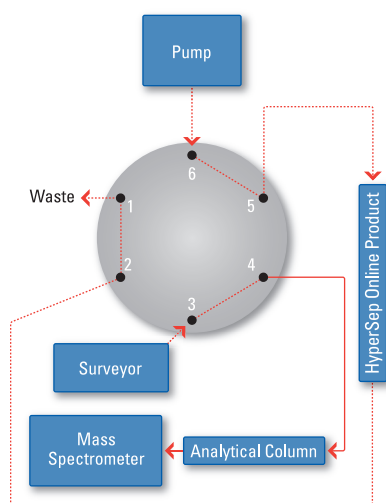


Improve efficiency in the lab with our comprehensive range of Thermo Scientific Online SPE Products

- Available in multiple formats
- Compatible with conventional HPLC systems

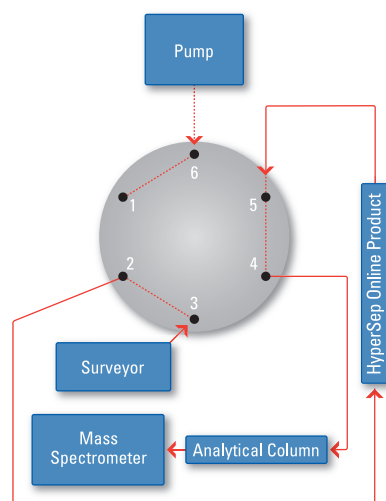
Thermo Scientific HyperSep Online SPE Products

Clean-up and concentrate target analytes in minutes



LOAD POSITION

The diagrams show the typical load (top) and elution (bottom) positions for the HyperSep Online SPE setup.



ELUTION POSITION

Multiple Formats

Thermo Scientific Online SPE Products have been designed to clean-up and concentrate target analytes in minutes. The products are available in different formats and utilize popular Thermo Scientific HyperSep SPE materials such as the Thermo Scientific HyperSep Retain polymeric range of materials and Thermo Scientific HyperSep Hypercarb for polar analyte retention. Our range of Online SPE formats make it possible to analyse specific analytes in a sample matrix when used in conjunction with an appropriate HPLC column such as the Thermo Scientific Hypersil GOLD range.

- Effective removal of contaminants such as proteins from samples
- Compatible with conventional HPLC systems such as the Thermo Scientific Surveyor
- Fast and effective clean-up and concentration of target compounds

Comprehensive Offering

The range of Thermo Scientific Online SPE products are available in three configurations:

- UNIGUARD™ Direct-Connection Guard Cartridge Holder and Cartridge
- Javelin Direct-Connection Guard Columns
- HPLC Column hardware and fittings

All products are available with the following HyperSep™ SPE chemistries:

- HyperSep Retain™ PEP – for retention of polar and non-polar analytes
- HyperSep Retain-CX – for retention of basic and non-polar analytes
- HyperSep Retain-AX – for retention of acidic and non-polar analytes
- HyperSep Hypercarb™ – for retention of extremely polar analytes

A typical analysis would involve the following:

- An isocratic pump that is used as a standalone to load sample at a rate of up to 4 mL/min
- A binary pump that is used for the elution step and to keep a constant and optimized 0.4 mL/min flow through the HPLC column
- A HPLC system such as the Thermo Scientific Surveyor
- A 6 or 10 port switching valve to divert interferences to a waste line
- A mass spectrometer would be used to maximize sensitivity and selectivity

Choosing the Right Format

- UNIGUARD Direct-Connection Guard Cartridge Holder and Cartridge – convenient reusable product that attaches directly to the switching valve like a HPLC column
- Javelin Direct-Connection Guard Column – finger-tight design for convenience and maximum efficiency
- HPLC Column – traditional HPLC column fittings and hardware

Analytical Conditions

Analysis will typically involve a fast gradient where run time, including re-equilibration of the column, is approx. 3 minutes. A typical gradient profile is shown to the right:

Mobile Phase A:	Acetonitrile with 0.5% Formic acid
Mobile Phase B:	Water with 0.5% Formic acid

The mobile phase conditions above are ideal for basic drugs. For acidic drugs, use ammonium hydroxide.

Gradient Profile

Time (min)	HPLC Gradient Flow 0.4 mL/min		Valve Position
	A	B	
0	5%	95%	Load
0.5	5%	95%	Switch Load to Elute
1.0	95%	5%	
2.5	95%	5%	Switch Elute to Load
3.0	5%	95%	Load

Ordering Information



Thermo Scientific UNIGUARD Direct-Connection Cartridges

Description	Quantity	Length (mm)	2.1 mm ID	3.0 mm ID
Retain PEP	4	10	60311-201	60311-202
Retain-CX	4	10	60311-301	60311-302
Retain-AX	4	10	60311-401	60311-402
Hypercarb	4	10	60311-501	60311-502
UNIGUARD Direct-Connection Drop-in Guard Cartridge Holder			852-00	852-00



Thermo Scientific Javelin Direct-Connection Columns

Description	Quantity	Length (mm)	2.1 mm ID	3.0 mm ID
Retain PEP	4	10	60310-201	60310-202
Retain-CX	4	10	60310-301	60310-302
Retain-AX	4	10	60310-401	60310-402
Hypercarb	4	10	60310-501	60310-502



Thermo Scientific HPLC Columns

Description	Quantity	Length (mm)	2.1 mm ID	3.0 mm ID
Retain PEP	1	20	60312-201	60312-202
Retain-CX	1	20	60312-301	60312-302
Retain-AX	1	20	60312-401	60312-402
Hypercarb	1	20	60312-501	60312-502

For more information, visit the **Chromatography Resource Center** at www.thermo.com/columns

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