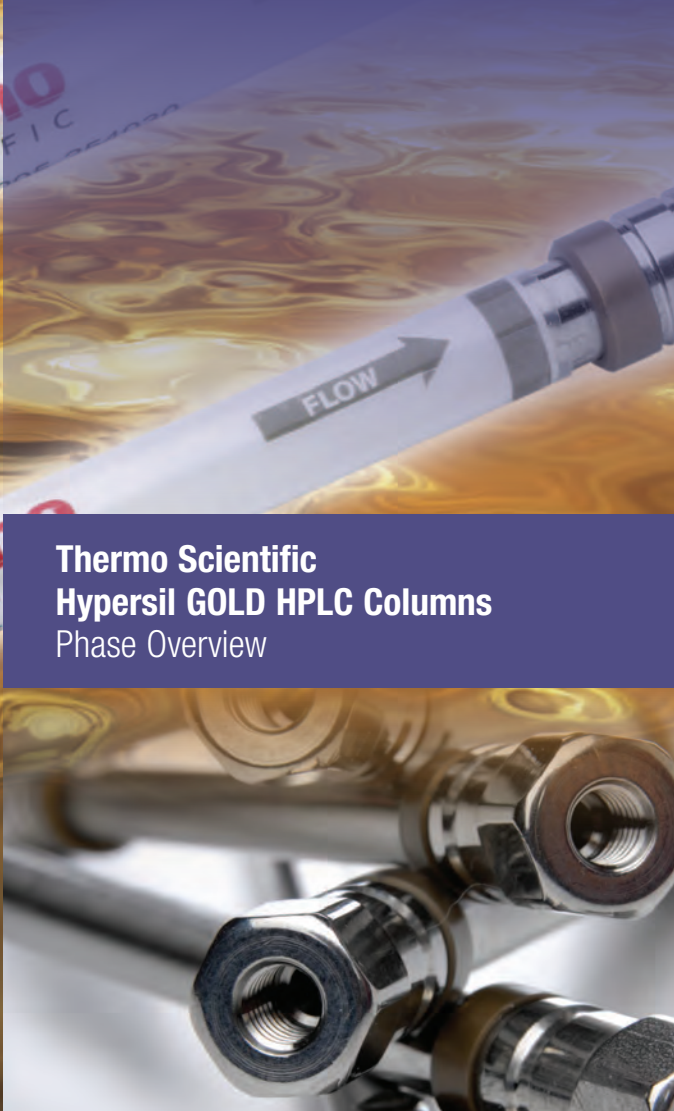
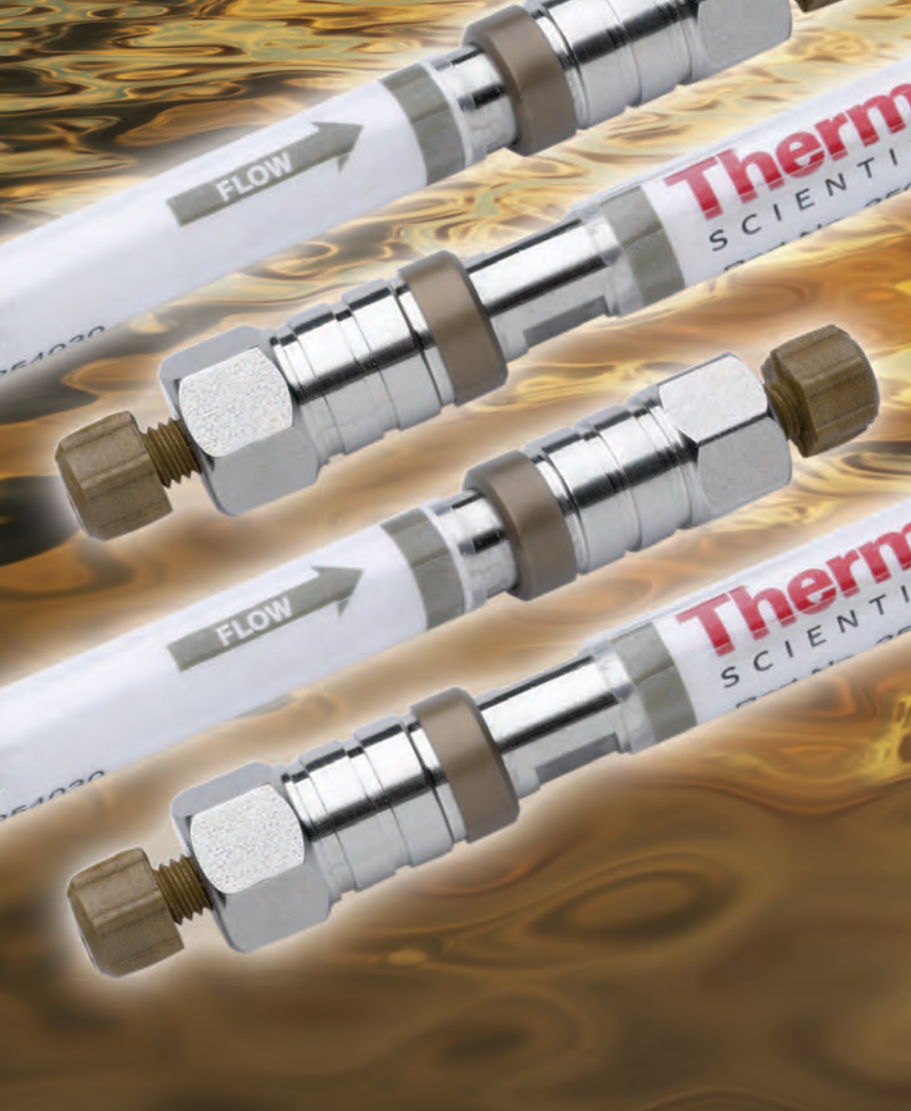




Thermo Scientific
Hypersil GOLD HPLC Columns
Phase Overview

Outstanding peak shape
for your separations

Thermo
SCIENTIFIC

Phase Overview

Designed for improved chromatography, Thermo Scientific™ Hypersil GOLD™ columns are the culmination of over 35 years of experience in the product development and manufacturing of HPLC media and columns.

The range and capabilities of this state-of-the-art family of columns, with numerous chemistries and a range of particle sizes and hardware formats meet the challenges of modern chromatography.

The highly pure Hypersil GOLD silica is manufactured, bonded and packed in ISO 9001:2008 accredited facilities, operating under strict protocols using robust procedures and extensive quality control testing. The manufacturing and bonding process creates an even surface with very few silanols leading to reduced secondary interactions. This ensures consistent performance, column after column.



Phase Details

Phase Name	1.9 µm	3 µm	5 µm	12 µm	Carbon Load (%)	USP Category
Hypersil GOLD	✓	✓	✓	✓	10	L1
Hypersil GOLD C8	✓	✓	✓		8	L7
Hypersil GOLD C4	✓	✓	✓		5	L26
Hypersil GOLD aQ	✓	✓	✓		12	L1
Hypersil GOLD PFP	✓	✓	✓		8	L43
Hypersil GOLD Phenyl	✓	✓	✓		8	L11
Hypersil GOLD CN	✓	✓	✓		4	L10
Hypersil GOLD Amino	✓	✓	✓		2	L8
Hypersil GOLD AX	✓	✓	✓		6	–
Hypersil GOLD SAX	✓	✓	✓		2.5	L14
Hypersil GOLD Silica	✓	✓	✓		–	L3
Hypersil GOLD HILIC	✓	✓	✓		6	–

Particle Details

Particle Diameter (µm)	Pore Diameter (Å)	Surface Area (m ² /g)
1.9	175	220
3	175	220
5	175	220
12	175	220

pH Stability

Phases	pH Range
Hypersil GOLD	2 to 11
Hypersil GOLD C8, Hypersil GOLD aQ	2 to 9
Hypersil GOLD C4, Hypersil GOLD PFP, Hypersil GOLD Phenyl, Hypersil GOLD CN, Hypersil GOLD Amino, Hypersil GOLD AX, Hypersil GOLD SAX, Hypersil GOLD Silica, Hypersil GOLD HILIC	2 to 8

Temperature Stability

Maximum temperature 60 °C
Based on testing on Hypersil GOLD

Flow Rate, Injection Volume and Backpressure

Particle Diameter (µm)	Column ID (mm)	Column Format	Optimum Flow Rate (mL/min)	Optimum Inj. Volume (µL)	Backpressure Rating (Bar)
1.9	1.0	Javelin HTS	0.1	0.2	400
	1.0	UHPLC	0.1	0.2	1250
	2.1	UHPLC	0.5	1	1250
	3.0	UHPLC	1.0	2	1250
	4.6	UHPLC	2.5	5	1250
3	1.0	HPLC	0.05	1	400
	2.1	HPLC	0.25	5	400
	3.0	HPLC	0.5	10	400
	4.0	HPLC	0.9	15	400
	4.6	HPLC	1.2	20	400
5	2.1	HPLC	0.2	5	400
	3.0	HPLC	0.4	10	400
	4.0	Javelin HTS	0.8	15	400
	4.0	HPLC	0.8	15	400
	4.6	HPLC	1.0	20	400
	10	Preparative	5.0	100	340
	21	Preparative	20	400	340
	30	Preparative	45	800	200
	50	Preparative	120	2500	200
12	10	Preparative	5.0	100	340
	21	Preparative	20	400	340
	30	Preparative	45	800	200
	50	Preparative	120	2500	200

Shipping Solvents

Phases	Solvent
Hypersil GOLD, Hypersil GOLD C8, Hypersil GOLD C4, Hypersil GOLD aQ, Hypersil GOLD PFP, Hypersil GOLD Phenyl	Acetonitrile : Water (50:50 or 60:40 v/v)
Hypersil GOLD CN, Hypersil GOLD Amino, Hypersil GOLD AX, Hypersil GOLD SAX, Hypersil GOLD Silica	Ethanol
Hypersil GOLD HILIC	Acetonitrile : Water (80:20 v/v)

Cleaning Procedures

Before starting ensure that no buffers or samples are present on the column and that the mobile phase used prior to cleaning is miscible with the first wash solvent.

Using 50% of the working flow rate, flush the column with 40 to 60 column volumes of each of the solvents below in the order shown.

After cleaning, ensure that the mobile phase is miscible with the last solvent in the column.

Mode	Phases	Procedure
Reversed Phase	Hypersil GOLD, Hypersil GOLD C8, Hypersil GOLD C4, Hypersil GOLD aQ, Hypersil GOLD PFP, Hypersil GOLD Phenyl	1. HPLC grade water; inject 4 aliquots of 200 µL DMSO during this flush 2. Methanol 3. Chloroform 4. Methanol
Normal Phase	Hypersil GOLD CN, Hypersil GOLD Amino, Hypersil GOLD Silica	1. Tetrahydrofuran 2. Methanol 3. Tetrahydrofuran 4. Methylene chloride 5. Benzene-free n-hexane
Anion Exchange	Hypersil GOLD AX, Hypersil GOLD SAX	1. HPLC grade water 2. Gradient of 50 mM to 1 M appropriate buffer solution 3. HPLC grade water 4. Methanol 5. Chloroform
HILIC	Hypersil GOLD HILIC	1. 90% water / 10% acetonitrile 2. 50% water / 50% acetonitrile



Phase Properties

Hypersil GOLD HPLC columns are available in 12 different chemistries to optimize separations and maximize productivity. The extensive range of Hypersil GOLD columns offers chromatographers outstanding peak shape for reversed phase, ion exchange, HILIC or normal phase chromatography. With all 12 phases being available with 1.9 μm particle size, Hypersil GOLD columns offer chromatographers flexibility in choosing the correct column, whether they are using conventional or ultra-high pressure LC systems.

Hypersil GOLD	Hypersil GOLD HPLC columns provide excellent peak shape for all analyte types
Hypersil GOLD C8	Hypersil GOLD C8 columns provide similar selectivity to C18 columns, but with reduced retention
Hypersil GOLD C4	Hypersil GOLD C4 columns provide similar selectivity to C18 and C8 columns, but with reduced retention
Hypersil GOLD aQ	Hypersil GOLD aQ polar endcapped C18 columns are stable in 100% aqueous mobile phase and provide enhanced retention and resolution of polar analytes
Hypersil GOLD PFP	Hypersil GOLD PFP (perfluorinated phenyl) columns offer alternative selectivity. The fluorine atoms around the phenyl ring enhance pi-pi interactions with aromatic molecules
Hypersil GOLD Phenyl	Hypersil GOLD phenyl columns offer excellent retention and unique selectivity for aromatic analytes
Hypersil GOLD CN	Hypersil GOLD CN columns provide alternative selectivity with lower hydrophobicity and can also be used for normal phase separations
Hypersil GOLD Amino	Hypersil GOLD Amino columns can be used in reversed phase, normal phase, ion exchange and HILIC and are particularly useful for separating carbohydrates
Hypersil GOLD AX	Hypersil GOLD AX columns provide separation of smaller proteins, peptides, anionic species and polar molecules
Hypersil GOLD SAX	Hypersil GOLD SAX columns have a quarternary amine ion exchange ligand ideally suited to separating small polar organic analytes in aqueous mobile phases
Hypersil GOLD Silica	Hypersil GOLD Silica columns are a powerful and efficient tool for the chromatography of non-polar and moderately polar organic compounds by normal phase chromatography
Hypersil GOLD HILIC	Hypersil GOLD HILIC columns provide enhanced retention of polar and hydrophilic analytes that are problematic using reversed phase columns



Ordering information

Particle Size (µm)	Description	Length (mm)	ID (mm)	GOLD	C8	PFP	aQ	C4	CN
1.9	UHPLC Column	20	2.1	25002-022130	25202-022130	25402-022130	25302-022130	—	—
			30	25002-031030	—	—	—	—	—
		30	2.1	25002-032130	25202-032130	25402-032130	25302-032130	—	—
			1	25002-051030	25202-051030	25402-051030	25302-051030	—	—
			2.1	25002-052130	25202-052130	25402-052130	25302-052130	25502-052130	25802-052130
		50	3	25002-053030	25202-053030	25402-053030	25302-053030	—	—
			4.6	25002-054630	25202-054630	25402-054630	25302-054630	—	—
		100	1	25002-101030	25202-101030	25402-101030	25302-101030	—	—
			2.1	25002-102130	25202-102130	25402-102130	25302-102130	25502-102130	25802-102130
			3	25002-103030	25202-103030	25402-103030	25302-103030	—	—
		150	2.1	25002-152130	25202-152130	25402-152130	25302-152130	25502-152130	25802-152130
		200	2.1	25002-202130	25202-202130	25402-202130	25302-202130	25502-202130	25802-202130
3	Drop-in-Guard (4/pk)	10	1	25003-011001	25203-011001	25403-011001	25303-011001	25503-011001	25803-011001
			2.1	25003-012101	25203-012101	25403-012101	25303-012101	25503-012101	25803-012101
			3	25003-013001	25203-013001	25403-013001	25303-013001	25503-013001	25803-013001
			4.0/4.6	25003-014001	25203-014001	25403-014001	25303-014001	25503-014001	25803-014001
	HPLC Column	30	2.1	25003-032130	25203-032130	25403-032130	25303-032130	25503-032130	25803-032130
			3	25003-033030	25203-033030	25403-033030	25303-033030	—	—
			4.6	25003-034630	25203-034630	25403-034630	25303-034630	25503-034630	25803-034630
		50	2.1	25003-052130	25203-052130	25403-052130	25303-052130	25503-052130	25803-052130
			3	25003-053030	25203-053030	25403-053030	25303-053030	—	—
			4	25003-054030	25203-054030	25403-054030	25303-054030	—	—
			4.6	25003-054630	25203-054630	25403-054630	25303-054630	—	—
		100	1	25003-101030	25203-101030	25403-101030	25303-101030	—	—
			2.1	25003-102130	25203-102130	25403-102130	25303-102130	25503-102130	25803-102130
			3	25003-103030	25203-103030	25403-103030	25303-103030	25503-103030	25803-103030
			4	25003-104030	25203-104030	25403-104030	25303-104030	—	—
			4.6	25003-104630	25203-104630	25403-104630	25303-104630	25503-104630	25803-104630
		150	1	25003-151030	25203-151030	25403-151030	25303-151030	25503-151030	25803-151030
			2.1	25003-152130	25203-152130	25403-152130	25303-152130	25503-152130	25803-152130
			3	25003-153030	25203-153030	25403-153030	25303-153030	25503-153030	25803-153030
			4	25003-154030	25203-154030	25403-154030	25303-154030	—	—
			4.6	25003-154630	25203-154630	25403-154630	25303-154630	25503-154630	25803-154630
5	Drop-in-Guard (4/pk)	10	2.1	25005-012101	25205-012101	25405-012101	25305-012101	25505-012101	25805-012101
			3	25005-013001	25205-013001	25405-013001	25305-013001	25505-013001	25805-013001
			4.0/4.6	25005-014001	25205-014001	25405-014001	25305-014001	25505-014001	25805-014001
		HPLC Column	30	2.1	25005-032130	—	—	—	—
				3	25005-033030	—	—	—	—
				4.6	25005-034630	—	—	—	—
		50	2.1	25005-052130	25205-052130	25405-052130	25305-052130	25505-052130	25805-052130
			3	25005-053030	25205-053030	25405-053030	25305-053030	—	—
			4.6	25005-054630	25205-054630	25405-054630	25305-054630	25505-054630	25805-054630
		100	2.1	25005-102130	25205-102130	25405-102130	25305-102130	25505-102130	25805-102130
			3	25005-103030	25205-103030	25405-103030	25305-103030	25505-103030	25805-103030
			4.6	25005-104630	25205-104630	25405-104630	25305-104630	25505-104630	25805-104630
		150	2.1	25005-152130	25205-152130	25405-152130	25305-152130	25505-152130	25805-152130
			3	25005-153030	25205-153030	25405-153030	25305-153030	—	—
			4	25005-154030	25205-154030	25405-154030	25305-154030	—	—
			4.6	25005-154630	25205-154630	25405-154630	25305-154630	25505-154630	25805-154630
		250	2.1	25005-252130	25205-252130	25405-252130	25305-252130	25505-252130	25805-252130
			3	25005-253030	25205-253030	25405-253030	25305-253030	25505-253030	25805-253030
			4	25005-254030	25205-254030	25405-254030	25305-254030	25505-254030	25805-254030
			4.6	25005-254630	25205-254630	25405-254630	25305-254630	25505-254630	25805-254630

Ordering information

Particle Size (µm)	Description	Length (mm)	ID (mm)	Phenyl	Amino	AX	SAX	Silica	HILIC
1.9	UHPLC Column	20	2.1	—	—	—	—	—	—
			3	—	—	—	—	—	—
		50	2.1	—	—	—	—	—	—
			1	—	—	—	—	—	—
			2.1	25902-052130	25702-052130	26102-052130	26302-052130	25102-052130	26502-052130
		100	3	—	—	—	—	—	—
			4.6	—	—	—	—	—	—
			1	—	—	—	—	—	—
			2.1	25902-102130	25702-102130	26102-102130	26302-102130	25102-102130	26502-102130
			3	—	—	—	—	—	—
3	Drop-in-Guard (4/pk)	10	2.1	25902-152130	25702-152130	26102-152130	26302-152130	25102-152130	26502-152130
			3	—	—	—	—	—	—
			2.1	25902-202130	25702-202130	26102-202130	26302-202130	25102-202130	26502-202130
			3	—	—	—	—	—	—
		30	1	25903-011001	25703-011001	26103-011001	26303-011001	25103-011001	26503-011001
			2.1	25903-012101	25703-012101	26103-012101	26303-012101	25103-012101	26503-012101
			3	25903-013001	25703-013001	26103-013001	26303-013001	25103-013001	26503-013001
			4.0/4.6	25903-014001	25703-014001	26103-014001	26303-014001	25103-014001	26503-014001
		50	2.1	25903-032130	25703-032130	26103-032130	26303-032130	25103-032130	26503-032130
			3	—	—	—	—	—	—
			4.6	25903-034630	25703-034630	26103-034630	26303-034630	25103-034630	26503-034630
		100	2.1	25903-052130	25703-052130	26103-052130	26303-052130	25103-052130	26503-052130
			3	—	—	—	—	—	—
			4	—	—	—	—	—	—
			4.6	—	—	—	—	—	—
		150	1	—	—	—	—	—	—
			2.1	25903-102130	25703-102130	26103-102130	26303-102130	25103-102130	26503-102130
			3	25903-103030	25703-103030	26103-103030	26303-103030	25103-103030	26503-103030
			4	—	—	—	—	—	—
			4.6	25903-104630	25703-104630	26103-104630	26303-104630	25103-104630	26503-104630
5	Drop-in-Guard (4/pk)	10	1	25903-151030	25703-151030	26103-151030	26303-151030	25103-151030	26503-151030
			2.1	25903-152130	25703-152130	26103-152130	26303-152130	25103-152130	26503-152130
			3	25903-153030	25703-153030	26103-153030	26303-153030	25103-153030	26503-153030
			4	—	—	—	—	—	—
		30	4.6	25903-154630	25703-154630	26103-154630	26303-154630	25103-154630	26503-154630
			2.1	25905-012101	25705-012101	26105-012101	26305-012101	25105-012101	26505-012101
			3	25905-013001	25705-013001	26105-013001	26305-013001	25105-013001	26505-013001
			4.0/4.6	25905-014001	25705-014001	26105-014001	26305-014001	25105-014001	26505-014001
		50	2.1	—	—	—	—	—	—
			3	—	—	—	—	—	—
			4.6	—	—	—	—	—	—
		100	2.1	25905-052130	25705-052130	26105-052130	26305-052130	25105-052130	26505-052130
			3	—	—	—	—	—	—
			4.6	25905-054630	25705-054630	26105-054630	26305-054630	25105-054630	26505-054630
		150	2.1	25905-102130	25705-102130	26105-102130	26305-102130	25105-102130	26505-102130
			3	25905-103030	25705-103030	26105-103030	26305-103030	25105-103030	26505-103030
			4.6	25905-104630	25705-104630	26105-104630	26305-104630	25105-104630	26505-104630
		250	2.1	25905-152130	25705-152130	26105-152130	26305-152130	25105-152130	26505-152130
			3	—	—	—	—	—	—
			4	—	—	—	—	—	—
			4.6	25905-154630	25705-154630	26105-154630	26305-154630	25105-154630	26505-154630
	HPLC Column	30	2.1	—	—	—	—	—	—
			3	—	—	—	—	—	—
			4.6	—	—	—	—	—	—
		50	2.1	25905-052130	25705-052130	26105-052130	26305-052130	25105-052130	26505-052130
			3	—	—	—	—	—	—
		100	4.6	25905-054630	25705-054630	26105-054630	26305-054630	25105-054630	26505-054630
			2.1	25905-102130	25705-102130	26105-102130	26305-102130	25105-102130	26505-102130
			3	25905-103030	25705-103030	26105-103030	26305-103030	25105-103030	26505-103030
		150	4.6	25905-104630	25705-104630	26105-104630	26305-104630	25105-104630	26505-104630
			2.1	25905-152130	25705-152130	26105-152130	26305-152130	25105-152130	26505-152130
		250	3	—	—	—	—	—	—
			4	—	—	—	—	—	—
			4.6	25905-154630	25705-154630	26105-154630	26305-154630	25105-154630	26505-154630
		250	2.1	25905-252130	25705-252130	26105-252130	26305-252130	25105-252130	26505-252130
			3	25905-253030	25705-253030	26105-253030	26305-253030	25105-253030	26505-253030
		250	4	25905-254030	25705-254030	26105-254030	26305-254030	25105-254030	26505-254030
			4.6	25905-254630	25705-254630	26105-254630	26305-254630	25105-254630	26505-254630

Description	Length (mm)	ID (mm)	Part Number
UNIGUARD Guard Cartridge Holder	10	1.0	851-00
		2.1	852-00
		3.0	852-00
		4.0/4.6	850-00

Ordering information

Particle Size (µm)	Description	Length (mm)	ID (mm)	GOLD	aQ	PFP
5	Preparative Guard Cartridge (3/pk)	10	10	25005-019023	25305-019023	25405-019023
		20	20	25005-029223	25305-029223	25405-029223
	Preparative HPLC Column	50	10	25005-059070	25305-059070	25405-059070
			21	25005-059270	25305-059270	25405-059270
			30	25005-059370	25305-059370	25405-059370
			50	25005-059570	25305-059570	25405-059570
			100	25005-109070	25305-109070	25405-109070
			21	25005-109270	25305-109270	25405-109270
			30	25005-109370	25305-109370	25405-109370
			50	25005-109570	25305-109570	25405-109570
		150	10	25005-159070	25305-159070	25405-159070
			21	25005-159270	25305-159270	25405-159270
			30	25005-159370	25305-159370	25405-159370
			50	25005-159570	25305-159570	25405-159570
		250	10	25005-259070	25305-259070	25405-259070
			21	25005-259270	25305-259270	25405-259270
			30	25005-259370	25305-259370	25405-259370
			50	25005-259570	25305-259570	25405-259570
12	Preparative Guard Cartridge (3/pk)	10	10	25012-019023	—	—
		20	20	25012-029223	—	—
	Preparative HPLC Column	50	10	25012-059070	—	—
			21	25012-059270	—	—
			30	25012-059370	—	—
			50	25012-059570	—	—
		100	10	25012-109070	—	—
			21	25012-109270	—	—
			30	25012-109370	—	—
			50	25012-109570	—	—
		150	10	25012-159070	—	—
			21	25012-159270	—	—
			30	25012-159370	—	—
			50	25012-159570	—	—
		250	10	25012-259070	—	—
			21	25012-259270	—	—
			30	25012-259370	—	—
			50	25012-259570	—	—

Description	Length (mm)	ID (mm)	Part Number
Preparative Guard Cartridge Holder	10	10	C-1000
	20	20	F1403

For more information visit: www.thermoscientific.com/hypersilgold

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