

Transition to bioZen

Ease Your Mind with the excellent recovery and consistent performance provided by bioZen Columns for **Charge Variant** and **Intact Analysis**



Peptide Mapping (RP)

Aggregate Analysis (SEC)

Charge Variant Analysis (IEX)

Glycan Analysis (HILIC)

Peptide Quantitation (RP)

Intact and Fragment Analysis (RP)

NEW Intact Mass (RP)

Drug Antibody Ratio (RP)

Glycan Sample Prep (SPE)

Immunocapture (MagBeads)

 **phenomenex**[®]
...breaking with traditionSM

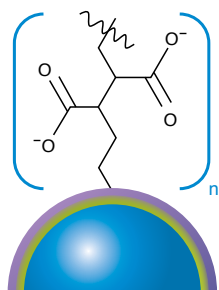


www.phenomenex.com/bioZen

Reliable Charge Variant Analysis

bioZen™ WCX was constructed with linear polycarboxylate chains grafted to monosized non-porous polymeric particles, to sinusously envelop and separate proteins from acidic and basic variants. With a highly tuned and controlled manufacturing process, bioZen WCX affords scientists a way to reproducibly characterize heterogeneity with an added advantage of excellent recovery using bioinert titanium column hardware.

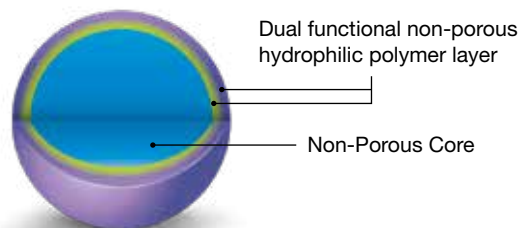
Give your MIND a break with this high quality particle chemistry designed and tested for biologics.



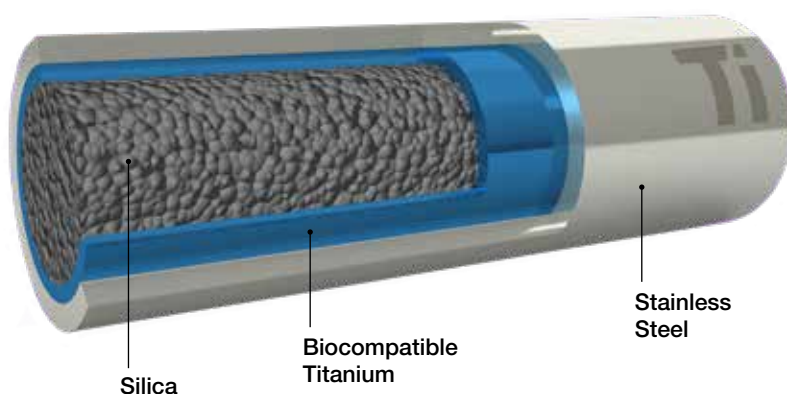
bioZen WCX 6 μm

Monosized particles grafted with linear polycarboxylate chains to envelop and separate proteins from acidic/basic variants

Monosized Polymeric Non-Porous



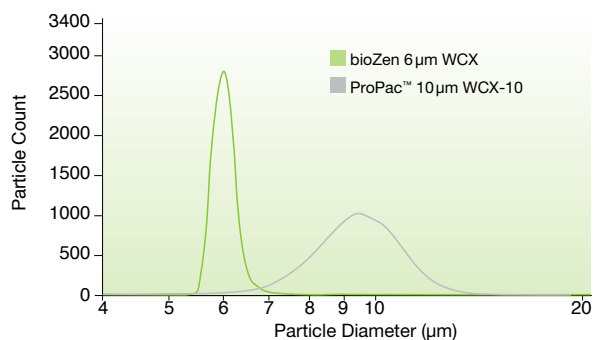
Minimize your priming and promote better recovery with our BioTi™ biocompatible hardware.



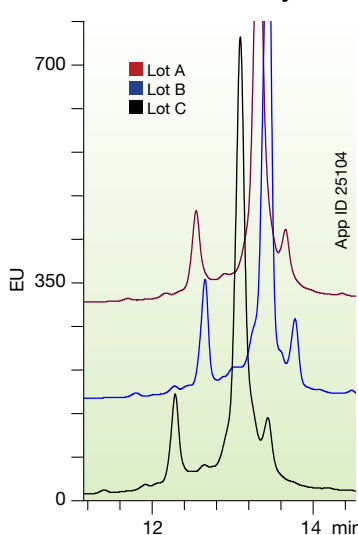
Monosized Particles for Optimal Consistency

Our specially crafted polymeric particle is produced with outstanding precision so that you can be confident in increased performance and minimized variation between lots.

Uniform Particle Size Distribution



Lot-to-Lot Consistency



Columns: bioZen 6 μm WCX
Dimension: 250 x 4.6 mm
Part No.: 00G-4777-E0
Mobile Phase: A: CX-1 Gradient Buffer A (pH 5.6)
 B: CX-1 Gradient Buffer B (pH 10.2)
Gradient: 0-100% B in 20 minutes
Flow Rate: 1 mL/min
Temperature: 30 °C
Detection: FLD @ 280 nm/360 nm (ex/em)
Sample: Trastuzumab

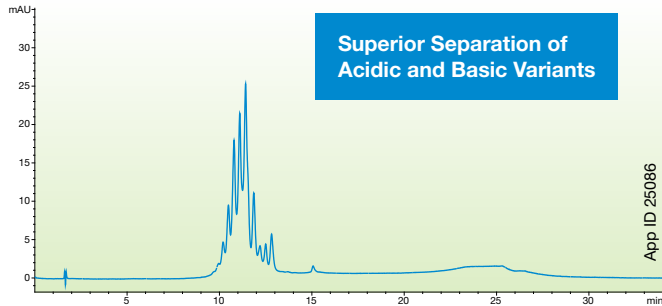
Note: CX-1 Gradient Buffers available from Thermo Fisher Scientific™

Comparative separations may not be representative of all applications.

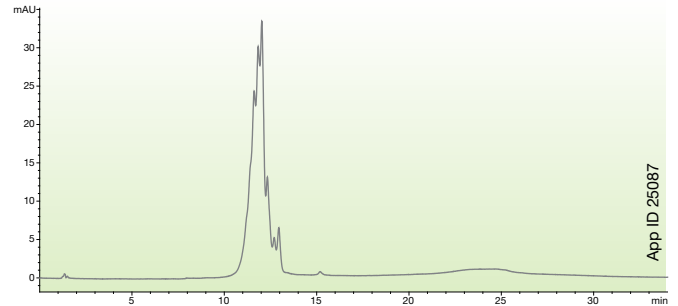
Acidic and Basic Variant Analysis

Whether using a pH gradient or salt gradient, the bioZen™ 6µm WCX consistently outperforms ProPac™ WCX-10 columns in charge variant analysis.

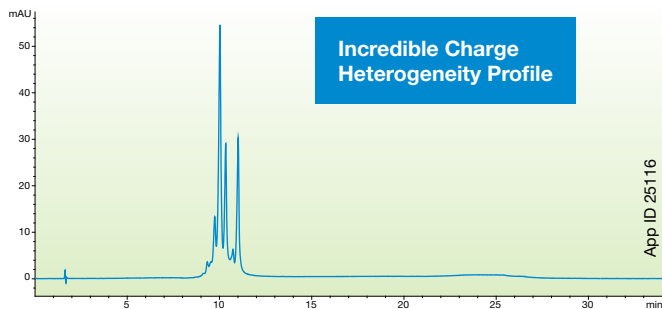
bioZen 6µm WCX Cetuximab



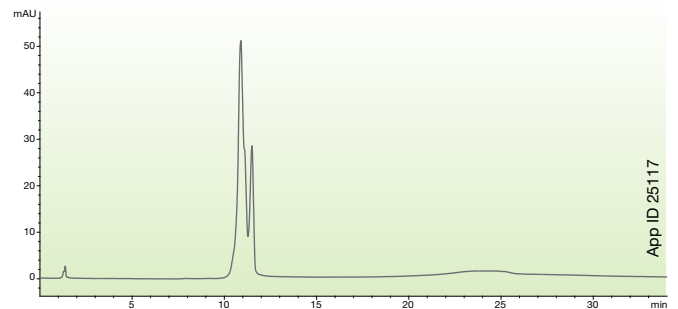
Thermo Scientific™ ProPac 10µm WCX-10 Cetuximab



bioZen 6µm WCX Infliximab



Thermo Scientific ProPac 10µm WCX-10 Infliximab



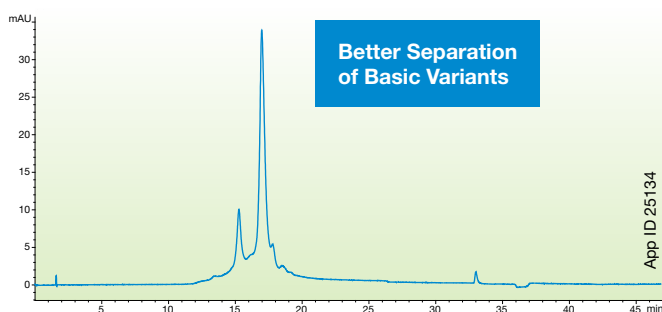
Conditions for all columns:

Columns: bioZen 6µm WCX
ProPac 10µm WCX-10
Dimension: 250 x 4.6 mm (bioZen)
250 x 4 mm (ProPac)
Mobile Phase: A: CX-1 Gradient Buffer A (pH 5.6)
B: CX-1 Gradient Buffer B (pH 10.2)

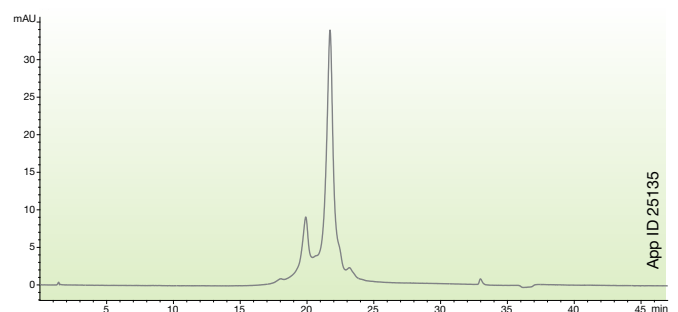
Gradient: 0-100% B in 20 minutes
Flow Rate: 1.0 mL/min (bioZen)
0.8 mL/min (ProPac)
Temperature: 30 °C
Detection: UV @ 280 nm
Sample: As indicated

Note: CX-1 Gradient Buffers available from Thermo Fisher Scientific™

bioZen 6µm WCX Trastuzumab



Thermo Scientific ProPac 10µm WCX-10 Trastuzumab



Conditions for all columns:

Columns: bioZen 6µm WCX
ProPac 10µm WCX-10
Dimension: 250 x 4.6 mm (bioZen)
250 x 4 mm (ProPac)
Mobile Phase: A: 20 mM MES (pH 5.6)
B: 20 mM MES + 300 mM NaCl (pH 5.6)

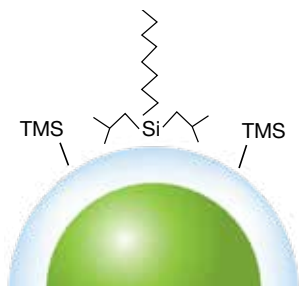
Gradient: 20-50% B in 20 minutes
Flow Rate: 1.0 mL/min (bioZen)
0.8 mL/min (ProPac)
Temperature: 30 °C
Detection: UV @ 280 nm
Sample: Trastuzumab

Comparative separations may not be representative of all applications.

Reliable Intact Fragment Analysis

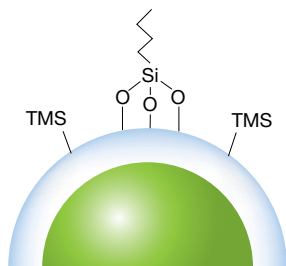
Impurity profiling and characterization of intact biologic fragments is a challenging undertaking because of the need to identify very small differences between variants. Both bioZen™ Intact columns contain skillfully manufactured large pore core-shell particles that provide narrower, taller peaks in conjunction with higher resolution between the target HC/LC, Fc/Fab, or isoforms.

Intact /Subunit



bioZen Intact XB-C8
3.6 μm

Large pore core-shell particle for fast intact and subunit biologic entry. C8 provides highly useful moderate hydrophobic selectivity



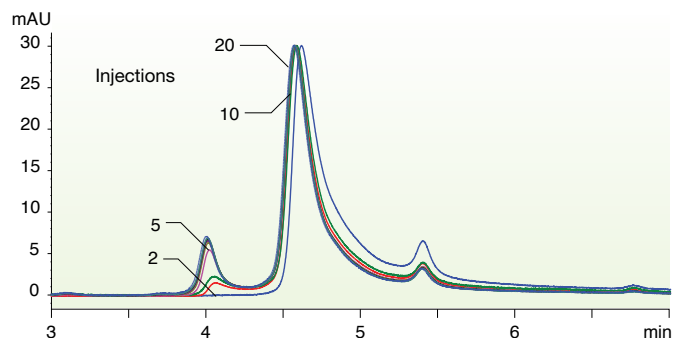
bioZen WidePore C4
2.6 μm

Core-shell particle with butyl stationary phase and optimal wide pore size distribution for better resolution of large biologics, including monoclonal antibodies and subunit analysis.

Minimize your priming with our BioTi™ biocompatible hardware.

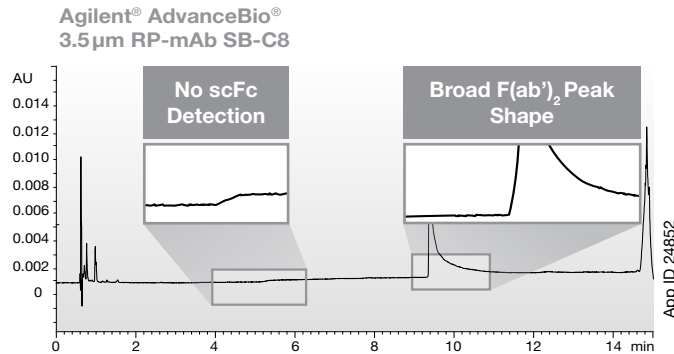
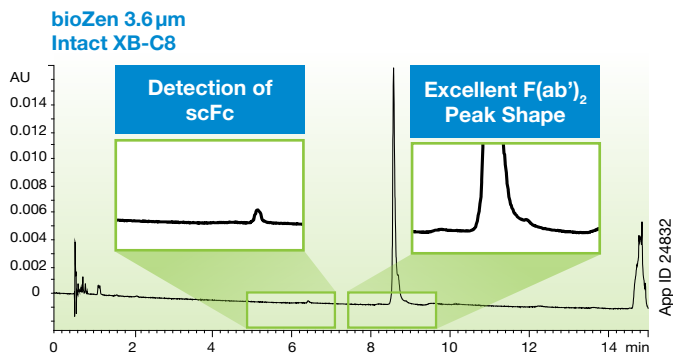


bioZen Titanium BioTi Hardware



scFc and F(ab')₂

Our bioZen Intact XB-C8 column shows improved peak shape and scFc detection



Conditions for all columns:

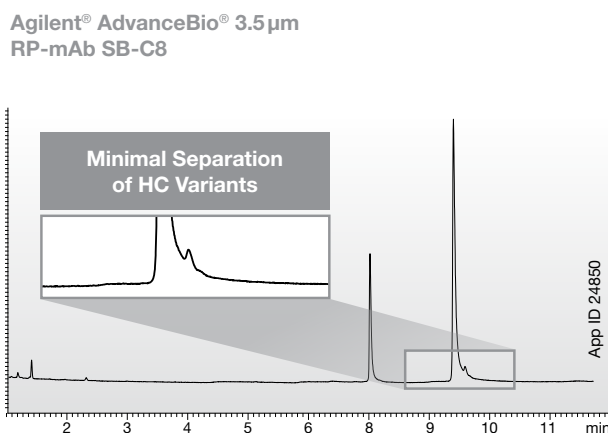
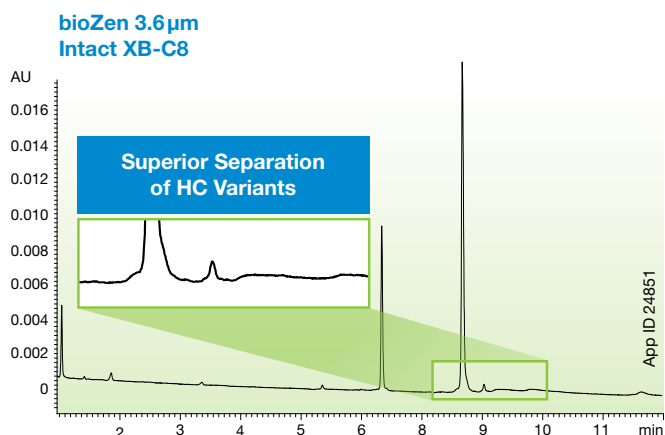
Column: bioZen 3.6 μm Intact XB-C8
Agilent 3.5 μm AdvanceBio RP-mAb SB-C8
Dimension: 150 x 2.1 mm
Mobile Phase: A: 0.1 % TFA in Water
B: 0.1 % TFA in Acetonitrile
Gradient: 20-45 % B in 12 minutes

Flow Rate: 0.5 mL/min
Detection: UV @ 280 nm
Temperature: 80 °C
Injection Volume: 1 μL
Sample: Cetuximab

Comparative separations may not be representative of all applications.

Heavy Chain, Light Chain Analysis

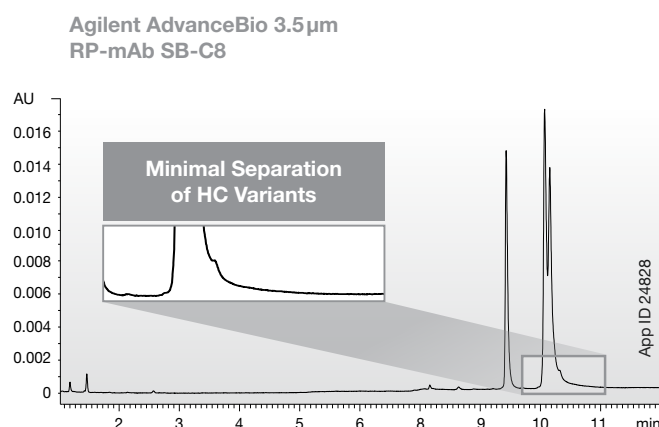
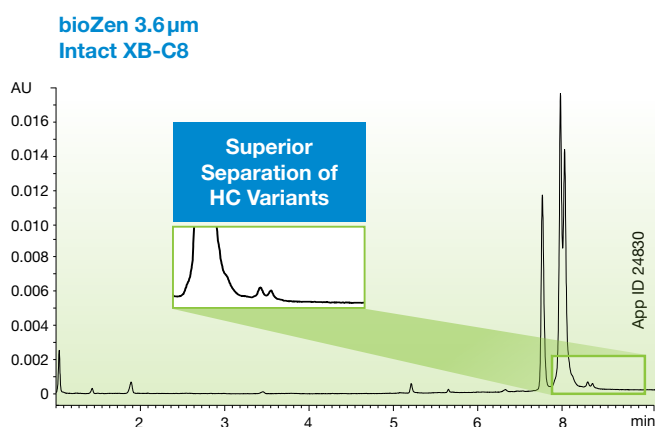
Observe excellent separation of heavy chain variants using the bioZen™ Intact XB-C8 column in your mAb intact fragment analysis.



Conditions for all columns:

Column: bioZen 3.6µm Intact XB-C8
Agilent 3.5µm AdvanceBio RP-mAb SB-C8
Dimension: 150 x 2.1 mm
Mobile Phase: A: 0.1 % TFA in Water
B: 0.1 % TFA in Acetonitrile
Gradient: 20-45% B in 12 minutes

Flow Rate: 0.5 mL/min
Detection: UV @ 280 nm
Temperature: 80 °C
Injection Volume: 1 µL
Sample: Cetuximab



Conditions for all columns:

Column: bioZen 3.6µm Intact XB-C8
Agilent 3.5µm AdvanceBio RP-mAb SB-C8
Dimension: 150 x 2.1 mm
Mobile Phase: A: 0.1 % TFA in Water
B: 0.1 % TFA in Acetonitrile
Gradient: 20-45% B in 12 minutes

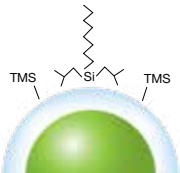

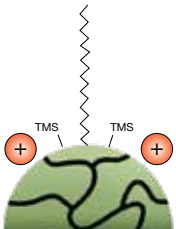
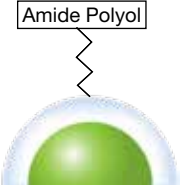
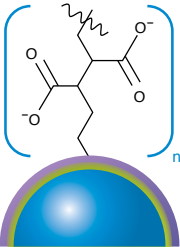
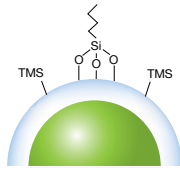

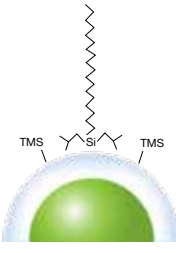
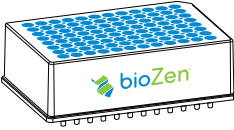

Flow Rate: 0.5 mL/min
Detection: UV @ 280 nm
Temperature: 80 °C
Injection Volume: 1 µL
Sample: Rituximab

Comparative separations may not be representative of all applications.

Go online to view bioZen
WidePore C4 applications

www.phenomenex.com/bioZenWidePore

8 Particle Chemistries and Growing

Intact /Subunit	Size Exclusion (SEC)	Peptide	Glycan	Ion-Exchange
 <p>bioZen™ Intact XB-C8 3.6µm</p> <p>Large pore core-shell particle for fast intact and subunit biologic entry. C8 provides highly useful moderate hydrophobic selectivity.</p>	 <p>bioZen SEC-2 1.8µm</p> <p>Extremely inert, high density fully porous particle with high efficiency and low molecular weight (LMW) separation range of 1k–450 kDa.</p>	 <p>bioZen Peptide PS-C18 1.6µm and 3µm</p> <p>Excellent retention by combined positively charged surface ligand and C18 ligand.</p>	 <p>bioZen Glycan 2.6µm</p> <p>Provides optimal combination of high efficiency and selectivity for released glycans.</p>	 <p>bioZen WCX 6µm</p> <p>Monosized particles grafted with linear polycarboxylate chains to envelop and separate proteins from acidic/basic variants</p>
 <p>bioZen WidePore C4 2.6µm</p> <p>Core-shell particle with butyl stationary phase and optimal wide pore size distribution for better resolution of large biologics, including monoclonal antibodies and subunit analysis.</p>	 <p>bioZen SEC-3 1.8µm</p> <p>Extremely inert, high density fully porous particle with high efficiency and high molecular weight (HMW) separation range of 10k–700 kDa.</p>	 <p>bioZen Peptide XB-C18 1.7µm and 2.6µm</p> <p>Overall retention of both acidic and basic peptides through C18 stationary phase with di-isobutyl side chains.</p>	<p>Sample Preparation Solutions</p> <div style="display: flex; justify-content: space-between;"> <div style="width: 45%;"> <p>N-Glycan Clean-Up</p>  <p>HILIC Solid Phase Extraction (SPE)</p> <p>High recovery of labeled released N-glycans in a microelution format allowing for streamlined processing and clean-up of small sample volumes.</p> </div> <div style="width: 45%;"> <p>MagBeads</p>  <p>Streptavidin Coated</p> <p>Higher binding capacity magnetic particles result in faster and reliable purification, clean-up, and isolation of proteins and peptide molecules.</p> </div> </div>	

Material Characteristics

Phases	Particle Type	Pore Size (Å)	Surface Area (m ² /g)	Carbon Load (%)	pH Stability	Pressure (psi/bar)	Temp (°C)	Mode of Analysis
bioZen 2.6µm Glycan	Core-shell	100	200	-	2 - 7.5	8,700/600	60	HILIC
bioZen 1.6µm Peptide PS-C18	Thermally modified fully porous	100	260	9	1.5 - 8.5***	15,000/1,030	90*	RP
bioZen 3µm Peptide PS-C18						5,000/345		RP
bioZen 1.7µm Peptide XB-C18	Core-shell	100	200	10	1.5 - 9***	15,000/1,050	90*	RP
bioZen 2.6µm Peptide XB-C18						8,700/600		RP
bioZen 2.6µm WidePore C4	Core-shell	400	25	-	1.5 - 9**	12500	90*	RP
bioZen 3.6µm Intact XB-C8		200				8,700/600		RP
bioZen 1.8µm SEC-2	Thermally modified fully porous	150	-	-	1.5-8.5	7,000/480	50	SEC/GFC
bioZen 1.8µm SEC-3		300	-	-		7,000/480		SEC/GFC
bioZen 6µm WCX	Non-porous PS-DVB polymer	-	-	-	2 - 12	6,000/415	60	IEX

* Temperature limits are dependent on method running parameters. The temperature limit of the phase at high pH, for example, would be approximately at 60 °C
 ** pH range is 1.5-9 under gradient conditions. pH range is 1.5-10 under isocratic conditions.
 *** pH range is 1.5-8.5 under gradient conditions. pH range is 1.5-10 under isocratic conditions.

Learn More: [Phenomenex.com/bioZen](https://www.phenomenex.com/bioZen)

Biocompatible SecurityLINK LC Fingertight Fittings

The SecurityLINK UHPLC fingertight fitting system simplifies your system and column connections and provides consistent performance with torque limiting technology that prevents column damaging overtightening.

SecurityLINK UHPLC Fittings

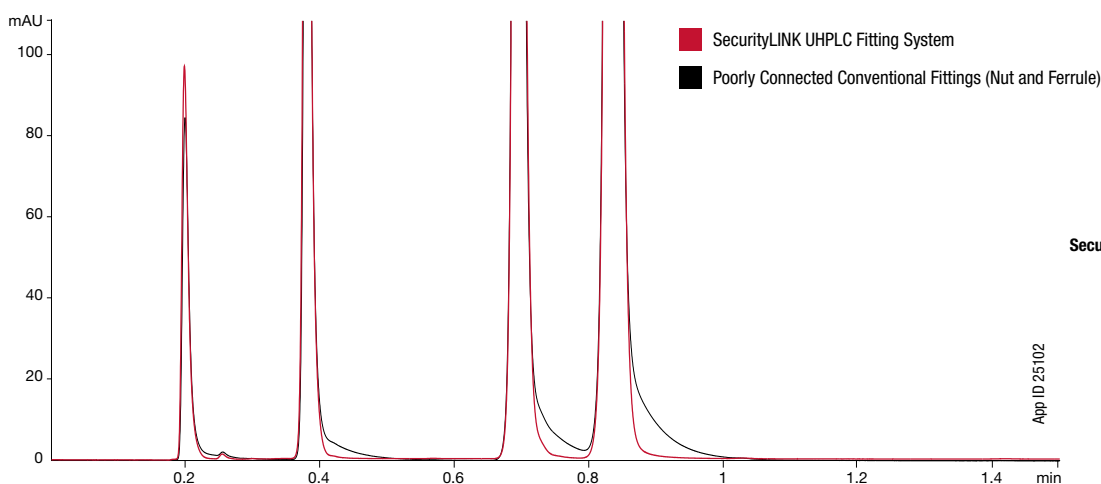
- No tools required for quick and easy installation
- Fitting self-adjusts at column inlet to ensure zero dead volume for better chromatographic results
- Torque limiting technology prevents system and column port damage
- UHPLC and HPLC compatibility: pressure rated to 19,000 psi (1,310 bar)

SecurityLINK 
UHPLC Connections in a Click



Prevent Peak Tailing and Broadening

Poorly connected fittings are often the causes of carryover, band broadening, and peak tailing. SecurityLINK offers zero dead-volume connections every time.



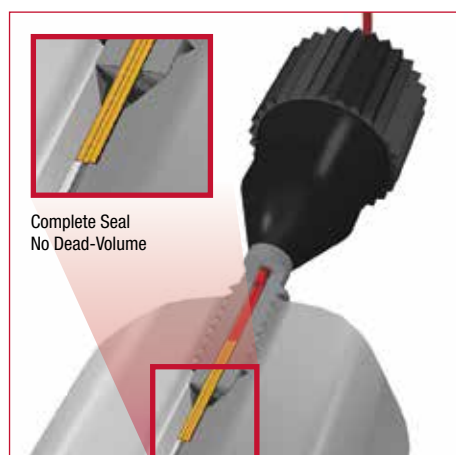
Conditions for both separations:

Column: Luna® Omega 1.6 µm C18
Dimensions: 50 x 2.1 mm
Part No.: 00B-4742-AN
SecurityLINK Part No.: AJ1-1421
Mobile Phase: Water/Acetonitrile (35:65)
Flow Rate: 0.5 mL/min
Injection Volume: 0.2 µL
Temperature: 25 °C
Detection: UV @ 254 nm
Sample: 1. Uracil
2. Acetophenone
3. Toluene
4. Naphthalene

What is Torque Limiting Technology?

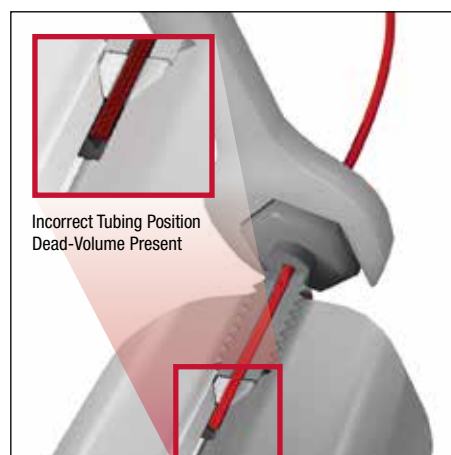
Once the perfect connection has been made through finger tightening, the SecurityLINK fitting offers a haptic “click” to confirm that optimum torque has been reached.

SecurityLINK UHPLC Fitting System



VS.

Poorly Connected Conventional Fittings (Nut and Ferrule)



Ordering Information

bioZen™ Products - Powered by Biocompatible Hardware



bioZen Columns (mm)	Biocompatible Guard Cartridges								Holder	
	50 x 2.1	100 x 2.1	150 x 2.1	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	for 2.1 mm	for 4.6 mm	ea
bioZen 2.6 µm Glycan	00B-4773-AN	00D-4773-AN	00F-4773-AN	—	—	—	—	/3pk	—	AJO-9000
bioZen 1.6 µm Peptide PS-C18	00B-4770-AN	00D-4770-AN	00F-4770-AN	—	—	—	—	—	—	AJO-9000
bioZen 3 µm Peptide PS-C18	00B-4771-AN	—	00F-4771-AN	00B-4771-E0	—	00F-4771-E0	—	AJO-7605	AJO-7606	KJO-4282
bioZen 1.7 µm Peptide XB-C18	00B-4774-AN	00D-4774-AN	00F-4774-AN	—	—	—	—	AJO-9806	—	AJO-9000
bioZen 2.6 µm Peptide XB-C18	00B-4768-AN	00D-4768-AN	00F-4768-AN	00B-4768-E0	—	00F-4768-E0	—	AJO-9806	AJO-9808	AJO-9000
bioZen 2.6 µm WidePore C4	00B-4786-AN	00D-4786-AN	00F-4786-AN	00B-4786-E0	00D-4786-E0	00F-4786-E0	00G-4786-E0	AJO-9809	AJO-9811	AJO-9000
bioZen 3.6 µm Intact XB-C8	00B-4766-AN	00D-4766-AN	00F-4766-AN	00B-4766-E0	—	00F-4766-E0	—	AJO-9812	AJO-9814	AJO-9000

									for 4.6 mm		Holder
	50 x 2.1	100 x 2.1	150 x 2.1	250 x 2.1	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	300 x 4.6	/3pk	ea
bioZen 1.8 µm SEC-2	00B-4769-AN	—	00F-4769-AN	—	—	—	00F-4769-E0	—	00H-4769-E0	AJO-9850	AJO-9000
bioZen 1.8 µm SEC-3	00B-4772-AN	—	00F-4772-AN	—	—	00D-4772-E0	00F-4772-E0	—	00H-4772-E0	AJO-9851	AJO-9000

									for 4.6 mm		Holder
	50 x 2.1	100 x 2.1	150 x 2.1	250 x 2.1	50 x 4.6	100 x 4.6	150 x 4.6	250 x 4.6	300 x 4.6	/10pk	ea
bioZen 6 µm WCX	00B-4777-AN	00D-4777-AN	00F-4777-AN	00G-4777-AN	00B-4777-E0	00D-4777-E0	00F-4777-E0	00G-4777-E0	—	AJO-9400	KJO-4282

Sample Preparation

bioZen Solid Phase Extraction	Format	Sorbent Mass	Part Number	Unit
bioZen N-Glycan Clean-Up	Microelution 96-Well Plate	5 mg/well	8M-S009-NGA	1/box

For More Information about MagBeads,
Email: sampleprep@phenomenex.com

SecurityLINK™ Products

SecurityLINK PEEKsil™ Double-Sided
10-32 Fittings for 1/16 in. Ports



Part No.	ID (µm)	LENGTH (mm)	Fitting Size Top (in.)	Fitting Size Bottom (in.)
AJ1-2111	25	100	1/16	1/16
AJ1-2121	25	150	1/16	1/16
AJ1-2141	25	250	1/16	1/16
AJ1-2151	25	300	1/16	1/16
AJ1-2171	25	500	1/16	1/16
AJ1-2191	25	750	1/16	1/16
AJ1-21A1	25	1000	1/16	1/16
AJ1-2211	50	100	1/16	1/16
AJ1-2221	50	150	1/16	1/16
AJ1-2231	50	200	1/16	1/16
AJ1-2241	50	250	1/16	1/16
AJ1-2251	50	300	1/16	1/16
AJ1-2271	50	500	1/16	1/16
AJ1-2291	50	750	1/16	1/16
AJ1-22A1	50	1000	1/16	1/16
AJ1-2321	75	150	1/16	1/16
AJ1-2341	75	250	1/16	1/16
AJ1-2371	75	500	1/16	1/16
AJ1-23A1	75	1000	1/16	1/16
AJ1-2411	100	100	1/16	1/16
AJ1-2421	100	150	1/16	1/16
AJ1-2441	100	250	1/16	1/16
AJ1-2471	100	500	1/16	1/16
AJ1-24A1	100	1000	1/16	1/16

PEEKsil Single-Sided Fittings
1/2 in. OD PEEKsil Tubing with one 10-32 fitting
for 1/16 in. ports, and one side with no fitting



Part No.	ID (µm)	LENGTH (mm)	Fitting Size Top (in.)	Fitting Size Bottom (in.)
AJ1-2224	50	150	1/16	None
AJ1-2274	50	500	1/16	None
AJ1-2294	50	750	1/16	None
AJ1-22A4	50	1000	1/16	None

PEEK-Lined Stainless Steel Double-Sided
10-32 Fittings for 1/16 in. Ports



Part No.	ID (µm)	LENGTH (mm)	Fitting Size Top (in.)	Fitting Size Bottom (in.)
AJ1-3121	25	150	1/16	1/16
AJ1-3141	25	250	1/16	1/16
AJ1-3161	25	350	1/16	1/16
AJ1-3171	25	500	1/16	1/16
AJ1-3181	25	600	1/16	1/16
AJ1-3221	50	150	1/16	1/16
AJ1-3241	50	250	1/16	1/16
AJ1-3261	50	350	1/16	1/16
AJ1-3271	50	500	1/16	1/16
AJ1-3281	50	600	1/16	1/16
AJ1-3321	75	150	1/16	1/16
AJ1-3341	75	250	1/16	1/16
AJ1-3361	75	350	1/16	1/16
AJ1-3371	75	500	1/16	1/16
AJ1-3381	75	600	1/16	1/16
AJ1-3421	100	150	1/16	1/16
AJ1-3441	100	250	1/16	1/16
AJ1-3461	100	350	1/16	1/16
AJ1-3471	100	500	1/16	1/16
AJ1-3481	100	600	1/16	1/16

Stainless Steel Double-Sided
10-32 Fittings for 1/16 in. Ports



Part No.	ID (µm)	LENGTH (mm)	Fitting Size Top (in.)	Fitting Size Bottom (in.)
AJ1-1421	100	150	1/16	1/16
AJ1-1441	100	250	1/16	1/16
AJ1-1461	100	350	1/16	1/16
AJ1-1471	100	500	1/16	1/16
AJ1-1481	100	600	1/16	1/16
AJ1-1521	125	150	1/16	1/16
AJ1-1541	125	250	1/16	1/16
AJ1-1561	125	350	1/16	1/16
AJ1-1571	125	500	1/16	1/16
AJ1-1581	125	600	1/16	1/16
AJ1-1621	254	150	1/16	1/16
AJ1-1641	254	250	1/16	1/16
AJ1-1661	254	350	1/16	1/16
AJ1-1671	254	500	1/16	1/16
AJ1-1681	254	600	1/16	1/16

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