Flash Chromatography

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Flash Chromatography

Seamlessly Upgrade from Traditional Columns to CLARICEP Flash

Bonna-Agela Technologies have developed a technology that effectively deactivates the silica surface. As a result, CLARICEP Flash columns have less surface activity than ordinary silica columns and demonstrate significantly improved chromatographic performance.

Traditional Column

- **High surface activity that causes instability of certain compounds**
- **Unwanted tailing or overly long retention of basic compounds due to secondary ionic reactions or metal chelating effects**
- **Poor reproducibility**
- **Limited selectivity range**
- **Pressure limited**

Vs.

CLARICEP Column

- **Deactivated silica surface promotes compound stability**
- **Excellent peak shape and performance for both acidic and basic compounds**
- **High quality and reproducibility**
- **Wide range of selectivities**
- **High pressure tolerance**

CLARICEP™
Irregular CS Silica Columns

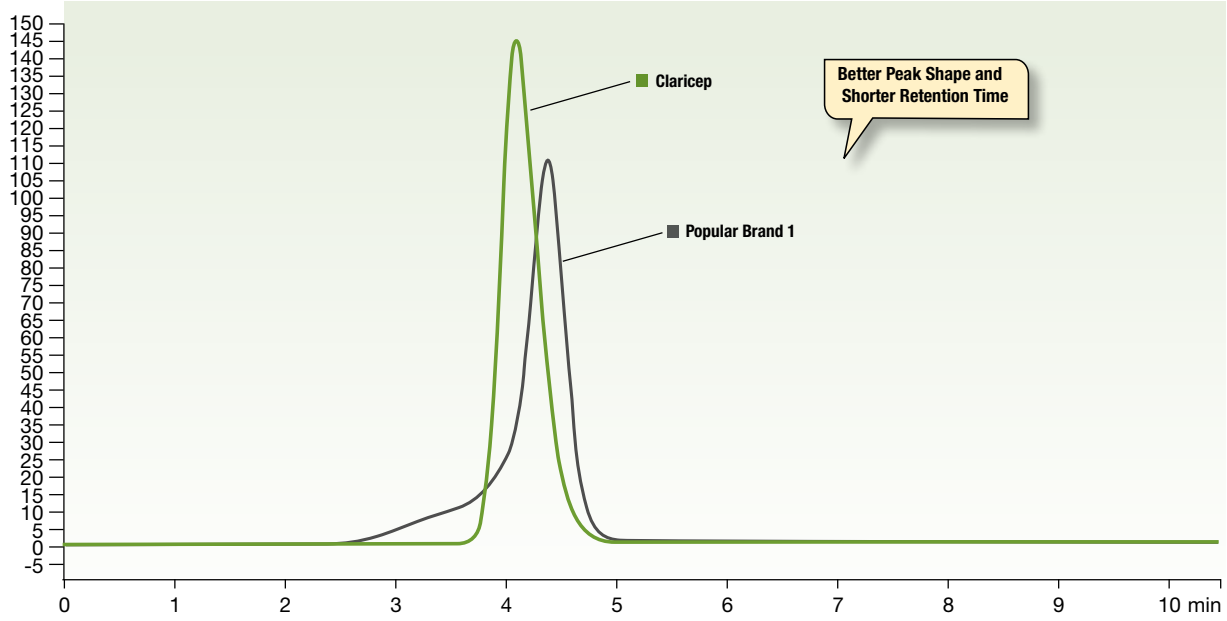
- **Ultra pure silica packing**
- **Additional acid and deionized water wash**
- **Narrow particle size range**
- **Carefully controlled water content**

Technical Specifications

Surface Area:	480 m^2/g
Surface pH:	6.3-7.2
Water Content:	3.0-5.0 %
Averge Particle Size:	40-60 µm
Average Pore Size:	60 Å

Improved Peak Shape and Faster Analysis

Aniline Peak Symmetry and Retention Test



Flash Conditions:

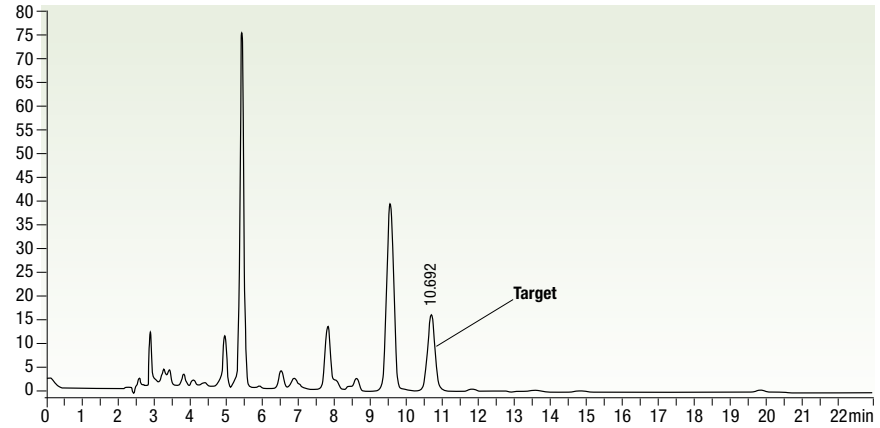
Column: Claricep Irregular Silica CS (40-60 µm, 60 Å, 40 g)
Brand I: Flash Irregular Silica (40 g)
Mobile Phase: Dichloromethane/ Methanol (99 : 1)
Flow Rate: 20 mL/min
Detector: UV @ 254 nm
Temperature: Ambient
Retention Time: CLARICEP CS: 4.090 min
Brand I: 4.373 min
Sample: Aniline

Comparative separations may not be representative of all applications.

CLARICEP™
Irregular CS Silica Columns *(cont'd)*

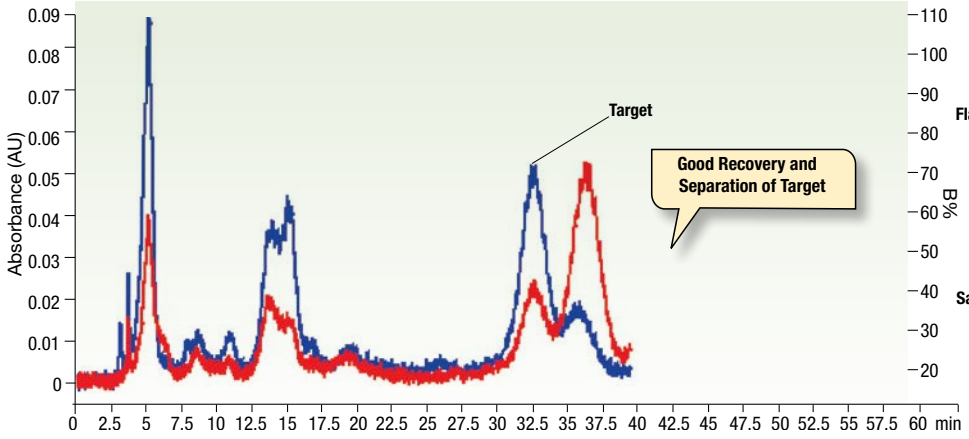
The Purity of Sesamol in Sesame Oil

HPLC Analysis



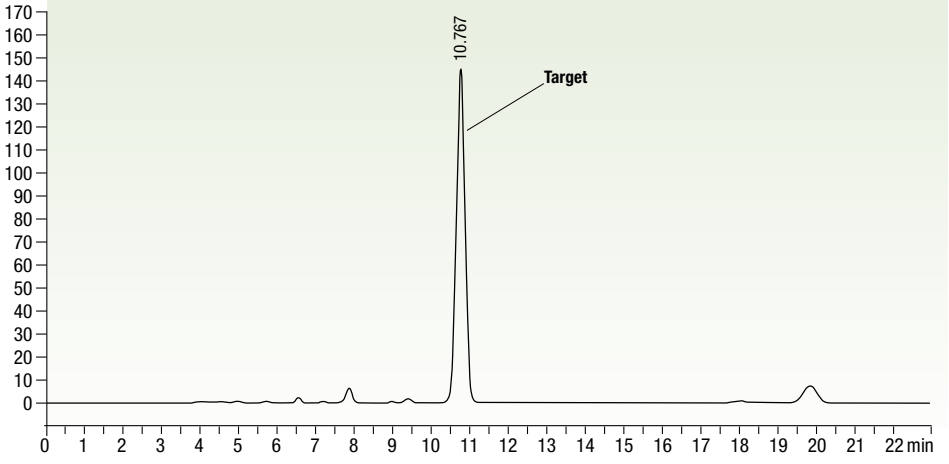
Column: Fully Porous, 5 µm, C18 Column
Dimensions: 4.6 x 150 mm
Mobile Phase: Methanol/Water (75:25)

Flash Purification



Flash Conditions:
Column: Claricep™ Irregular Silica CS (40-60 µm, 60Å, 12 g)
Part No.: CS140012-0
Mobile Phase: Acetic ether/ Petroleum ether (12:88)
Flow Rate: 18 mL/min
Injection Volume: 4 mL
Sample Concentration: 400 mg/20 mL
Instrument: CHEETAH™ MP 100

Purity Confirmation



CLARICEP™
Irregular CM Silica Columns

- **Significantly improved performance over regular flash columns**
- **Silica deactivated by proprietary process**
- **Alternative selectivity for complex purification requirements**

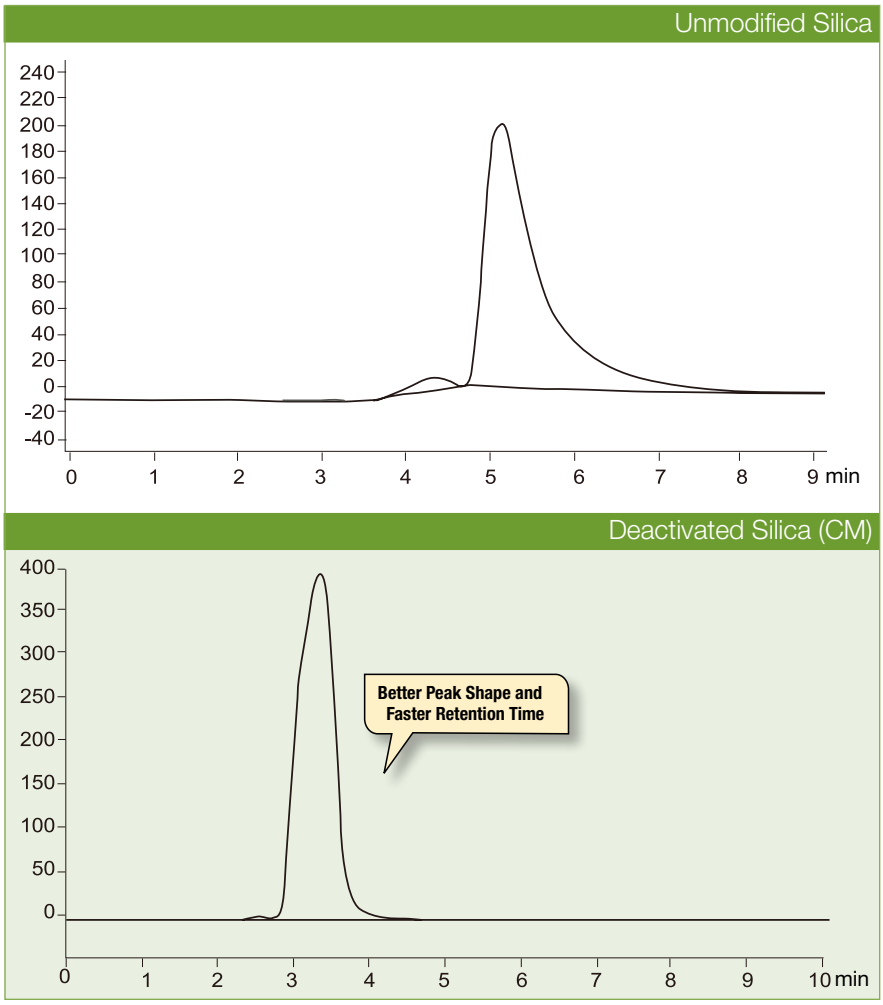
Technical Specifications

Averge Particle Size:	40-60 µm
Average Pore Size:	60 Å
Surface Area:	480 m^2/g

Better Peak Shape With CM Silica

HPLC Test:

Unmodified and Deactivated Silica were packed into individual stainless steel columns (4.6 x 150 mm) and then evaluated on a HPLC System



HPLC Conditions:

Dimensions: 150 x 4.6 mm
Mobile Phase: Dichloromethane/Methanol (98:2)
Flow Rate: 1.8 mL/min
Injection Volume: 5 µL
Temperature: 30 °C
Detector: UV @ 254 nm
Sample: Catechol 100 µg/mL

CLARICEP™ Spherical Silica Columns

Technical Specifications

Average Particle Size:	20 µm	20-35 µm	
Surface Area:	320 m^2/g	480 m^2/g	320 m^2/g
Water Content:	3.0 - 5.0 %	3.0 - 5.0 %	3.0 - 5.0 %
Average Pore Size:	100 Å	60 Å	100 Å
	• Higher Resolution • Better Purification	• Lower Backpressure • Faster Flow Rate • Higher Loading Capacity	• Lower Backpressure • Faster Flow Rate

Purification of a Sample with Methacrylic Acid Ester Target Compound

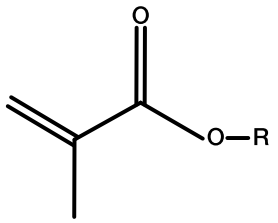
Sample Information:

The sample is colorless liquid, with about 60 % target compound by weight

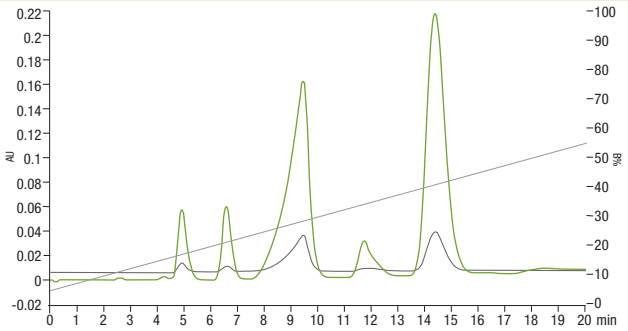
Dissolve 0.2 mL of sample into 1.5 mL ethanol sonication

Structure:

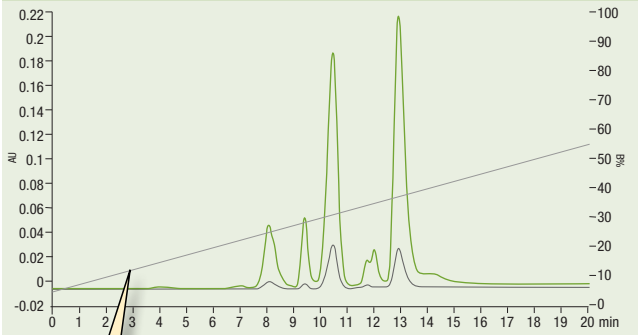
Small molecular weight with UV absorption of methacrylic acid ester R: no UV absorption



Column A: Claricep 20-35 µm



Column B: Claricep 20 µm



Claricep Flash silica 20 µm is a better choice for complex sample polarity. It provides higher resolution and better purification performance.

Flash Conditions:

Column A: Claricep Spherical Silica (20-35 µm, 100 Å, 12 g, 2 columns in tandem)

Column B: Claricep Spherical Silica (20 µm, 100 Å, 12 g, 2 columns in tandem)

Part Nos.: Column A: SS130012-0
Column B: SS120012-0

Mobile Phase: A: Hexane B: Ethanol

Gradient:

Time/min	B %
0	5
20	55

Flow Rate: 12 mL/min

Detector: UV @ 254/220 nm

Sample Loading: 0.2 mL

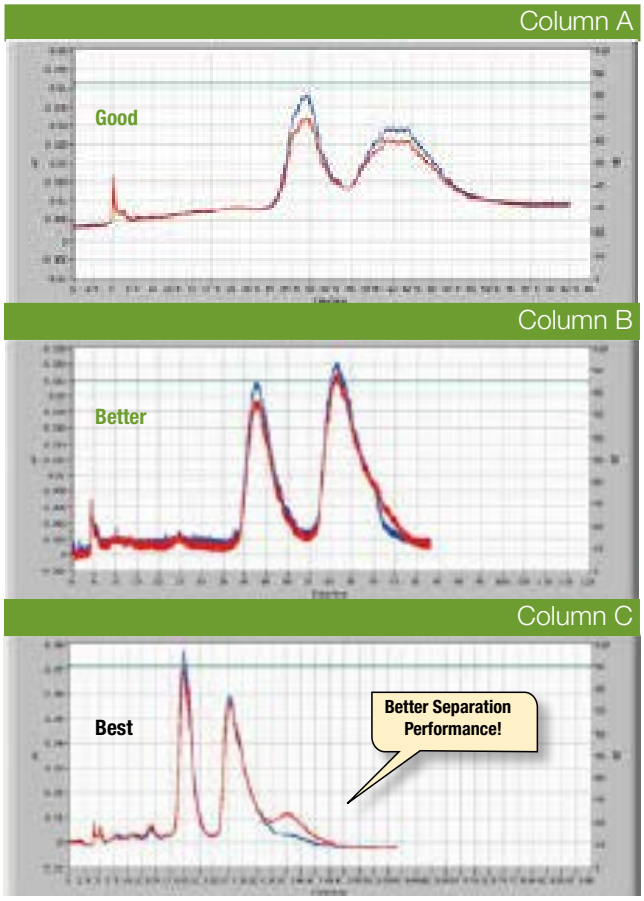
CLARICEP™ Spherical C18 Columns

- **Significantly improved performance over regular flash columns**
- **Silica deactivated by proprietary process**
- **Alternative selectivity for complex purification requirements**

Technical Specifications

Average Particle Size:	20 µm	20 - 35 µm		40 - 60 µm
Average Pore Size:	100Å	60Å	100Å	100Å
Carbon Loading:	14%	15%	14%	14%

Tetrandrine Extracted from Natural Products, Formulation



Flash Conditions:

Column A: Brand X Flash Irregular C18 (40-60 µm 100Å, 12 g, 3 columns in tandem)
Column B: Claricep Spherical C18 (20-35 µm 100Å, 12 g, 3 columns in tandem)
Column C: Claricep Spherical C18 (20 µm 100Å, 12 g, 3 columns in tandem)
Part Nos.: Column B: S0230012-0
Column C: C-S0120012-0
Mobile Phase: A: Water
B: Methanol with 0.06% diethylamine

Gradient:

Time/min	% B
0	85
100	85

Detector: UV @ 254/282 nm
Sample: Tetrandrine

Did You Know?

Flash Chromatography also known as medium pressure chromatography is:

- A pressure driven hybrid for medium and short column chromatography optimized for rapid separation
- Popularized years ago by Clark Still of Columbia University
- An alternative to slow and inefficient gravity-fed chromatography

Comparative separations may not be representative of all applications.

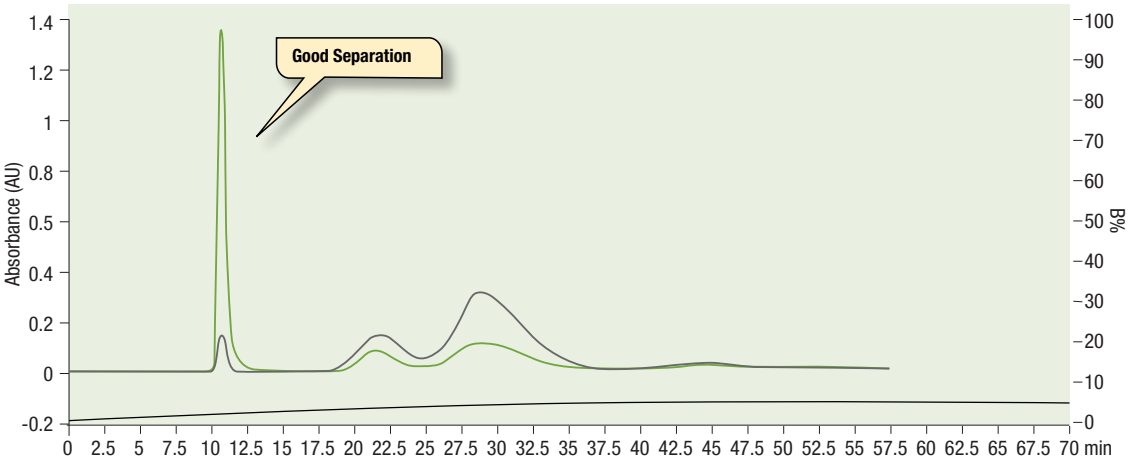
CLARICEP™
Spherical AQ C18 Columns

- **Greater polar retention under reversed phase**
- **Applicable for both hydrophilic and hydrophobic compounds**
- **Useful for mixtures of compounds with varying polarities**

Technical Specifications

Surface Area:	300 m²/g	320 m²/g	320 m²/g
Averge Particle Size:	40-60 µm	20-35 µm	20 µm
Average Pore Size:	100 Å	100 Å	100 Å
Carbon Loading:	14 %	15 %	15 %

High Resolution Separation of Iridoids



Flash Conditions:

Column: Claricep Spherical AQ C18 (20-35 µm, 100 Å)
Mobile Phase: Methanol/ Water/Formic Acid
Flow Rate: 26 mL/min
Detector: UV @ 231/214 nm
Sample: Iridoid Compounds

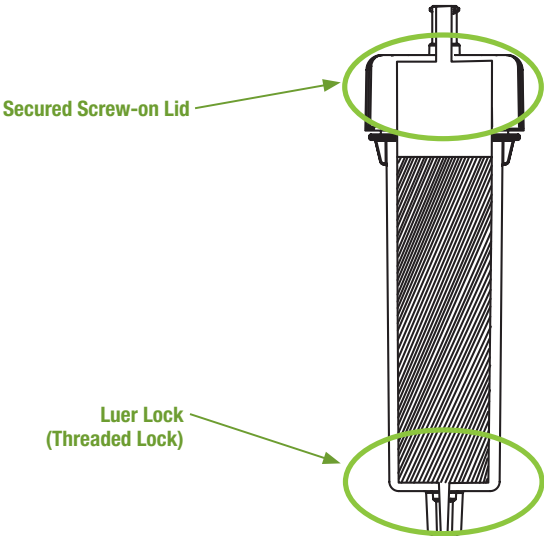
CLARICEP™ Screw-on Flash Columns

This first series of Flash Screw-on is a new feature of Claricep columns that allows the user to load solid samples directly on the column.

i-Series

The i-Series features a managed column head space with a secured screw-on lid. This new design allows either loading of liquid samples directly onto the column head or loading of impregnated solid sample directly into the space. Users will benefit from:

- **Choice of loading method based on sample properties**
- **Narrow band for liquid samples because of wide loading area**
- **Dry-loading of solid impregnated samples minimizes band broadening**
- **Customized loading method upon user preference**
- **Higher load tolerance and reusable consumables**

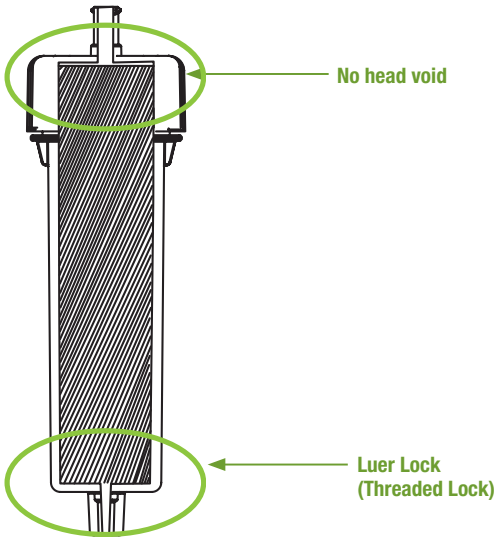


s-Series

The s-Series columns are fully packed without a head void and a secure screw-on lid. In addition, the Luer lock fittings for both inlet and outlet allows easy operation of tandem columns or the coupling of a loading cartridge.

Compatible with the following instrument:

- **Biotage**

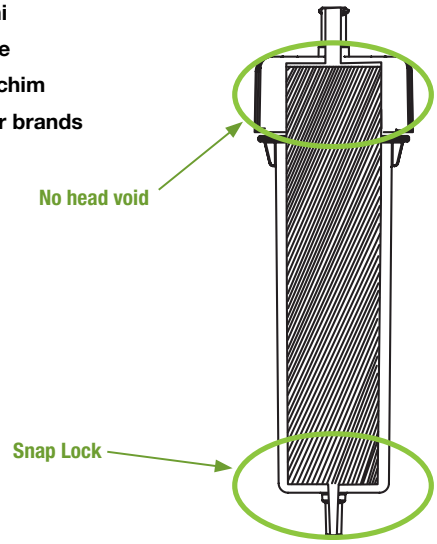


c-Series

The c-Series shares the same design, but the column outlet does not have a luer lock structure with a screw-on lid, this simplifies tubing connection across various flash systems.

Compatible with instruments from the following:

- **Teledyne ISCO**
- **Agela Technologies**
- **Buchi**
- **Grace**
- **Interchim**
- **Other brands**



Note: Request an external option to lead any dry sample loading via empty tubes (20/40/80/120g tube equivalent size) by contacting a Phenomenex representatve.

Easy to Order Screw-On Flash Columns

Ordering Information

Screw-On Flash Columns

Part No.	Description
For i-series	
SN	Part Number starts with "SN". As an example, to order CS140012-0 in i-series, Part Number to order is SN-CS140012-0
For s-series	
S	Part Number starts with "S". As an example, to order CS140012-0 in s-series, Part Number to order is S-CS140012-0
For c-series	
C	Part Number starts with "C". As an example, to order CS140012-0 in c-series, Part Number to order is S-CS140012-0

Claricep™ Irregular and Spherical Silica and Spherical Bonded Phase Flash Columns

Ordering Information

Irregular Silica Phase

Type	Average Particle Size (µm)	Pore Size (µm)	Part No.	Silica Amount (g)	Unit (pk)
Silica (CS) Standard Silica	40 - 60 µm	60Å	CS140004-0	4	20
			CS140012-0	12	20
			CS140020-0	20	20
			CS140040-0	40	10
			CS140080-0	80	5
			CS140120-0	120	5
			CS140330-0	330	1
			CS140800-0	800	1
			CS1401500-0	1500	1

Also available in i-series, s-series & c-series (12 g, 20 g, 40 g, 80 g, & 120 g) per request (Contact your Sales Rep)

Spherical Silica Phase

Type	Average Particle Size (µm)	Pore Size (µm)	Part No.	Silica Amount (g)	Unit (pk)
Spherical Silica	20 - 35 µm	60Å	SS130004-0	4	20
			SS130012-0	12	20
			SS130020-0	20	20
			SS130040-0	40	10
			SS130080-0	80	5
			SS130120-0	120	5
			SS130330-0	330	1

Also available in i-series, s-series & c-series (12 g, 20 g, 40 g, 80 g, & 120 g) per request (Contact your Sales Rep)

Spherical Bonded Phase

Type	Average Particle Size (µm)	Pore Size (µm)	Part No.	Silica Amount (g)	Unit (pk)
C18	40 - 60 µm	100Å	SO240004-0	4	20
			SO240012-0	12	20
			SO240020-0	20	20
			SO240040-0	40	10
			SO240080-0	80	5
			SO240120-0	120	5
			SO240330-0	330	1
			SO240800-0	800	1
			SO2401500-0	1500	1

Also available in i-series, s-series & c-series (12 g, 20 g, 40 g, 80 g, & 120 g) per request (Contact your Sales Rep)

Spherical Bonded Phase

Type	Average Particle Size (µm)	Pore Size (µm)	Part No.	Silica Amount (g)	Unit (pk)
C18	20 - 35 µm	100Å	SO230004-0	4	20
			SO230012-0	12	20
			SO230020-0	20	20
			SO230040-0	40	10
			SO230080-0	80	5
			SO230120-0	120	5
			SO230330-0	330	1

Also available in i-series, s-series & c-series (12 g, 20 g, 40 g, 80 g, & 120 g) per request (Contact your Sales Rep)

Spherical Bonded Phase

Type	Average Particle Size (µm)	Pore Size (µm)	Part No.	Silica Amount (g)	Unit (pk)
AQ C18	20 - 35 µm	100Å	SQ230004-0	4	20
			SQ230012-0	12	20
			SQ230020-0	20	20
			SQ230040-0	40	10
			SQ230080-0	80	5
			SQ230120-0	120	5
			SQ230330-0	330	1

Also available in i-series, s-series & c-series (12 g, 20 g, 40 g, 80 g, & 120 g) per request (Contact your Sales Rep)

Reach out to your technical sales representative to ask about our CLARICEP flash bulk options.

NOTE: Additional CLARICEP Flash Column Phases, Formats, and Sizes Available. Contact Your Sales Rep or Our Technical Support.