Never leave it flat with liquid in the tip, as this can cause internal damage.



**Setting the Volume:** When lowering, set directly. When increasing, go about 1/3 above target, then slowly return to desired volume.



**Change the Tip:** Replace the tip when switching liquids or if droplets remain to prevent carry-over, and cross-contamination, ensuring reliable data.



**Calibrate and Clean:** Calibrate the pipette yearly to maintain accuracy. Clean external surfaces regularly with isopropanol and a soft cloth.



**Ergonomics:** Maintain a healthy posture while pipetting to reduce fatigue and strain.



# Pipetting Solutions

## BlueOrchid Manual Single Channel Pipettes

Complement your HPLC workflow with BlueOrchid Pipettes, offering optimal performance and comfort. Available in various volume ranges, lightweight and remarkably low pipetting forces for fatigue-free use, ensuring truly effortless pipetting.

- **Ergonomic:** Balanced design with silicone-based shock absorption mechanism for smooth tip ejection
- **Minimal pipetting force:** Innovative spring-seal system and magnet-assisted piston reduce strain
- **Variety of sizes:** Single-channel models from 0.1 µL to 10 mL
- **Color-coded:** Easy pipette identification
- **Reliable performance:** ISO 8655-6 calibrated for accuracy and precision
- **Durable and autoclavable:** UV- and chemically resistant materials. No recalibration needed after sterilization
- **User-friendly:** One-handed volume lock operation and large 4-digit display
- **Broad compatibility:** Optimized for KNAUER pipette tips, but also fits many other brands

### Delivery package

- 1 pc. Manual pipette
- 1 pc. Calibration tool
- 1 pc. Conformity and calibration certificate
- 1 pc. Warranty card
- 1 pc. Instruction manual
- 1 pc. Shelf-mounting stand
- 1 pc. Silicone gease



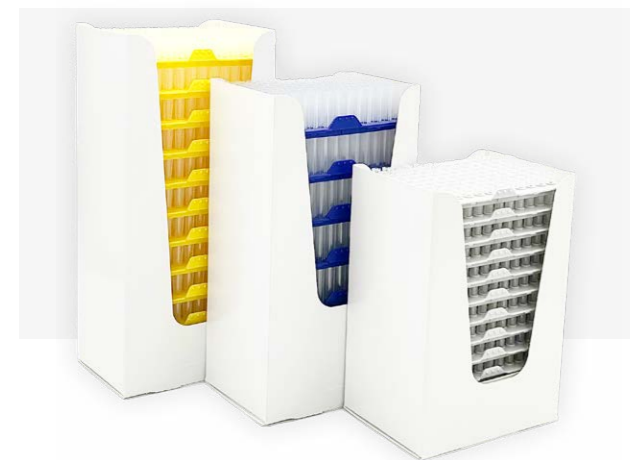
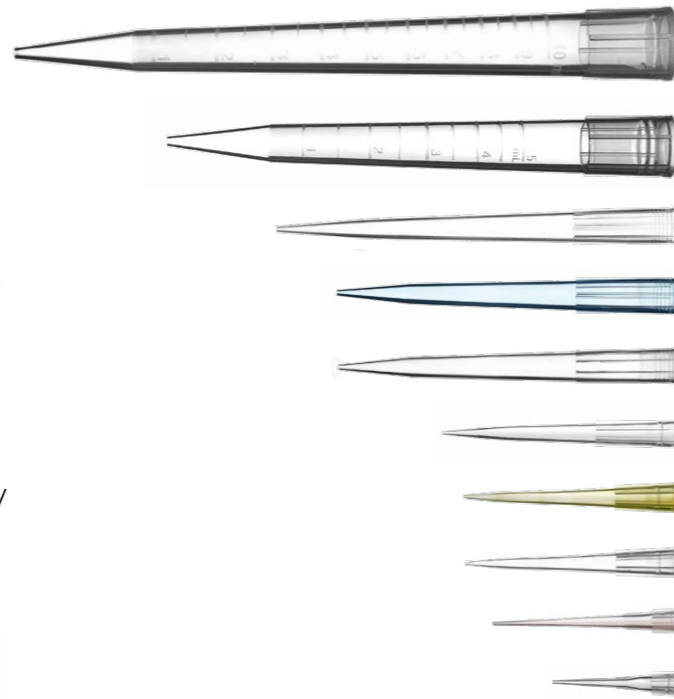
Volume range [µL]	Increment [µL]	Color code	Channels	Test volume [µL]	Inaccuracy <sup>1)</sup> [± %]	Imprecision <sup>2)</sup> [± %]	Article number
0.1 - 2.5	0.002	●	1	0.25	12.00	6.00	A09500
				1.25	2.50	2.50	
				2.5	2.50	0.70	
0.5 - 10	0.02	●	1	1	2.50	1.50	A09501
				5	1.50	0.80	
				10	1.00	0.40	
2 - 20	0.02	●	1	2	3.00	1.50	A09502
				10	1.20	0.60	
				20	0.90	0.30	
5 - 50	0.10	●	1	5	2.00	2.00	A09503
				25	0.80	0.40	
				50	0.60	0.30	
10 - 100	0.10	●	1	10	3.00	1.00	A09504
				50	1.00	0.30	
				100	0.80	0.20	
20 - 200	0.20	●	1	20	2.50	0.70	A09505
				100	0.70	0.30	
				200	0.60	0.20	
100 - 1 000	1.00	●	1	100	3.00	0.60	A09506
				500	1.00	0.20	
				1 000	0.60	0.20	
500 - 5 000	10	●	1	500	1.60	0.40	A09507
				2 500	1.20	0.25	
				5 000	0.60	0.20	
1 000 - 10 000	20	●	1	1 000	3.00	0.60	A09508
				5 000	0.80	0.20	
				10 000	0.60	0.15	
150 (fixed)	n/a	●	1	150	0.60	0.20	A09509

<sup>1)</sup>Systematic error; <sup>2)</sup>Random error

## Pipette Tips

Optimize your pipetting process with our premium pipette tips. Made in Germany from medical-grade polypropylene and available in 8 sizes from 10 µL to 10 mL as bulk or reload units. Ensure sample integrity in every transfer.

- **Precision design:** Conical tip opening prevents droplet formation. Smooth internal surface minimizes sample loss
- **Optimal cone geometry:** Effortless loading / ejection, and secure fit
- **Graduation marks:** Quick volume checks
- **Contamination-free:** No detectable DNase, RNase, human DNA, pyrogens and PCR inhibitors

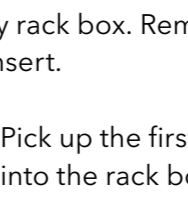
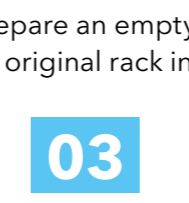
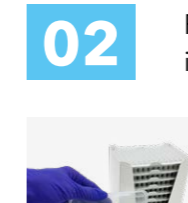


- **High-quality material:** Autoclavable, non-wettable, US FDA-approved, virgin polypropylene
- **Universal fit:** Compatible with common pipette brands
- **Flexible packaging:** Cost-effective bulk bags or time-saving, color-coded reload units for easy identification of tip and suitable pipette

Volume range [µL]	Tip color	Tip length [mm]	Sterile	Filter	Packaging	Units per package	Article number
0.1 - 10	Colorless	31.20	No	No	Bulk bag	1 000 tips	A09510
0.1 - 20	Colorless	45.80	No	No	Bulk bag	1 000 tips	A09511
1 - 200	Colorless	53.40	No	No	Bulk bag	1 000 tips	A09512
1 - 200	Yellow	53.40	No	No	Bulk bag	1 000 tips	A09513
1 - 300	Colorless	59.35	No	No	Bulk bag	1 000 tips	A09514
100 - 1 000	Colorless	84.30	No	No	Bulk bag	500 tips	A09515
100 - 1 000	Blue	84.30	No	No	Bulk bag	500 tips	A09516
100 - 1 250	Colorless	97.60	No	No	Bulk bag	500 tips	A09517
1 000 - 5 000	Colorless	124.00	No	No	Bulk bag	250 tips	A09518
1 000 - 10 000	Colorless	161.00	No	No	Bulk bag	200 tips	A09519
0.1 - 10	Colorless	31.20	No	No	Reload	10 x 96 tips	A09520
0.1 - 20	Colorless	45.80	No	No	Reload	10 x 96 tips	A09521
1 - 200	Colorless	53.40	No	No	Reload	10 x 96 tips	A09522
100 - 1 000	Colorless	84.30	No	No	Reload	5 x 96 tips	A09523

## Reload System User Guide

- 01** Open the reload tower by sliding the cover towards the top.
- 02** Prepare an empty rack box. Remove its original rack insert.
- 03** Pick up the first grid of reload tips and insert it into the rack box. Rack boxes can be reused.
- 04** Once the tips are properly installed in the rack box, you may close the hinged lid.



## Rack Boxes

Securely store our pipette tips in the matching, stackable tip boxes made from 100% recycled plastic. Autoclavable, easy to open and close, and with color-coded rack inserts for quick volume identification.



Product	Color code	Units per package	Article number
Empty Rack Boxes for 10 µL/10 µL XL Pipette Tips	●	10	A09524
Empty Rack Boxes for 200 µL/300 µL Pipette Tips	●	10	A09525
Empty Rack Boxes for 1 000 µL Pipette Tips	●	8	A09526
Empty Rack Boxes for 1 250 µL Pipette Tips	●	8	A09527

## Compatibility Chart

Tip type	Article number		KNAUER BlueOrchid Single Channel Pipette											
			0.1 - 2.5 µL	0.5 - 10 µL	2 - 20 µL	5 - 50 µL	10 - 100 µL	20 - 200 µL	100 - 1 000 µL	500 - 5 000 µL	1 000 - 10 000 µL	150 µL		
10 µL, clear	A09510	A09520	✓	✓										
10/20 µL XL, clear	A09511	A09521	✓	✓	✓									
200µL, clear	A09512	A09522				✓	✓	✓						✓
200 µL, yellow	A09513	-				✓	✓	✓						✓
300 µL, clear	A09514	-				✓	✓	✓						✓
1 000 µL, clear	A09515	A09523								✓				
1 000 µL, blue	A09516	-								✓				
1 250 µL XL, clear	A09517	-								✓				
5 mL, clear	A09518	-										✓		
10 mL, clear	A09519	-												✓



# Sample Vials - User Guide

Selecting the right sample vials is essential for accurate HPLC/UHPLC analyses. KNAUER *originals* vials, designed to prevent contamination and evaporation, offer customizable options to meet your needs.

Choose from different glass colors, closure types, and pre-slit septa in caps, with the option for micro-inserts. Our selection guide helps you find the ideal vial configuration, enhancing your chromatography results.

## 01 Glass Color



**Clear Glass:** Ideal for the majority of compounds, providing maximum visibility to monitor the sample's condition. Choose clear glass for routine applications where light sensitivity is not a concern.



**Amber Glass:** Provides protection against UV light for light-sensitive substances, such as vitamins, steroids, and other pharmaceuticals. Select amber glass to prolong the shelf life of light-sensitive samples.

## 02 Closure Type



**Screw Neck:** Offers a secure sealing option, ideal for volatile samples and long-term storage. Screw caps provide excellent resealability and are suitable for repetitive access.

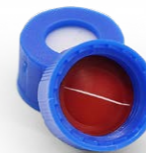


**Crimp Neck:** Provides the tightest seal, recommended for highly volatile samples and when sample integrity is critical. This option is best for single-time use or long-term storage.



**Snap Ring:** Allows for easy manual application and removal without special tools. Opt for snap rings for short-term storage and frequent sample retrieval.

## 03 Septum Type



**Pre-slit Septum:** Designed to prevent vacuum formation inside the vial, facilitating easier needle penetration and reducing the risk of septum coring. Ideal for automated sampling to ensure consistent sample integrity.



**Non-slit Septum:** Offers a tighter seal, suitable for storage and applications where minimizing evaporation is crucial. Best for manual sampling where precise control over needle penetration is needed.

## 04 (Optional) Small Volumes: $\mu$ -Inserts



**Micro Inserts:** Enable small volume sampling, reducing the required sample quantity and minimizing waste. Essential for valuable or scarce samples, allowing for maximum recovery.



## Sample Vials

Enhance lab precision with our LC sample vials, offering accuracy and seamless system integration. With exceptional chemical resistance and leak-proof caps, they're available in various materials and closure types - screw neck, crimp neck, snap ring, pre-slit or not - to meet specific needs, ensuring sample integrity and lab efficiency.

### Vials

Explore our sample vials, available in amber or clear glass, with versatile closure options: screw neck, crimp neck, and snap ring for secure sealing.



Glass material	Closure type	Nominal Diameter*	Volume [mL]	Units per package	Article number
Clear	Screw Neck	ND 9	1.5	100	A09302
Clear	Crimp Neck	ND 11	1.5	100	A09322
Clear	Snap Ring	ND 11	1.5	100	A09342
Amber	Screw Neck	ND 9	1.5	100	A09300
Amber	Crimp Neck	ND 11	1.5	100	A09320
Amber	Snap Ring	ND 11	1.5	100	A09340

\*Nominal Diameter (ND) is the outer diameter of the vial in mm.

### Caps

Choose our versatile caps for sample vials, available for screw neck, crimp neck, and snap ring closures, with options for pre-slit or solid designs for optimal sealing.



Closure type	Septum	Pre-slit	Cap material	Units per package	Article number
Screw Neck	PTFE/Silicone	No	Blue Polypropylen	100	A09304
Screw Neck	PTFE/Silicone	Yes	Blue Polypropylen	100	A09305
Crimp Neck	PTFE/Silicone	No	Aluminum	100	A09324
Crimp Neck	PTFE/Silicone	Yes	Aluminum	100	A09325
Snap Ring	PTFE/Silicone	No	Clear Polypropylen	100	A09344
Snap Ring	PTFE/Silicone	Yes	Clear Polypropylen	100	A09345



### μ-Inserts

Maximize small sample analysis with our micro inserts. Designed for minimal volume loss, ensuring precision and efficiency in your lab's testing and research needs.

Volume [μL]	Bottom	Units per package	Article number
250	Conic with plastic spring	100	A09360
300	Conic	100	A09361
400	Flat	100	A09362

### Accessories

Maximize lab efficiency: Premium crimping pliers ensure secure, leak-proof vial sealing for sample integrity in critical applications. Trust in precision and durability.



Product	Units per package	Article number
Manual Crimper Pliers	1	A09339



### Consumables Starter Kits

Our Starter Kits include all consumables you need to start your first analyses on your new AZURA® LC system: Sepapure® filters, KNAUER originals vials & caps, and relevant accessories.

Starter Kit for	Includes	Article number
HPLC	4 x 100 pcs sample vials & caps (different glass colors & closures); 100 pcs nylon syringe filter (0.45 μm, 25 mm); 100 pcs luer lock syringes (5 mL)	A09400
UHPLC	4 x 100 pcs sample vials & caps (different glass colors & closures); 100 pcs nylon syringe filter (0.22 μm, 25 mm); 100 pcs luer lock syringes (5 mL)	A09401
FPLC	100 pcs CA syringe filter (0.45 μm, 25 mm); 100 pcs nylon membrane filter (0.22 μm, 47 mm), glass vacuum filter unit (2L); 100 pcs luer lock syringes (10 mL); inline filter PEEK with Ti frits (2 μm, 10 μm)	A09402

# KNAUER LC Columns

Discover high-performance separations in every run with KNAUER's LC columns. Designed for reproducibility and robustness, they offer a wide range of stationary phases and dimensions to suit any application across analytical, preparative, and process scales.

## Sepapure® oliGO

Optimized for oligonucleotide IP-RP chromatography, featuring low back pressure, long durability and direct method transfer from leading brands. A cost-effective solution for identification, quantification and quality control.



USP code	Length	Inner diameter	Particle size	Pore size	Max. pressure	pH range	Temperature limit
L1	10, 30, 50, 100, or 150 mm	2.1, 4.6, or 10 mm	3 µm	120 Å	413 bar / 6000 psi	1.5 - 10.0	60°C

## Sepapure® FPLC

High-quality columns for size-exclusion, affinity and ion-exchange chromatography. Offered as ready-to-use cartridges (1 mL / 5 mL) or bulk resin. Perfectly matched with AZURA® FPLC systems.



Column type	Resin	Capacity	Applications
Affinity	100 µm cross-linked agarose beads	Static binding capacity: Ni-NTA > 40 mg/mL; Protein A > 30 mg/mL human IgG; Protein G > 15 mg/mL human IgG	First step ("capture") of an FPLC purification procedure
Ion-Exchange	100 µm cross-linked agarose beads	Ion capacity: 0.08-0.16 mmol/mL	Intermediate step of an FPLC purification procedure
Desalting	20-50 µm dextran beads	5 kDa exclusion limit	Final step ("polishing") of an FPLC purification procedure, or in between for fast buffer exchange

## Eurospher II

Versatile columns for small-molecule analysis - from routine to complex applications. Based on ultra-pure spherical silica, delivering exceptional stability and selectivity. 14 modifications available for maximum flexibility.



	Modification	USP code	Applications
Nonpolar phases: RP	C18P	L1	Food additives, steroids, sedatives
	C18H	L1	Phenols, polyphenols
	C18	L1	Sulphonamides, antibiotics, anti-psychotics, beta blocker, steroids, sudan dyes, phenols, preservatives
	C18A	L1	Water-soluble vitamins, catecholamines, organic acids, proteins, peptides
	DNPH	L1	DNPH-derivates of aldehydes and ketones
	Phenyl	L11	Polar aromatics, polycyclic aromatic hydrocarbons, fatty acids
	C8 / C8A	L7	Water-soluble vitamins, steroids, catecholamines, sedatives
Polar phases: NP & HILIC	C4	L26	Biomolecules
	NH <sub>2</sub>	L8	Carbohydrates, sweeteners, organic acids
	CN	L10	Steroids, carbohydrates, cyclic antidepressants
	HILIC	-	Organic acids and bases, water-soluble vitamins, nucleosides, oligonucleotides, amino acids, peptides
	Diol	L20	HILIC mode applications
	Si	L3	Normal Phase and HILIC applications

## Eurosil Bioselect

Wide-pore (300 Å) columns specifically designed for proteins, peptides, and oligonucleotides up to 100 kDa.

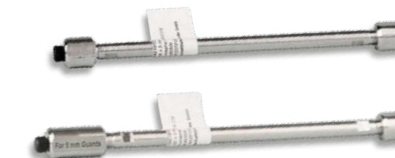
Ensuring high resolution, capacity, and recovery. Available in four surface modifications.



Molecular weight [Da]	Modification	USP code	Applications
2 000 - 5 000	C18	L1	Hydrophilic biomolecules, peptide mapping after enzymatic digestion
2 000 - 5 000	C18A	L1	Hydrophilic and polar biomolecules, very polar biomolecules separated with 100 % aqueous eluents
5 000 - 20 000	C8	L7	Hydrophilic biomolecules, peptide mapping after enzymatic digestion
20 000 - 100 000	C4	L26	Hydrophilic biomolecules, especially larger than 20 kDa

## Eurokat

Ion exclusion and ligand exchange columns for organic acids, carbohydrates, and alcohols. Based on a sulfonated cross-linked styrene-divinylbenzene copolymer. Available in 4 ionic forms, no organic solvents required. Perfect for food and beverage analysis.



Ionic form	USP code	Applications
H	L17	Organic acids, sugars, alcohols, sugar alcohols
Pb, Ca	L34 / L19	Small carbohydrates up to DP 4
Na	-	Carbohydrates up to DP 8

\* DP stands for Degree of Polymerization, which is a classification system based on the number of monosaccharide units linked together

Explore our full portfolio of columns for LC, GPC/SEC, and flash purification. Visit [knauer.net/columns](http://knauer.net/columns).

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