



FOR BETTER SEPARATION

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Unified Separation
Technologies

Flash Chromatography Media and Columns



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ABOUT Unified Separation Technologies (UST)

Unified Separation Technologies (UST) is at the forefront of chromatography innovation, offering a comprehensive range of advanced solutions. Our high-quality spherical silica gel, featuring a narrow pore size distribution, is optimized for reliable chromatographic performance. Using proprietary unsymmetrical bonding technology, UST develops unique stationary phases that enhance separation efficiency. Our product portfolio includes Flash and preparative HPLC columns packed with premium materials, specialized magnetic solid-phase extraction (MSPE) products, and automated systems that streamline the mSPE process. These solutions are tailored for pharmaceutical and biopharmaceutical separation and purification, optimizing downstream processes for greater precision, efficiency, and cost-effectiveness.

With over 30 years of experience in silica chemistry and separation technologies, our founding team brings deep industry expertise. We are dedicated to delivering innovative solutions that enhance separation and purification processes in biomanufacturing. Our products are available in North America, Europe, and Asia, supporting separation and purification processes in biomanufacturing operations worldwide.

Unified Separation Technologies Flash Chromatography Media and Columns

Unified Separation Technologies has developed a new type of magnetic mesoporous material that combines the best features of magnetic and traditional extraction methods. These materials make extraction easier and more reliable through automation and improved consistency while also offering the benefits of mesoporous core-shell structures, such as size filtering and high sample capacity. They maintain key qualities of conventional solid-phase extraction (SPE) materials, like pore size and surface area, but allow for direct separation of organic substances from liquids using a magnetic field. This innovation overcomes common problems with column extraction, like inconsistent results and clogging, making it ideal for efficiently separating, purifying, and handling small organic molecules in biological samples.



Flash columns packed with irregular silica

Features

- Acid-washed silica for enhanced cleanliness and improved separation
- Reduced fines to lower column back pressure and prevent frit clogging
- Fully automated, optimized packing process for consistent performance
- Great performance with cost-effective value

Column Specifications

- Average particle size: 40-60µm
- Pore size: 60 Å
- Water content: 3-5%
- Surface area: 480 m²/g
- Offers two types of columns: sealed cap and removable cap

Order Information

Media	Specifications	Qty/Pkg	Cat. No.
Silica	Flash silica column 50µm; 60Å; 4g	20ea/pk	UFHSS500004-S
	Flash silica column 50µm; 60Å; 12g	20ea/pk	UFHSS500012-S
	Flash silica column 50µm; 60Å; 20g	20ea/pk	UFHSS500020-S
	Flash silica column 50µm; 60Å; 40g	10ea/pk	UFHSS500040-S
	Flash silica column 50µm; 60Å; 80g	5ea/pk	UFHSS500080-S
	Flash silica column 50µm; 60Å; 120g	5ea/pk	UFHSS500120-S
	Flash silica column 50µm; 60Å; 220g	2ea/pk	UFHSS500220-S
	Flash silica column 50µm; 60Å; 330g	1ea/pk	UFHSS500330-S
	Flash silica column 50µm; 60Å; 800g	1ea/pk	UFHSS500800-S
	Flash silica column 50µm; 60Å; 1500g	1ea/pk	UFHSS501500-S
	Flash silica column 50µm; 60Å; 5000g	1ea/pk	UFHSS505000-S

Flash columns packed with high purity spherical silica

Unified Separation Technologies has developed a new type of magnetic mesoporous material that combines the best features of magnetic and traditional extraction methods. These materials make extraction easier and more reliable through automation and improved consistency while also offering the benefits of mesoporous core-shell structures, such as size filtering and high sample capacity. They maintain key qualities of conventional solid-phase extraction (SPE) materials, like pore size and surface area, but allow for direct separation of organic substances from liquids using a magnetic field. This innovation overcomes common problems with column extraction, like inconsistent results and clogging, making it ideal for efficiently separating, purifying, and handling small organic molecules in biological samples.



Features

- Ultra-pure silica to minimize peak tailing and irreversible adsorption
- Enhanced resolution to achieve optimal separation
- Improved recovery for polar compounds
- Narrow particle size distribution to ensure low backpressure and consistent flow
- Easy cleaning for reusability and extended column lifetime

Column Specifications

- Average particle size: 40-60µm
- Pore size: 60 Å
- Water content: 3-5%
- Surface area: 480 m²/g
- Offers two types of columns: sealed cap and removable cap

Particle (µm)	Pore Size (Å)	Water Content (%)	Surface Area (m ² /g)
15	60	3-5%	480
	100		450
	120		320
30	60		480
	100		450
	120		320

Purification Performance comparison

○ Better performance

Flash Purification Conditions:

Sample: Ciclosporin

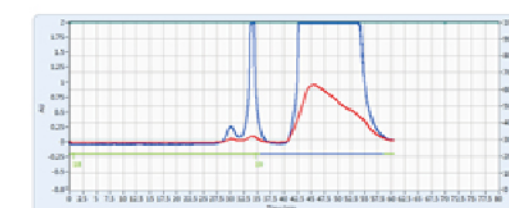
Mobile Phase: Ethyl acetate

Flow Rate: 8mL/min

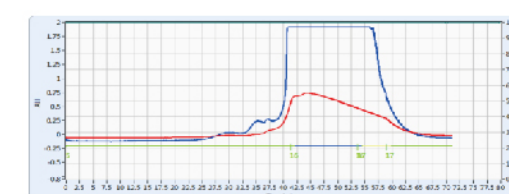
Sample Loading: 0.5g in 5mL Ethyl acetate

Detector: UV@ 214 and 254 nm

	Purity	Yield
Bonnasil-BS Spherical Silica30, 100Å, 20g	99.2%	86%
Brand F Spherical Silica30, 100Å, 20g	98.7%	61%



Bonnasil-BS Spherical Silica

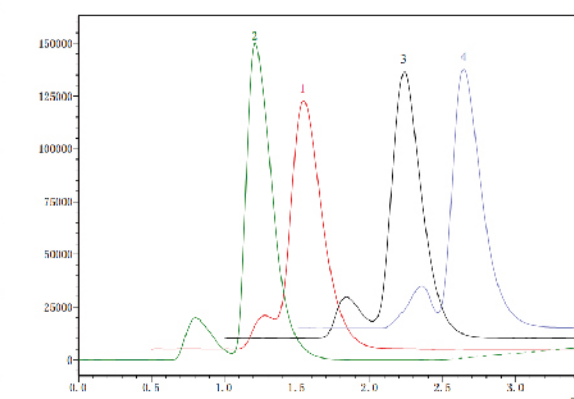


Brand F Spherical Silica

○ Lower backpressure and faster separation

Spherical particles produce better separation than irregular particles (column 2 vs. column 1, column 2 vs. column 4). Our spherical silica shows lower backpressure and faster separation compared to the other vendor's product with larger silica particle sizes (column 2 vs. column 3)

Silica	Flow Rate (mL/min)	Backpressure (Bar)
Unified Separation 50 µm irregular silica	100	5-7
Unified Separation 15µm spherical silica	100	9-10
Brand F 30 µm spherical silica	100	7-14
Brand K 15µm irregular silica	100	13-29
		Exceed the limit



○ Lower residue and enhanced recovery yield

Flash Purification Conditions

Sample: Brilliant Blue G 5mg/mL

Injection volume: 2mL

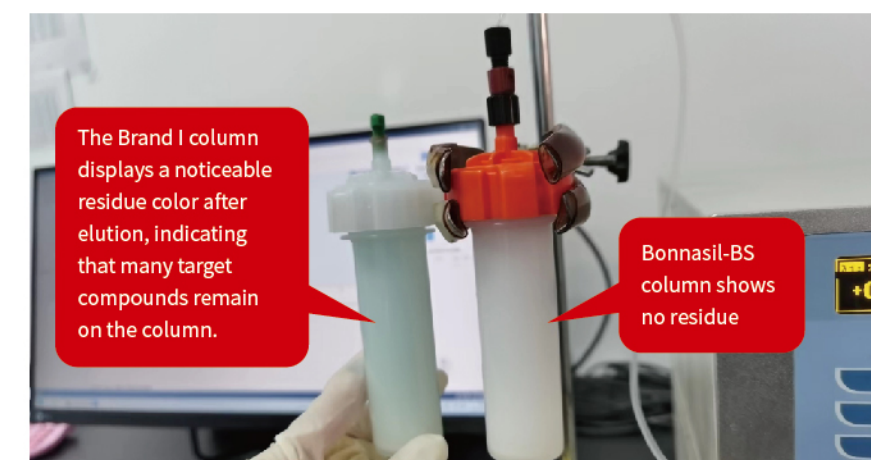
Column:

Bonnasil-BS C18 silica 30m, 120Å, 20g

Brand I-Spherical silica 30m, 120Å, 20g

Mobile Phase: Methanol

Flow Rate: 25mL/min



The Brand I column displays a noticeable residue color after elution, indicating that many target compounds remain on the column.

Bonnasil-BS column shows no residue

Order Information

Media	Specification	Qty/Pkg	Cat. No.
Spherical Silica	Flash Silica column; 30µm; 60Å; 4g	20ea/pkg	UFHS300004-S
	Flash Silica column; 30µm; 60Å; 12g	20ea/pkg	UFHS300012-S
	Flash Silica column; 30µm; 60Å; 20g	20ea/pkg	UFHS300020-S
	Flash Silica column; 30µm; 60Å; 40g	10ea/pkg	UFHS300040-S
	Flash Silica column; 30µm; 60Å; 80g	5ea/pkg	UFHS300080-S
	Flash Silica column; 30µm; 60Å; 120g	5ea/pkg	UFHS300120-S
	Flash Silica column; 30µm; 60Å; 220g	2ea/pkg	UFHS300220-S
	Flash Silica column; 30µm; 60Å; 330g	1ea/pkg	UFHS300330-S
C18	Flash C18 column; 30µm; 120Å; 4g	20ea/pkg	UFHC300004-2
	Flash C18 column; 30µm; 120Å; 12g	20ea/pkg	UFHC300012-2
	Flash C18 column; 30µm; 120Å; 20g	20ea/pkg	UFHC300020-2
	Flash C18 column; 30µm; 120Å; 40g	10ea/pkg	UFHC300040-2
	Flash C18 column; 30µm; 120Å; 80g	5ea/pkg	UFHC300080-2
	Flash C18 column; 30µm; 120Å; 120g	5ea/pkg	UFHC300120-2
	Flash C18 column; 30µm; 120Å; 220g	2ea/pkg	UFHC300220-2
	Flash C18 column; 30µm; 120Å; 330g	1ea/pkg	UFHC300330-2
AQ C18	Flash AQ C18 column; 30µm; 120Å; 4g	20ea/pkg	UFHCA300004-2
	Flash AQ C18 column; 30µm; 120Å; 12g	20ea/pkg	UFHCA300012-2
	Flash AQ C18 column; 30µm; 120Å; 20g	20ea/pkg	UFHCA300020-2
	Flash AQ C18 column; 30µm; 120Å; 40g	10ea/pkg	UFHCA300040-2
	Flash AQ C18 column; 30µm; 120Å; 80g	5ea/pkg	UFHCA300080-2
	Flash AQ C18 column; 30µm; 120Å; 120g	5ea/pkg	UFHCA300120-2
	Flash AQ C18 column; 30µm; 120Å; 220g	2ea/pkg	UFHCA300220-2
	Flash AQ C18 column; 30µm; 120Å; 330g	1ea/pkg	UFHCA300330-2

Media	Specification	Qty/Pkg	Cat. No.
CH C18	Flash CH C18 column; 30µm; 60Å; 4g	20ea/pkg	UFHHC300004-2
	Flash CH C18 column; 30µm; 60Å; 12g	20ea/pkg	UFHHC300012-2
	Flash CH C18 column; 30µm; 60Å; 20g	20ea/pkg	UFHHC300020-2
	Flash CH C18 column; 30µm; 60Å; 40g	10ea/pkg	UFHHC300040-2
	Flash CH C18 column; 30µm; 60Å; 80g	5ea/pkg	UFHHC300080-2
	Flash CH C18 column; 30µm; 60Å; 120g	5ea/pkg	UFHHC300120-2
	Flash CH C18 column; 30µm; 60Å; 220g	2ea/pkg	UFHHC300220-2
	Flash CH C18 column; 30µm; 60Å; 330g	1ea/pkg	UFHHC300330-2
HILIC	Flash HILIC column; 30µm; 120Å; 4g	20ea/pkg	UFHH300004-2
	Flash HILIC column; 30µm; 120Å; 12g	20ea/pkg	UFHH300012-2
	Flash C18 column; 30µm; 120Å; 20g	20ea/pkg	UFHH300020-2
	Flash HILIC column; 30µm; 120Å; 40g	10ea/pkg	UFHH300040-2
	Flash HILIC column; 30µm; 120Å; 80g	5ea/pkg	UFHH300080-2
	Flash HILIC column; 30µm; 120Å; 120g	5ea/pkg	UFHH300120-2
	Flash HILIC column; 30µm; 120Å; 220g	2ea/pkg	UFHH300220-2
	Flash HILIC column; 30µm; 120Å; 330g	1ea/pkg	UFHH300330-2