

GERSTEL
certified **SUPPLIES**



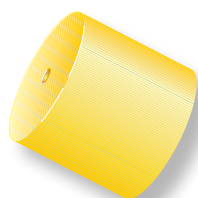
GRAPHPACK



GRAPHPACK® 2M connection technology

For the rapid and economical connection of capillary columns to GC Inlets and Detectors.

The components of the GRAPHPACK 2M connection technology are the GRAPHPACK 2M ferrule, the GRAPHPACK 2M adapter and the GRAPHPACK nut.



GRAPHPACK 2M ferrule

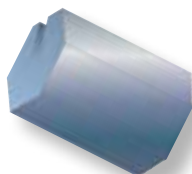
The GRAPHPACK 2M ferrule is a cylindrical metal cartridge packed with graphite.

Advantages

- Rapid and reliable installation/ changing of capillary columns.
- Rapid mounting and positioning of the ferrules on the capillary column outside the oven.
- Leak-free connections are achieved without excessive tightening.
- Connections remain leak-free with temperature cycling.
- Self-centering of the ferrule on the GRAPHPACK 2M adapter.
- The capillary column is always centered in the inlet or detector.
- No damage to column coating.
- Economical, no more than two ferrules are required for the life of a column.

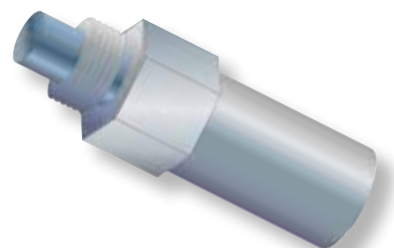
GRAPHPACK 2M Adapter

Available for all column outside diameters between 0.2 mm and 0.8 mm.



GRAPHPACK nut

A slotted nut for securing the column to all GRAPHPACK adapters.



Column OD / ID **Part No.**

GRAPHPACK 2M ferrules

1 package (10 units)

0.20 mm / ≤ 0.1 mm	001805-020-00
0.25 mm / ≤ 0.1 mm	001805-025-00
0.31 mm / 0.20 mm	001805-031-00
0.40 mm / 0.25 mm	001805-040-00
0.45 mm / 0.32 mm	001805-045-00
0.70 mm / 0.53 mm	001805-007-00
0.80 mm / 0.27 mm	001805-008-00



GRAPHPACK 2M plug ferrule

1 package (5 units)

0.31 mm / 0.20 mm	011654-031-00
0.45 mm / 0.32 mm	011654-045-00
0.70 mm / 0.53 mm	011654-007-00

GRAPHPACK 2M mounting tool kit

For mounting and positioning of GRAPHPACK 2M ferrules on capillary columns.



Complete kit **006829-000-00**

Spare parts

GRAPHPACK mounting tool for GRAPHPACK 2M ferrules

tool body, without insert

004938-000-00



Column OD / ID

Inserts

≤ 0.31 mm (red)	006828-031-00
0.40 to 0.45 mm (green)	006828-045-00
0.70 to 0.80 mm (black)	006828-008-00



GRAPHPACK nut

for mounting tool
1 package (5 units)

000980-005-00



OD = Outside diameter
ID = Inside diameter

GRAPHPACK® 2M adapters with Swagelok® thread, female

For the conversion of GC systems with Swagelok fittings to GRAPHPACK 2M technology.



with 1/4" Swagelok female thread

Column OD / ID

Part No.

0.31 mm / 0.20 mm	006835-031-00
0.45 mm / 0.32 mm	006835-045-00
0.70 mm / 0.53 mm	006835-007-00



with 1/8" Swagelok female thread

0.31 mm / 0.20 mm	006834-031-00
0.45 mm / 0.32 mm	006834-045-00
0.70 mm / 0.53 mm	006834-007-00



with 1/16" Swagelok female thread

0.31 mm / 0.20 mm	006833-031-00
0.45 mm / 0.32 mm	006833-045-00
0.70 mm / 0.53 mm	006833-007-00

GRAPHPACK 2M adapters with Swagelok® thread, male

For the conversion of GC systems with Swagelok fittings to GRAPHPACK 2M technology.

	Column OD / ID	Part No.
with 1/4" Swagelok male thread	0.31 mm / 0.20 mm	006832-031-00
	0.45 mm / 0.32 mm	006832-045-00
	0.70 mm / 0.53 mm	006832-007-00



with 1/8" Swagelok male thread	0.31 mm / 0.20 mm	006831-031-00
	0.45 mm / 0.32 mm	006831-045-00
	0.70 mm / 0.53 mm	006831-007-00



with 1/16" Swagelok male thread	0.31 mm / 0.20 mm	006830-031-00
	0.45 mm / 0.32 mm	006830-045-00
	0.70 mm / 0.53 mm	006830-007-00



GRAPHPACK® 2M detector adapters

For the low-cost conversion of detector connections of various GC manufacturers to GRAPHPACK 2M connection technology.

Advantages

- Economical, only one sealing technology is used for all detectors.
- No contact with the inside of the detector because of accurate centering.



Agilent Technologies / Hewlett-Packard

HP 5890 A and Series II, Agilent 6850/6890 and Agilent 7820/7890 for FID, NPD

Column OD / ID

Part No.

0.31 mm / 0.20 mm	006508-031-00
0.45 mm / 0.32 mm	006508-045-00
0.70 mm / 0.53 mm	006508-007-00

Spare parts

Silver seal; 1 package (5 units)	003962-005-00
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Agilent Technologies / Hewlett-Packard

HP 5890 A and Series II and Agilent 6850/6890 for TCD, FPD

0.45 mm / 0.32 mm	006831-045-00
0.70 mm / 0.53 mm	006831-007-00



Chrompack 9000

0.31 mm / 0.20 mm	006831-031-00
0.45 mm / 0.32 mm	006831-045-00
0.70 mm / 0.53 mm	006831-007-00

Dani Detectors; M4

0.31 mm / 0.20 mm	008189-031-00
0.45 mm / 0.32 mm	008189-045-00
0.70 mm / 0.53 mm	008189-007-00

Spare parts

Silver seal; 1 package (5 units)	001383-005-00
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Fisons Series 8000, Trace, Tremetics, CE 5300, CE 8000

0.31 mm / 0.20 mm	008190-031-00
0.45 mm / 0.32 mm	008190-045-00
0.70 mm / 0.53 mm	008190-007-00

Spare parts

Silver seal; 1 package (5 units)	000976-005-00
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Part No.

O.I. Analytical PID

0.31 mm / 0.20 mm	008005-031-00
0.45 mm / 0.32 mm	008005-045-00
0.70 mm / 0.53 mm	008005-007-00

O.I. Analytical PFPD and XSD

0.31 mm / 0.20 mm	010375-031-00
0.45 mm / 0.32 mm	010375-045-00
0.70 mm / 0.53 mm	010375-007-00

Spare parts

Silver seal; 1 package (5 units)	005249-005-00
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Perkin Elmer

0.31 mm / 0.20 mm	008020-031-00
0.45 mm / 0.32 mm	008020-045-00
0.70 mm / 0.53 mm	008020-007-00

Spare parts

Vespel™ graphite ferrule; 1 package (5 units)	009999-092-00
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Siemens RGC 0202

0.31 mm / 0.20 mm	008191-031-00
0.45 mm / 0.32 mm	008191-045-00
0.70 mm / 0.53 mm	008191-007-00

Spare parts

Silver seal; 1 package (5 units)	003962-005-00
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Shimadzu 14 A and 17 A

0.31 mm / 0.20 mm	008068-031-00
0.45 mm / 0.32 mm	008068-045-00
0.70 mm / 0.53 mm	008068-007-00

Spare parts

Silver seal; 1 package (5 units)	002841-005-00
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Shimadzu 2010

0.31 mm / 0.20 mm	006511-031-00
0.45 mm / 0.32 mm	006511-045-00
0.70 mm / 0.53 mm	006511-007-00

Spare parts

Silver seal; 1 package (10 units)	005249-005-00
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Varian 3300 / 3400 / 3500 / 3600 / 3800 / 3900 & Saturn

0.31 mm / 0.20 mm	008192-031-00
0.45 mm / 0.32 mm	008192-045-00
0.70 mm / 0.53 mm	008192-007-00

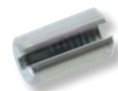
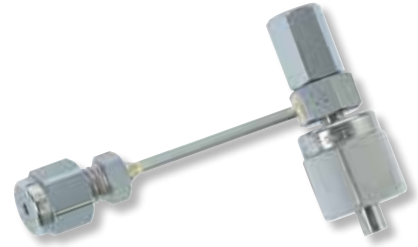
Spare parts

Silver seal; 1 package (5 units)	001383-005-00
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Spare parts

for all GRAPHPACK adapters

GRAPHPACK nut; 1 package (5 units)	001268-005-00
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GRAPHPACK® 2M inlet adapters

For the low-cost conversion of inlet connections of various GC manufacturers to GRAPHPACK 2M connection technology.

Advantages

- Economical, only one sealing technology is used for all inlets.
- No contact with the inlet liner because of accurate centering.



Agilent Technologies / Hewlett-Packard

Split/splitless injector

HP 5890 A and Series II, Agilent 6850/6890 and Agilent 7820/7890

Column OD / ID

Part No.

0.31 mm / 0.20 mm	006509-031-00
0.45 mm / 0.32 mm	006509-045-00
0.70 mm / 0.53 mm	006509-007-00

Spare parts

Silver seal; 1 package (5 units)	001362-005-00
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Agilent Technologies / Hewlett-Packard

HP 5890 A and Series II, Agilent 6850/6890 and Agilent 7820/7890 for TCD.

0.45 mm / 0.32 mm	006831-045-00
0.70 mm / 0.53 mm	006831-007-00



Fisons Serie 8000

Split/splitless injector

0.31 mm / 0.20 mm	007302-031-00
0.45 mm / 0.32 mm	007302-045-00
0.70 mm / 0.53 mm	007302-007-00

Sold without silver seal and nut.

Spare parts

Silver seal; 1 package (5 units)	007301-005-00
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Perkin Elmer

PSS Injector

0.31 mm / 0.20 mm	008021-031-00
0.45 mm / 0.32 mm	008021-045-00
0.70 mm / 0.53 mm	008021-007-00

Spare parts

Vespel ferrule; 1 package (5 units)	009999-093-00
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Part No.

Perkin Elmer

Split/splitless injector

0.31 mm / 0.20 mm	007464-031-00
0.45 mm / 0.32 mm	007464-045-00
0.70 mm / 0.53 mm	007464-007-00

Spare parts

Vespel ferrule 1/4"; 1 package (5 units)	009999-091-00
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Shimadzu 14 A, 17 A

Split/splitless injector

0.31 mm / 0.20 mm	008068-031-00
0.45 mm / 0.32 mm	008068-045-00
0.70 mm / 0.53 mm	008068-007-00

Spare parts

Silver seal; 1 package (5 units)	002841-005-00
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Shimadzu 2010

Split/splitless injector

0.31 mm / 0.20 mm	006511-031-00
0.45 mm / 0.32 mm	006511-045-00
0.70 mm / 0.53 mm	006511-007-00

Spare parts

Silver seal; 1 package (5 units)	005249-005-00
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Valco™ VICI Valve

0.31 mm / 0.20 mm	008019-031-00
0.45 mm / 0.32 mm	008019-045-00
0.70 mm / 0.53 mm	008019-007-00



**Varian
3300 / 3400 / 3500 /
3600 / 3800 / 3900 &
Saturn**

0.31 mm / 0.20 mm	008192-031-00
0.45 mm / 0.32 mm	008192-045-00
0.70 mm / 0.53 mm	008192-007-00

Spare parts

Silver seal; 1 package (5 units)	001383-005-00
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Spare parts

for all GRAPHPACK adapters

GRAPHPACK nut; 1 package (5 units)	001268-005-00
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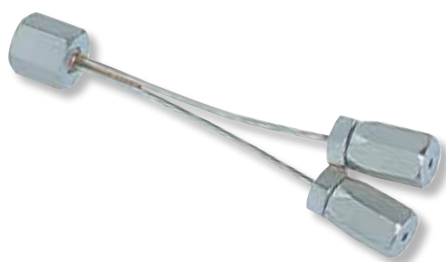
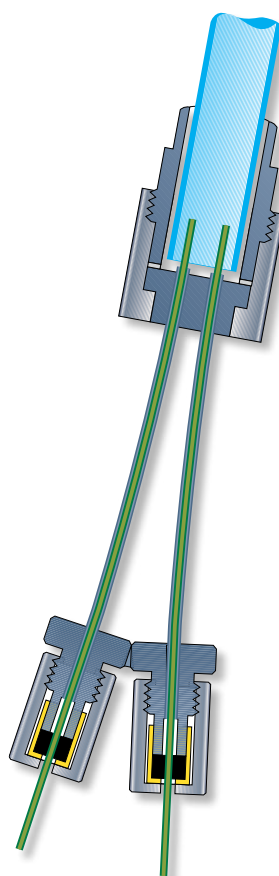


GRAPHPACK® 2M dual column inlet adapter

This dual column inlet adapter permits the simultaneous connection of two fused silica capillary columns to one inlet. This allows a sample to be analyzed on two columns simultaneously from a single injection. Adapters are available for GERSTEL® inlets as well as for all major GC manufactures.

Advantages

- Reduction in analysis time.
- Simultaneous analysis using capillary columns with different polarities.
- No split discrimination due to contact of the capillary column with the inside wall of the inlet liner thanks to column self-centering design.



GERSTEL Cooled Injection System CIS 3, CIS 4 and CIS 6

Column OD / ID

Part No.

0.31 mm / 0.20 mm	007530-031-00
0.45 mm / 0.32 mm	007530-045-00

Spare parts

Silver seal; 1 package (5 units)	002841-005-00
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Column OD / ID **Part No.**

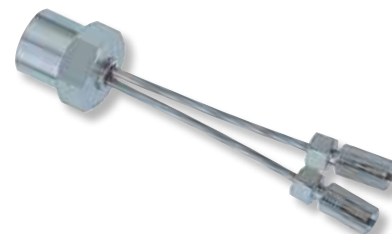
Agilent Technologies / Hewlett-Packard

Split/splitless injector
HP 5890 A and Series II, Agilent 6850/6890 and Agilent 7820/7890

0.31 mm / 0.20 mm	007533-031-00
0.45 mm / 0.32 mm	007533-045-00
0.70 mm / 0.53 mm	007533-007-00

Spare parts

Silver seal; 1 package (5 units)	001362-005-00
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Fisons Serie 8000

Split/splitless injector

0.31 mm / 0.20 mm	008030-031-00
0.45 mm / 0.32 mm	008030-045-00
0.70 mm / 0.53 mm	008030-007-00

Spare parts

Silver seal. 5 mm OD; 1 package (10 units)	001402-010-00
Silver seal. 11.5 mm OD; 1 package (5 units)	007301-005-00



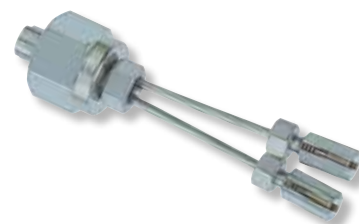
Perkin Elmer

Split/splitless injector

0.31 mm / 0.20 mm	007671-031-00
0.45 mm / 0.32 mm	007671-045-00
0.70 mm / 0.53 mm	007671-007-00

Spare parts

Vespel ferrule 1/4"; 1 package (5 units)	009999-091-00
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Carlo Erba CE 5300

0.31 mm / 0.20 mm	009040-031-00
0.45 mm / 0.32 mm	009040-045-00
0.70 mm / 0.53 mm	009040-007-00

Spare parts

Silver seal; 1 package (5 units)	000976-005-00
Silver seal; 1 package (10 units)	001402-010-00



GRAPHPACK® 2M MSD adapter

For the low-cost conversion of MSD connections of various GC manufacturers to GRAPHPACK 2M connection technology.

Advantages

- Economical, only one sealing technology is used for the capillary column.
- Leak-free at elevated or fluctuating temperatures and under high vacuum.

**Agilent Technologies /
Hewlett-Packard
MSD HP 5971 / 5972,
Agilent 5973A / 5973N /
5973 inert, 5975, HP GCD**



Column OD / ID

Part No.

0.31 mm / 0.20 mm	006511-031-00
0.40 mm / 0.25 mm	006511-040-00
0.45 mm / 0.32 mm	006511-045-00

Spare parts

Silver seal; 1 package (5 units)

005249-005-00

GRAPHPACK 2M dual column interface for MSD

For the simultaneous connection of two capillary columns to a single MSD

Advantages

- Use of two different polarity capillary columns with one MSD.

Hewlett-Packard MSD HP 5971 / 5972

Column OD / ID	Part No.
0.31 mm / 0.20 mm	007233-031-00
0.40 mm / 0.25 mm	007233-040-00
0.45 mm / 0.32 mm	007233-045-00

Spare parts

Vespel ferrule; 1 package (5 units)	007348-005-00
Interface nut; 1 package (5 units)	007236-005-00

Agilent Technologies / Hewlett-Packard MSD Agilent/HP 5973A, 5973N, 5973 inert, 5975

0.31 mm / 0.20 mm	008599-031-00
0.40 mm / 0.25 mm	008599-040-00

Spare parts

Vespel ferrule; 1 package (5 units)	009999-093-00
Interface nut; 1 package (5 units)	007236-005-00



GRAPHPACK® 3D/2 connection technology

For the rapid, reliable and low-dead-volume connection of two capillary columns with the same or different outside diameter, or of different materials.

The components of the GRAPHPACK 3D/2 connection technology are the GRAPHPACK 3D/2 ferrule, the GRAPHPACK 3D/2 connector and the GRAPHPACK 3D/2 screw.

Sulfinert®

All GRAPHPACK 3D/2 components which come into contact with analytes are Sulfinert® coated. This offers the optimal surface material for every GC analysis. Sulfinert is the latest in passivation coating technology, the next generation of the well-known Silcosteel® coating.

The Sulfinert coating is ideal for use in all GC applications such as environmental, flavour and fragrance, off-odors, food and beverage, chemical and petrochemical, pharmaceutical and polymers. Sulfinert is stable over a wide pH range and unlike fused silica coatings, which can dissolve in caustic environments; the Sulfinert coating is stable when sampling caustic amines as well as acidic sulfur compounds. Sulfinert provides for the determination of ultra-low levels of organic compounds and superior inertness for sulfur compounds, simplifying the choice of passivation surface. When working with GERSTEL® GRAPHPACK 3D/2 products, there is no need to use different passivation surfaces for different applications or different analytes. GERSTEL GRAPHPACK 3D/2 is offered with only one type of surface passivation: The very best.

1 GRAPHPACK 3D/2 ferrule



The GRAPHPACK 3D/2 ferrule is a cylinder metal packed with graphite.

Advantages

- Suitable for high pressures and temperatures as well as high vacuum.
- Rapid mounting and positioning on the column outside the oven.
- Leak-free connections are achieved without excessive tightening.
- Connections remain leak-free with temperature cycling.
- Self-centering of the ferrule in the connector.

3 GRAPHPACK 3D/2 screw

The screw secures the capillary column and the GRAPHPACK 3D/2 ferrule in the connector.

4 GRAPHPACK 3D/2 sealing ferrule

This is a GRAPHPACK 3D/2 ferrule with a fixed sealing wire for the low dead-volume sealing of an outlet which is not needed on GRAPHPACK 3D/2 crosspieces and switching in use.

Advantages

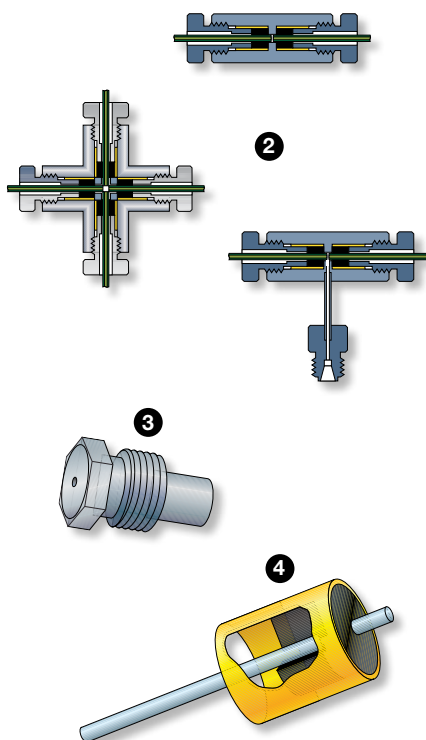
- No dead volume occurs as the result of an outlet which is not needed.
- No graphite enters the GRAPHPACK 3D/2 crosspiece or switching device as an appropriate sealing ferrule is available for every column diameter.

2 GRAPHPACK 3D/2 connectors

IColumn connectors, crosspieces and switching devices for the connection of two to four capillary columns of the same or different diameters.

Advantages

- Low thermal mass.
- Low dead-volume.



Column OD / ID

Part No.

**GRAPHPACK 3D/2
ferrules**

1 package (10 units)

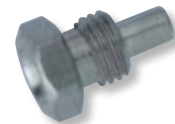
0.20 mm / ≤ 0.1 mm	001705-020-00
0.25 mm / ≤ 0.1 mm	001705-025-00
0.31 mm / 0.20 mm	001705-031-00
0.40 mm / 0.25 mm	001705-040-00
0.45 mm / 0.32 mm	001705-045-00
0.70 mm / 0.53 mm	001705-007-00
0.80 mm / 0.27 mm	001705-008-00



GRAPHPACK 3D/2 screw

1 package (1 units)

0.20 mm / ≤ 0.1 mm	005615-020-00
0.25 mm / ≤ 0.1 mm	005615-025-00
0.31 mm / 0.20 mm	005615-031-00
0.40 mm / 0.25 mm	005615-040-00
0.45 mm / 0.32 mm	005615-045-00
0.70 mm / 0.53 mm	005615-007-00
0.80 mm / 0.27 mm	005615-008-00



**GRAPHPACK 3D/2
sealing ferrule for
GRAPHPACK 3D/2
crosspieces**

1 package (5 units)

0.20 mm / ≤ 0.1 mm	006520-020-00
0.25 mm / ≤ 0.1 mm	006520-025-00
0.31 mm / 0.20 mm	006520-031-00
0.40 mm / 0.25 mm	006520-040-00
0.45 mm / 0.32 mm	006520-045-00
0.70 mm / 0.53 mm	006520-007-00
0.80 mm / 0.27 mm	006520-008-00



GRAPHPACK® 3D/2 column connector Sulfinert®

For the connection of two capillary columns with the same or different diameters or of different materials.



Column OD / ID	Column OD / ID	Part no.
from 0.70 / 0.53 mm to	0.31 mm / 0.20 mm	013407-031-00
	0.40 mm / 0.25 mm	013407-040-00
	0.45 mm / 0.32 mm	013407-045-00
	0.70 mm / 0.53 mm	013407-007-00
from 0.45 / 0.32 mm to	0.31 mm / 0.20 mm	013445-031-00
	0.40 mm / 0.25 mm	013445-040-00
	0.45 mm / 0.32 mm	013445-045-00
from 0.40 / 0.25 mm to	0.40 mm / 0.25 mm	013440-040-00
from 0.31 / 0.20 mm to	0.31 mm / 0.20 mm	013431-031-00

GRAPHPACK 3D/2 column connector Sulfinert® with gas connection

Spare parts
see page 15

GRAPHPACK 3D/2 column connector with gas connection
For the connection of two capillary columns with the same or different diameters or of different materials and the connection of make-up gas.



Column OD / ID	Column OD / ID	Part no.
from 0.80 to	0.45 mm / 0.32 mm	013508-045-00
from 0.70 / 0.53 mm to	0.31 mm / 0.20 mm	013507-031-00
	0.40 mm / 0.25 mm	013507-040-00
	0.45 mm / 0.32 mm	013507-045-00
	0.70 mm / 0.53 mm	013507-007-00
from 0.45 / 0.32 mm to	0.31 mm / 0.20 mm	013545-031-00
	0.40 mm / 0.25 mm	013545-040-00
	0.45 mm / 0.32 mm	013545-045-00
from 0.40 / 0.25 mm to	0.40 mm / 0.25 mm	013540-040-00
from 0.31 / 0.20 mm to	0.31 mm / 0.20 mm	013531-031-00

GRAPHPACK 3D/2 crosspieces Sulfinert®

For the connection up to 4 capillary columns with the same or different diameters or of different materials.

GRAPHPACK 3D/2 crosspiece kit

contains

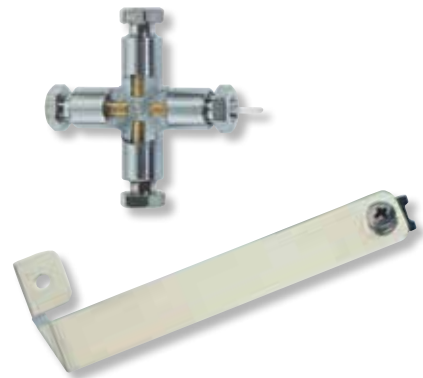
- GRAPHPACK 3D/2 crosspiece
- GRAPHPACK 3D/2 ferrules
- Universal bracket for crosspiece
- GRAPHPACK mounting tool kit

main column outside diameter	Part no.
0.31 mm	012224-031-00
0.45 mm	012224-045-00
0.70 mm	012224-007-00



Spare parts

GRAPHPACK 3D/2 crosspiece	0.31 mm	012240-031-00
	0.40 mm	012240-040-00
	0.45 mm	012240-045-00
Universal bracket for crosspiece	0.70 mm	012240-007-00
		006188-000-00



1 GRAPHPACK mounting tool kit for GRAPHPACK 3D/2 column connectors + crosspieces

Complete kit	013492-000-00
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Spare parts

2 GRAPHPACK mounting tool tool body without insert

003424-000-00



3 Insert for 1.2 mm column mounting depth

Color red	008994-003-00
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4 Insert holder

main column outside diameter	Part no.
0.20 mm to 0.31 mm	008995-031-00
0.40 mm to 0.45 mm	008995-045-00
0.70 mm to 0.80 mm	008995-008-00





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Ver. 2015/06/17

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Awarded for the active pursuit of

S00135-703-02

GERSTEL
certified **SUPPLIES**



**Cooled
Injection
System, CIS**



**Automated
Liner
EXchange, ALEX**



GERSTEL® Cooled Injection System, CIS

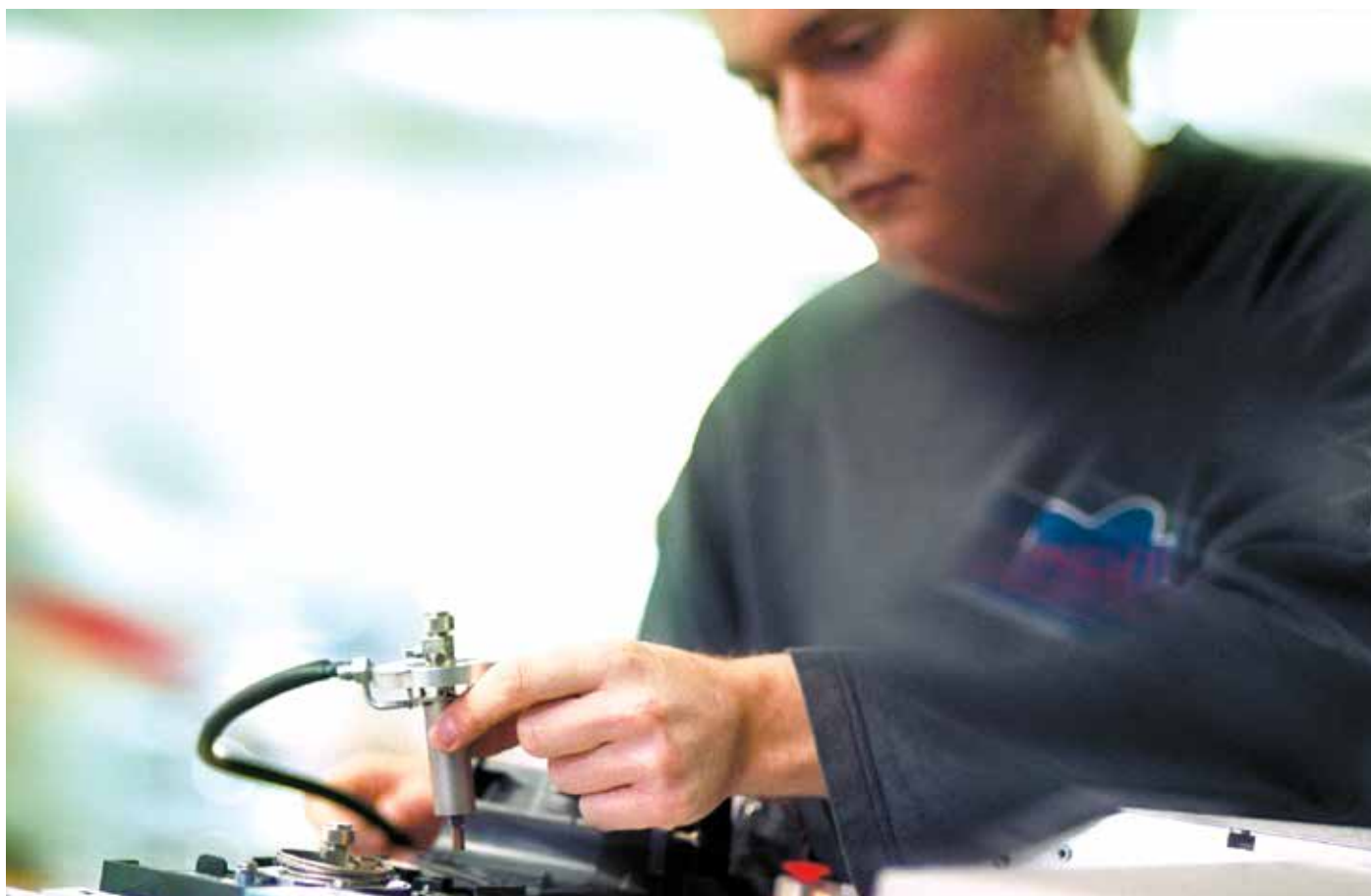
Universal inlet for gas chromatography

The GERSTEL CIS is a temperature programmable PTV-type GC inlet. The CIS offers septumless, cold injection of volumes of up to 1000 µl for liquid samples. The integrated split function enables the CIS to handle ultra-trace concentrations as well as undiluted samples. Programmed linear heating ensures quantitative, discrimination-free transfer of sample components to the GC column for best possible GC analysis results.

The CIS is a general purpose, universal GC inlet. When working with Thermal Desorption or Headspace techniques, the CIS is used for enrichment, focusing and quantitative transfer of analytes to the capillary column.

An integral part of the CIS is the GERSTEL MAS controller, which can be used to control all GERSTEL modules, thus ensuring easy, cost effective system upgrades. The CIS can be retro-fitted to existing Agilent Technologies/ HP gas chromatographs.

GERSTEL GRAPHPACK® technology and septumless sampling head are standard features. A choice of liquid CO₂, liquid N₂ or Peltier cooling is available. Available CIS models cover the temperature range from -180 to +650 °C. Compounds covering a wide boiling range can be efficiently trapped with subsequent discrimination-free analyte transfer to the capillary column. The CIS is compatible with all GERSTEL autosamplers - and with autosamplers from all major manufacturers.



Part No.

**Septumless sampling head (SLH)
for CIS 3/4/6**

(for 23 gauge needles)

For manual or automated sample introduction

CIS 3	003089-064-00
CIS 4/6	007513-064-00



Service kit for SLH

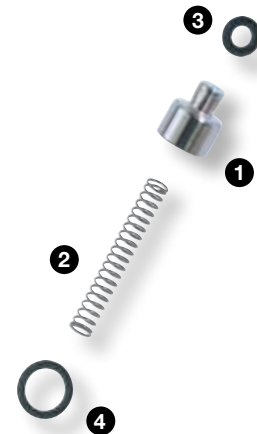
Complete

009999-010-00

Contains one unit each of the following items:

1 Plunger	004230-000-00
2 Spring	009999-014-00
3 Inner-O-Ring (Kalrez™)	009999-015-00
4 Outer-O-Ring (Viton™) *	009999-016-00

* When reordering only complete original package size is available (5 units).



SLH cap

23 gauge needles

006144-064-00



Teflon™ needle guide for SLH

1 package (10 units)

23 gauge needles

003091-064-00

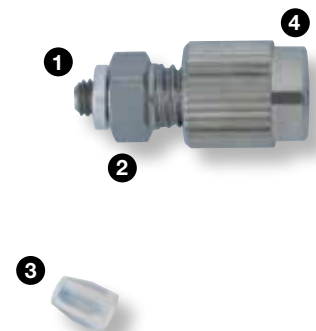


**Carrier gas connection
for SLH**

Complete kit

005610-000-00

1 Aluminium seal for SLH 1 package (5 units)	004256-005-00
2 Carrier gas connection body for SLH 1 package (1 units)	001459-003-00
3 Teflon ferrule 1/16" 1 package (10 units)	001576-010-00
4 Knurled nut 1 package (5 units)	001117-005-00



Part No.

The glass liners listed below are designed for the CIS 3 or CIS 4/6 and Agilent PTV respectively. Unless otherwise specified, the dimensions are:

CIS 4/6 & Agilent PTV OD 3 mm (ID 2 mm); length 71 mm.
CIS 3 OD 2 mm (ID 1.5 mm); length 93 mm.

Note:

With exception of the Siltek™ coated liners, the deactivation is only stable at temperatures up to 275 °C. Higher temperatures can be used, but this will create more active sites inside the liner.

GERSTEL Headspace:

For static headspace analysis we recommend a deactivated baffled liner. For splitless injection it may be necessary to refocus inside the liner. In this case liners filled with Tenax TA™, Carbotrap B™ or PDMS foam may be appropriate.

CIS glass liners



straight with notch
deactivated

For initial system evaluation. Recommended for splitless injection. Can be used for custom-packed liners.
 Maximum temperature: 275 °C

1 package (10 units)

CIS 3	011708-010-00
CIS 4/6 & Agilent PTV	011709-010-00



baffled
deactivated

For cold split injections, baffles create good mixing of sample and carrier gas. For liquid injections of moderate/high boilers and for labile compounds.
 Maximum temperature: 275 °C

1 package (10 units)

CIS 3	011710-010-00
CIS 4/6 & Agilent PTV	011711-010-00



for SPME ID 1 mm
deactivated

For SPME desorption. Due to the smaller inner diameter, the linear carrier gas velocity is increased, resulting in more efficient desorption. (For manual SPME or automated SPME using the GERSTEL MultiPurpose Sampler MPS)

Maximum temperature: 275 °C

1 package (10 units)

CIS 4/6 & Agilent PTV	011712-010-00
----------------------------------	----------------------

Part No.

Siltek™ coated baffled liners

deactivated

For cold split injections, baffles create good mixing of sample and carrier gas. The Siltek™ coating withstands high temperatures up to 350 °C. It is also suitable for labile compounds.

1 package (5 units)

CIS 3 014758-005-00

CIS 4/6 & Agilent PTV 014652-005-00

CIS glass liners packed

with silanized glass wool

deactivated

Suitable for large volume injections into the CIS. The large surface area helps retain analytes while solvent evaporates. Furthermore, the packing acts as a filter for particulates. For liquid injections of moderate/high boilers, stable compounds.

Maximum temperature: 275 °C

1 package (10 units)

CIS 3 010849-010-00

CIS 4/6 & Agilent PTV 010850-010-00

with quartz wool

deactivated

Suitable for large volume injections into the CIS. The large surface area helps retain analytes while solvent evaporates. Furthermore the packing can act as a filter for particulates. More inert than glass wool. For liquid injections of difficult compounds (acidic, alkaline etc.).

Maximum temperature: 275 °C

1 package (10 units)

CIS 3 008420-010-00

CIS 4/6 & Agilent PTV 007519-010-00

with glass beads

deactivated

Suitable for large volume injections into the CIS. Usage similar to the glass wool liner, but the glass beads provide a larger surface area and better retention of low boilers. The packing can also act as a filter for particulates.

Maximum temperature: 275 °C

1 package (5 units)

CIS 4/6 & Agilent PTV 011714-005-00



Part No.

CIS glass liners packed

with Tenax TA™

For PTV injection combined with solvent venting during large volume injections. Low affinity to methanol and water (Best water elimination at 40 °C). Usable for trapping from C5 to C26. Particularly suitable for headspace analysis.

Maximum temperature: 350 °C

1 package (5 units)

CIS 3 **013249-005-00**

CIS 4/6 & Agilent PTV **013247-005-00**

with Carbotrap B™

For trapping of very volatile compounds in combination with large volume injections or headspace analysis.

Maximum temperature: 400 °C

1 package (5 units)

CIS 3 **013250-005-00**

CIS 4/6 & Agilent PTV **013248-005-00**

with glass beads and Carbotrap C™

For trapping of analytes over a wide boiling point range in combination with large volume injections or headspace analysis.

Maximum temperature: 400 °C

1 package (5 units)

CIS 4/6 & Agilent PTV **011716-005-00**

with PDMS foam

For trapping of non polar analytes covering a wide range of volatility up to n-C40. Well suited for large volume injections.

Maximum temperature: 300 °C

Minimum temperature: -10 °C (glass transition temperature)

5 mm packing length for semi volatiles

1 package (10 units)

CIS 4/6 & Agilent PTV **014594-010-00**

10 mm packing length for intermediate volatiles

1 package (10 units)

CIS 4/6 & Agilent PTV **014595-010-00**

30 mm packing length retains very volatile analytes

1 package (5 units)

CIS 4/6 & Agilent PTV **014596-005-00**



Part No.

CIS glass liner kits

CIS glass liner kit

containing 2 of each of the following liner types:

- straight with notch, deactivated
- Baffled, deactivated
- Packed with silanized glass wool, deactivated
- Packed with Tenax™
- Packed with Carbotrap B™

CIS 3 013543-003-00

CIS 4/6 & Agilent PTV 013543-004-00

CIS PDMS glass liner kit

containing 2 of each of the following liner types:

- Packed with PDMS foam, 5 mm packing length
- Packed with PDMS foam, 10 mm packing length
- Packed with PDMS foam, 30 mm packing length

CIS 4/6 & Agilent PTV 014601-104-00

CIS glass liners packed

with silanized glass wool

Suitable for large volume injections into the PTV. The large surface area helps retain analytes while solvent evaporates. Furthermore the packing can act as a filter for particulates. For liquid injections of moderate/high boilers, stable compounds.

Note:

- Glass body is not deactivated.
- 1 package (10 units)

CIS 3 002931-010-00

CIS 4/6 & Agilent PTV 014284-010-00

Adsorbent properties

Tenax TA™

Tenax TA™ is a porous material based on 2,6-diphenylene oxide polymer, with a specific surface area of 35 m²/g. The material has a low affinity for water and methanol and can be used to trap and thermally desorb compounds in the C5-C26 range. The particle size is 60/80 MESH.

Carbotrap B™

Carbotrap B™ has a mesh size of 20/40 mesh, with a specific surface area of 100 m²/g. This adsorbent is especially suited for trapping and thermally desorbing compounds in the range from C5 to C20 (depending on the structure of the molecule).

Carbotrap C™

Carbopack C™ has a mesh size of 20/40 mesh with a specific surface area of 10 m²/g. This adsorbent is especially suited for trapping and

thermally desorbing compounds in the range from C9 to C30 (depending on the structure of the molecule).

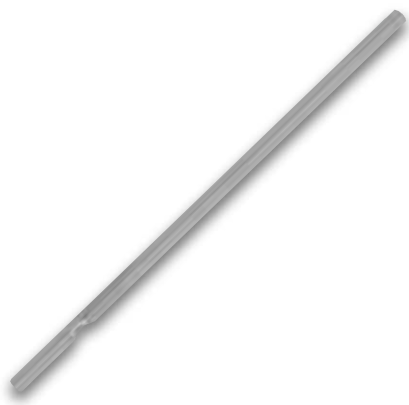
PDMS

The GERSTEL Polydimethylsiloxane (PDMS) foam has an open porous structure. It is suitable as a trap or "guard column". The highly inert and non polar material is well suited for large volume injections with analytes covering a wide range of volatility. PDMS provides strong retention of non polar analytes. Can be used for analytes as high boiling as n-C40. Ideal packing if glass wool trapping is too weak and Tenax TA™ too strong. Allows trapping at moderate temperatures, reducing the need for cryogenic cooling compared to glass wool. Maximum temperature: 300 °C. Minimum temperature -10 °C (glass transition temperature).



Part No.

CIS glass liners



straight with notch

not deactivated

For an initial system evaluation. Recommended for splitless injection. Can be used for custom-packed liners.

Maximum temperature: 400 °C

Note:

Liner is not deactivated. Unstable compounds may decompose.

1 package (10 units)

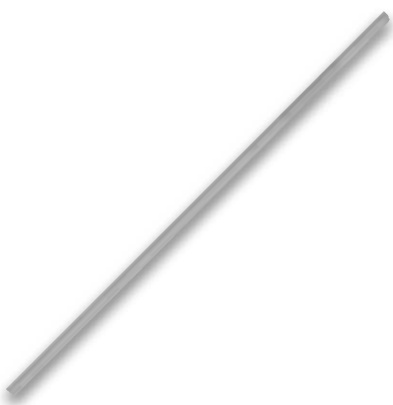
CIS 3 013886-010-00

CIS 4/6 & Agilent PTV 013881-010-00

1 package (100 units)

CIS 3 013886-100-00

CIS 4/6 & Agilent PTV 013881-100-00



straight without notch

ID 2 mm, not deactivated

For special uses e.g. in combination with TDS. Enables analyte trapping on the column (For more information contact your local GERSTEL representative).

Maximum temperature: 400 °C

Note:

liner is not deactivated. Unstable compounds may decompose.

1 package (10 units)

CIS 4/6 & Agilent PTV 013910-010-00



baffled

not deactivated

For cold split injections, baffles create good mixing of sample and carrier gas. For liquid injections of stable and unproblematic moderate/high boilers.

Maximum temperature: 400 °C

Note:

liner is not deactivated. Unstable compounds may decompose. (Primary use in combination with the Automated Liner Exchange (ALEX) system)

1 package (10 units)

CIS 3 013887-010-00

CIS 4/6 & Agilent PTV 013882-010-00

1 package (100 units)

CIS 3 013887-100-00

CIS 4/6 & Agilent PTV 013882-100-00

Part No.

Quartz liners for CIS 4/6 & Agilent PTV

straight with notch

not deactivated

For an initial system evaluation. Recommended for splitless injection. Can be used for custom-packed liners.

Suitable for high temperature usage (up to 650 °C) with a CIS 6.

1 unit	013238-000-00
1 package (5 units)	013238-005-00



packed with quartz wool

not deactivated

Suitable for large volume injections into the PTV. The large surface area helps retain analytes while solvent evaporates. Furthermore the packing can act as a filter for particulates. More inert than glass wool. For liquid injections of difficult compounds (acidic, alkaline etc.). Suitable for high temperature usage (up to 650 °C) with a CIS 6.

1 unit	013605-000-00
1 package (5 units)	013605-005-00



baffled

not deactivated

For cold split injections, baffles create good mixing of sample and carrier gas. For liquid injections of moderate/high boilers and for labile compounds. Suitable for high temperature usage (up to 650 °C) with a CIS 6.

1 unit	013148-000-00
1 package (5 units)	013148-005-00



Part No.



GRAPHPACK® 3D ferrules for glass liners

1 package (5 units)

CIS 3	002426-005-00
CIS 4/6; Agilent PTV	007541-005-00

1 package (10 units)

CIS 3	002426-010-00
CIS 4/6; Agilent PTV	007541-010-00

GRAPHPACK® 3D Kalrez ferrules for glass liners

(not for use in conjunction with TDS / TDU)

1 package (2 units)

CIS 4/6; Agilent PTV	011868-002-00
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GRAPHPACK 3D mounting tool for glass liners



CIS 3	003079-000-00
CIS 4/6 & Agilent PTV	007542-000-00

Septum head

without septum purge



CIS 3	002835-000-00
CIS 4/6 & Agilent PTV	007514-000-00

Septum head

with septum purge



CIS 3	008577-000-00
CIS 4/6 & Agilent PTV	008584-000-00

Spare parts



1 Septum cap	006460-000-00
2 Septum for CIS 3/4, white Silicone; 1 package (25 units)	008246-025-00
3 Teflon ferrule 1/16"; 1 package (10 units)	001576-010-00
4 Knurled nut; 1 package (5 units)	001117-005-00

Column OD / ID

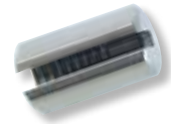
Part No.

**GRAPHPACK® 2M adapter
for CIS**

CIS 3/4 (silver)	0.31 mm / 0.20 mm	007259-031-00
	0.45 mm / 0.32 mm	007259-045-00
	0.70 mm / 0.53 mm	007259-007-00
CIS 6 (Stainless steel)	0.31 mm / 0.20 mm	013244-031-00
	0.45 mm / 0.32 mm	013244-045-00
	0.70 mm / 0.53 mm	013244-007-00

Spare parts

Silver seal; 1 package (5 units)	002841-005-00
GRAPHPACK nut; 1 package (5 units)	001268-005-00



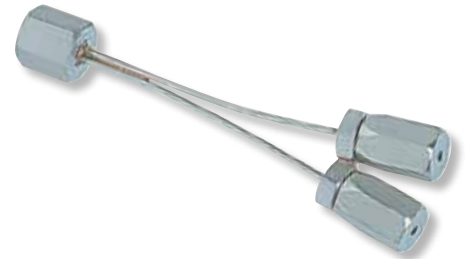
**GRAPHPACK® 2M dual column
injector adapter**

For the simultaneous connection of two capillary columns to a single CIS inlet.

0.31 mm / 0.20 mm	007530-031-00
0.45 mm / 0.32 mm	007530-045-00

Spare parts

Silver seal; 1 package (5 units)	002841-005-00
GRAPHPACK nut; 1 package (5 units)	003714-005-00



GRAPHPACK 2M ferrules

1 package (10 units)

0.20 mm / ≤ 0.1 mm	001805-020-00
0.25 mm / ≤ 0.1 mm	001805-025-00
0.31 mm / 0.20 mm	001805-031-00
0.40 mm / 0.25 mm	001805-040-00
0.45 mm / 0.32 mm	001805-045-00
0.70 mm / 0.53 mm	001805-007-00
0.80 mm / 0.27 mm	001805-008-00



Part No.



On Column kit

On-Column insert converts CIS into On-Column injector.

1 On Column insert; single

CIS 3 005533-000-00

CIS 4/6 008340-000-00

2 GRAPHPACK 3D ferrule;
1 package (5 units)

CIS 3 005532-000-00

CIS 4/6 007541-005-00

3 GRAPHPACK 2M adapter

CIS 3/4 007259-007-00

CIS 6 013244-007-00

4 GRAPHPACK 2M ferrule; 1 package (10 units)

001805-007-00

5 Silver seal; 1 package (5 units)

002841-005-00

6 Teflon needle guide (0.47 mm); 1 package (10 units)

003091-047-00

7 Cap for SLH (0.47 mm)

006144-047-00



Adsorption trap

for split outlet
1/16" inlet, 1/16" outlet connection,
filled with charcoal

005243-001-00



Cryo tube

2 m

CIS 4/6 006124-004-00

with CIS adapter

Microliter syringes

injection / sampler	system	description	µL	units	Part No.
manual injection	CIS	needle-in-needle	1	1	009999-041-00
Autosampler HP 7673 / Agilent 7683/7693	CIS	fixed needle	5	1	009980-028-00
			5	6	009980-029-00
			10	1	022004-050-00
			10	6	009980-031-00
Autosampler HP 7673 / Agilent 7683/7693	CIS	replaceable needle	25	1	009980-032-00
			50	1	009970-013-00
			100	1	009970-014-00
				2	022004-802-00
		Spare needle			
Autosampler HP 7673 / Agilent 7683/7693	CIS	fixed needle, on-column-injection	10	1	009999-052-00

injection type	system	description	µL	units	Part No.
manual injection	CIS	fixed needle	5	1	022000-000-00
			10	1	022000-050-00
			25	1	022004-100-00
			50	1	009970-011-00
			100	1	022004-200-00
			manual injection	CIS	gastight
250	1	009999-018-00			
500	1	009999-017-00			
1000	1	009999-021-00			
	3	009999-006-00			
		Spare TLL needle			



GERSTEL® Automated Liner EXchange, ALEX

For routine GC analysis of samples that contain large amounts of solid material. Designed for use with the GERSTEL Multi-Purpose Sampler, MPS 2 and the GERSTEL Cooled Injection System, CIS. GC inlet liners can be replaced automatically at user-defined intervals in the sequence. A special ALEX liner tray holds up to 98 prepared liners, enabling routine analysis of large numbers of dirty samples.



Part No.

Universal syringe holder

Version 2; compatible with ALEX

1 unit	013822-000-00
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ALEX transport adapter

for CIS 4/6 Liner



1 unit	013795-000-00
10 units	013795-010-00

O-ring kit for ALEX transport adapter

1 package (5 × 4 units)



1 package (5 × 4 units)	013934-005-00
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Part No.

Septa

for GERSTEL-ALEX transport adapter

10 units	015608-010-00
100 units	015608-100-00

**Allen wrench**

for transport adapter screws, 4 mm

1 unit	009999-204-00
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**O-ring**for ALEX sampling head,
1 package (10 units)

10 units	013931-010-00
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**Glass inserts for ALEX sample tray**

10 units	013794-010-00
100 units	013794-100-00

**O-ring for ALEX sample tray glass inserts**

10 units	014292-010-00
100 units	014292-100-00





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Ver. 2015/06/17

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Awarded for the active pursuit of environmental sustainability

GERSTEL
certified **SUPPLIES**



Dynamic Headspace DHS



GERSTEL® Dynamic Headspace DHS

The Dynamic Headspace (DHS) option for the GERSTEL MultiPurpose Sampler (MPS) enables efficient automated extraction and concentration of VOCs and SVOCs from liquid or solid samples placed in standard headspace vials. Compared with static headspace and SPME, DHS offers significant improvements in recovery and limits of detection. Analytes are concentrated on a sorbent filled tube and subsequently transferred to the GC/MS by thermal desorption in the GERSTEL Thermal Desorption Unit (TDU). A new trap can be selected for each sample ensuring that no carry-over is experienced even for the most difficult samples.

This Supplies Catalogue provides a list of certified consumables, accessories and spare parts essential for the smooth operation of your GERSTEL® DHS. You have the right to demand the highest quality and performance from your GERSTEL system. In order to ensure best possible performance throughout the life of your system, please use only consumables, accessories and spare parts provided by GERSTEL. All GERSTEL products are made to exact specifications. Use of products not approved by GERSTEL can cause system malfunction or damage and may void system warranty. If you have any questions please do not hesitate to contact GERSTEL. Typically, the most efficient way is to contact your local sales representative.



Please note:

Adsorbent tubes and transport adaptors are listed separately in the TDU Supplies Catalogue.



Screw cap vials

Vials	mL	Thread Ø	unit	Part no.
Clear, Ø11.6 x 32 mm, for DHS dry position	1.5	9	100	093640-046-00 ❶
Clear	10	18	100	093640-038-00 ❷
Brown	10	18	100	093640-039-00 ❸
Clear	20	18	100	093640-036-00 ❹
Brown	20	18	100	093640-037-00 ❺

Screw caps with septa

	Thread Ø	unit	Part no.
PP transparent, Septum: Silicone blue / PTFE white, 1.3 mm, 45° Shore A	9	100	093640-072-00 ❶
magnetic Septum: Silicone blue / PTFE white, 1.3 mm, 35° Shore A	18	100	093640-040-00 ❷
magnetic Septum: Silicone blue / PTFE white, 1.5 mm, 60° Shore A	18	100	093640-041-00 ❸

Part no.

10mL vial insert for DHS station

1 unit

015809-000-00



Viton O-rings for DHS station

Bottom tube sealing O-ring

1 package (5 units)

015907-005-00



Extraction tool for O-ring inside DHS station

1 unit

015892-000-00



Disposable syringe, 10 mL

for manual pneumatic tube release

1 unit

015996-000-00



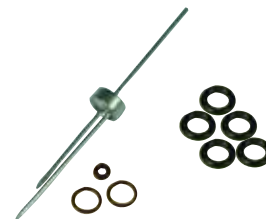
Preventive maintenance kit DHS

consisting of:

DHS needle with Viton ferrule (1 unit)

Viton O-ring for DHS station (5 units)

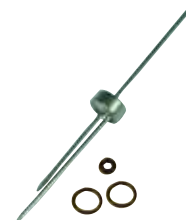
014100-913-00



DHS needle with Viton ferrule

1 unit

017674-500-00



Viton O-ring set for DHS needle

1 package (2 x 10 units)

016050-010-00





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Ver. 2015/06/17

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S00135-705-02

GERSTEL
certified

SUPPLIES



MultiPurpose Sampler MPS

MPS robotic

MPS robotic^{pro}

MPS liquid



GERSTEL® MPS robotic

Versatile autosampler and sample preparation robot
As a new member of the MPS family, the MPS robotic is a highly efficient GC/MS autosampler with extended robotic functionality. The MPS robotic provides reliable processing of complex tasks. Syringe holders and syringes are integrated in special syringe modules, which can be exchanged automatically within a running sequence when using the MPS robotic^{pro} for maximum flexibility.

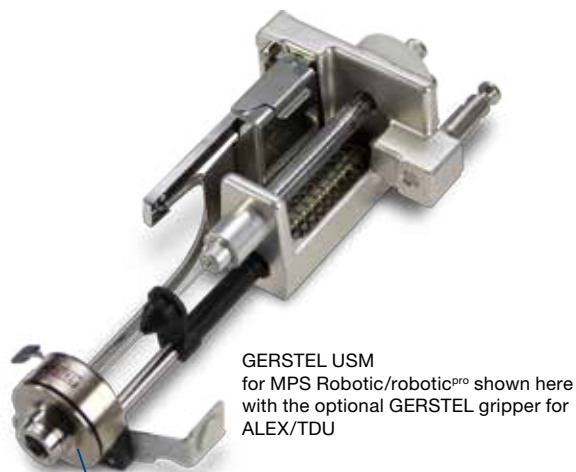
This Supplies catalogue provides a list of certified consumables, accessories and spare parts essential for the smooth operation of your GERSTEL® MPS robotic. You have the right to demand the highest quality performance from GERSTEL systems and we have compiled this list so that this performance can be maintained throughout the life of your system. Please use only consumables, accessories and spare parts provided by GERSTEL. All GERSTEL products are made to exact specifications. Use of products not approved by GERSTEL can cause system malfunction or damage and may void system warranty.

If you have any questions please do not hesitate to contact GERSTEL. Typically, the most efficient way is to contact your local sales representative.

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GERSTEL USM
for MPS Robotic/robotic^{pro} shown here
with the optional GERSTEL gripper for
ALEX/TDU

Option:

GERSTEL gripper for MPS Robotic

Part No.

019597-003-00

GERSTEL Universal Syringe Modul USM

The GERSTEL USM is a universal syringe module for liquid syringes ranging from 1 to 1,000 μL total volume. Given the extended volume range, most application requirements can be met without changing syringe modules, saving both time and money – and reducing the risk of error. The USM is compatible with the GERSTEL Gripper enabling automated performance of multiple sample preparation techniques. As an example, GC liners can be replaced automatically at a user defined frequency, using Automated Liner Exchange (ALEX). A further example is the automated thermal desorption of adsorbent tubes, solid samples such as polymers, or GERSTEL Twisters in the Thermal Desorption Unit (TDU).

Part No.

100100-101-00

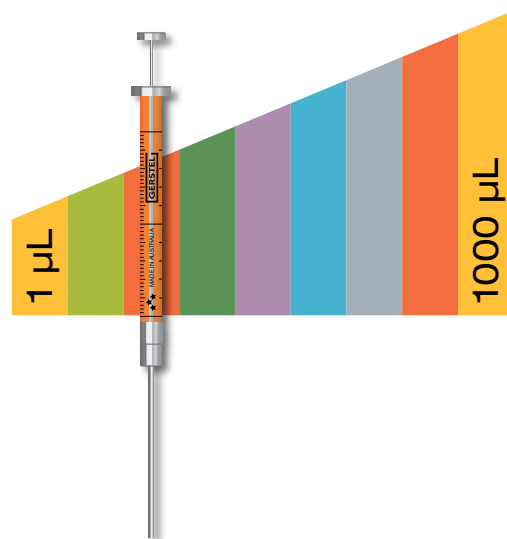
GERSTEL TriStar Syringes

Autosampler Syringes for the MPS family

You need an excellent autosampler syringe in order to perform complex sample preparation methods and reliably inject large series of samples to a chromatography system. Lowest possible sample to sample carry-over and highest accuracy are required. Modern mass spectrometers detect every trace contamination placing high demands on rinsing, solvent quality and syringe quality. GERSTEL TriStar Syringes are designed and produced to meet these demands. The rugged and inert materials used provide resilience to solvents, expanded temperature range and long life expectancy. The number of cycles that can be performed with TriStar syringes has been expanded by a factor of up to ten compared with standard syringes.

The TriStar syringe series offers several improvements to minimize or eliminate sources for carry-over, such as reduced residual volumes and active sites inside the syringe.

The sample is kept clean and uncontaminated, and the needle remains solidly mounted without the risk of solvent attacking the glue. GERSTEL TriStar Syringes for the GERSTEL MPS family are available in all standard sizes.



Benefits of the GERSTEL TriStar Syringes

Color coded

- Easy selection of the correct syringe volume through clear and unambiguous color coding
- Reliable analysis, the risk of incorrect syringe selection is minimized

Inert, rugged material

- Reliable analysis performance with solvent-resistant surfaces
- Extended temperature range for increased ruggedness and application range
- Long life span with reliable operation

Optimized assembly

- Carry-over minimized through reduced residual volumes in the plunger assembly, improved surfaces and PTFE surface sealing
- Carry over and contamination reduced through improved syringe-to-needle connection, eliminating cavities and contact with glue.
- Active plunger tip provides improved Headspace syringe sealing and reduced temperature equilibration times resulting in improved flexibility and productivity

Compatibility:

- Previous versions plungers and needles can be used for TriStar syringes, but it is not recommended to use TriStar plungers and needles for previous version syringes.

Color	Syringe volume	
Yellow	1 µL	1 mL
Lime	5 µL	5 mL
Dark Orange	10 µL	
Green	25 µL	
Purple	50 µL	
Aqua	100 µL	
Grey	250 µL	2.5 mL
Dark Orange	500 µL	

GERSTEL TriStar syringes for liquid injection

For GERSTEL Universal Syringe Modul (100100-101-00) in combination with MPS robotic and MPS robotic^{pro}, and for MPS liquid.



with replaceable needle	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
	5		0.47/0.11/65/C	1	100111-011-00
	5		0.63/0.11/65/C	1	100111-012-00
	10	●	0.47/0.11/65/C	1	100111-016-00
	10	●	0.63/0.11/65/C	1	100111-018-00
	10	●	0.72/0.17/65/LC	1	100111-019-00
	25	●	0.63/0.11/65/C	1	100111-000-00
	25	●	0.72/0.17/65/LC	1	100111-001-00
	50	●	0.63/0.11/65/C	1	100111-002-00
	50	●	0.72/0.17/65/LC	1	100111-003-00
	100	●	0.63/0.11/65/C	1	100111-004-00
	100	●	0.72/0.17/65/LC	1	100111-005-00
	250	●	0.63/0.32/65/C	1	100111-020-00
	250	●	0.72/0.17/65/LC	1	100111-021-00
	500	●	0.63/0.32/65/C	1	100111-022-00
	500	●	0.72/0.17/65/LC	1	100111-023-00
	1000	●	0.63/0.32/65/C	1	100111-024-00
	1000	●	0.72/0.37/65/LC	1	100111-025-00
replacement plunger					
	10	●		1	100111-800-00
	25	●		1	100111-801-00
	50	●		1	100111-802-00
	100	●		1	100111-803-00
	250	●		1	100111-804-00
	500	●		1	100111-805-00
	1000	●		1	100111-806-00
replacement needle					
	5		0.47/0.11/65/C	2	100111-502-00
	5		0.63/0.11/65/C	2	100111-503-00
	10	●	0.47/0.11/65/C	2	100111-504-00
	10	●	0.63/0.11/65/C	2	100111-505-00
	10	●	0.72/0.17/65/LC	2	100111-506-00
	25 - 100	●	0.63/0.11/65/C	2	100111-500-00
	25 - 100	●	0.72/0.17/65/LC	2	100111-501-00
	250 - 500	●	0.63/0.32/65/C	2	100111-507-00
	250 - 500	●	0.72/0.17/65/LC	2	100111-508-00
	1000	●	0.63/0.32/65/C	2	100111-509-00
	1000	●	0.72/0.37/65/LC	2	100111-510-00

GERSTEL TriStar syringes for liquid injection

For GERSTEL Universal Syringe Modul (100100-101-00) in combination with MPS robotic and MPS robotic^{PRO}, and for MPS liquid.

	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
needle in needle	1		0.47/0.15/65/C	1	100111-008-00
needle in needle	1		0.63/0.15/65/C	1	100111-006-00
repair kit					
for syringe 100111-008-00	1		0.47/0.15/65/C	2	100111-551-00
for syringe 100111-006-00	1		0.63/0.15/65/C	2	100111-550-00

with replaceable needle	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
	5		0.47/0.11/65/C	1	100111-009-00
	5		0.63/0.11/65/C	1	100111-010-00
	10		0.47/0.11/65/C	1	100111-013-00
	10		0.63/0.11/65/C	1	100111-014-00
	10	●	0.47/0.11/65/C	1	100111-015-00
	10	●	0.63/0.11/65/C	1	100111-017-00
replacement plunger	10	●		1	100111-800-00



GERSTEL TriStar syringes *for liquid injection*

For MPS robotic tool D8/85

with replaceable needle	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
	5		0.63/0.11/85/C	1	100108-009-00
	10	●	0.63/0.11/85/C	1	100108-010-00
	25	●	0.63/0.11/85/C	1	100108-000-00
	50	●	0.63/0.11/85/C	1	100108-001-00
	100	●	0.63/0.11/85/C	1	100108-002-00
	250	●	0.63/0.32/85/C	1	100108-003-00
	250	●	0.72/0.37/35/LC	1	100108-004-00
	500	●	0.63/0.32/85/C	1	100108-005-00
	500	●	0.72/0.37/85/LC	1	100108-006-00
	1000	●	0.63/0.32/85/C	1	100108-007-00
	1000	●	0.72/0.37/85/LC	1	100108-008-00
replacement plunger					
	10	●		1	100111-800-00
	25	●		1	100111-801-00
	50	●		1	100111-802-00
	100	●		1	100111-803-00
	250	●		1	100111-804-00
	500	●		1	100111-805-00
	1000	●		1	100111-806-00
replacement needle					
	5		0.47/0.11/85/C	2	100108-510-00
	5		0.63/0.11/85/C	2	100108-509-00
	10	●	0.47/0.11/85/C	2	100111-512-00
	10	●	0.63/0.11/85/C	2	100108-511-00
	25 - 100	●	0.63/0.11/85/C	2	100108-500-00
	250 - 500	●	0.63/0.32/85/C	2	100108-503-00
	250 - 500	●	0.72/0.37/85/LC	2	100108-504-00
	1000	●	0.63/0.32/85/C	2	100108-507-00
	1000	●	0.72/0.37/85/LC	2	100108-508-00

GERSTEL TriStar syringes *for liquid injection*

For MPS robotic tool D18/57

with replaceable needle	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
	1000	●	0.72/0.37/57/LC	1	100109-000-00
	1000	●	1.07/0.65/57/LC	1	100109-001-00
replacement plunger					
	1000	●		1	100109-800-00
replacement needle					
	1000	●	0.63/0.32/57/C	2	100109-500-00
	1000	●	0.72/0.37/57/LC	2	100109-501-00
	1000	●	1.07/0.65/57/LC	2	100108-502-00

Mikroliter-Spritze *für Flüssigaufgabe*

For MPS robotic tool D7/57

with fixed needle	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
	5		0.63/0.11/57/C	1	100104-001-00
	10		0.63/0.11/57/C	1	100104-010-00
	10	●	0.63/0.11/57/C	1	100104-100-00
	50	●	0.63/0.11/57/C	1	100104-102-00
	100	●	0.63/0.11/57/C	1	100104-101-00
replacement plunger					
	50	●		1	100104-802-00
	100	●		1	100104-803-00

GERSTEL TriStar HS syringe *for Headspace injection*

For MPS robotic Headspace tool HS 1000; HS 2500

with replaceable needle	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
for HS tool HS 1000	1000	●	0.63/0.32/65/H	1	100106-000-00
for HS tool HS 2500	2500	●	0.63/0.32/65/H	1	100106-001-00
replacement plunger					
	1000	●		1	100106-800-00
	2500	●		1	100106-801-00
replacement needle					
	1000 - 2500	●	0.63/0.32/65/H	2	100106-500-00



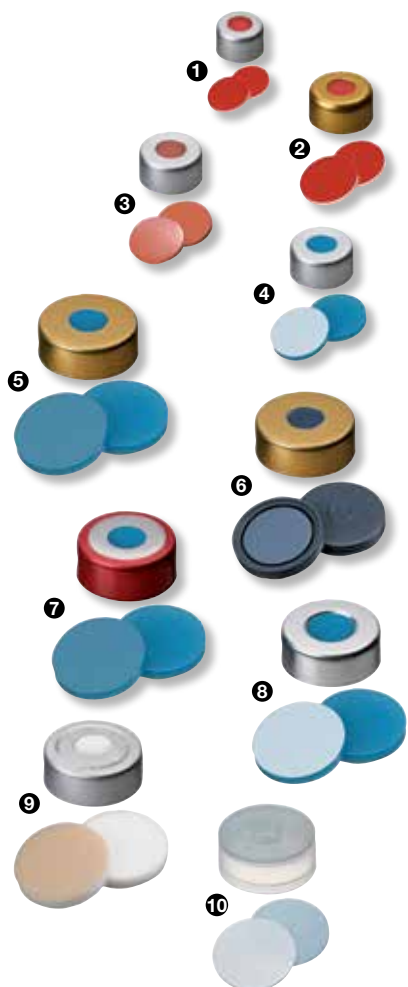
Sample vials and caps

Crimp cap vials

Type	mL	Seal size (mm)	unit	Part no.
clear	0.7	8	100	093640-052-00 ①
clear	1.5	11	100	093640-004-00 ②
clear	2.5	11	100	093640-074-00 ③
clear	10	20	100	093640-005-00 ④
clear	10	20	1000	093640-069-00 ④
clear	20	20	100	093640-006-00 ⑤
clear	20	20	1000	093640-068-00 ⑤
clear	25	20	100	093640-073-00 ⑥
clear	100	20	88	093640-062-00 ⑥
Solvent bottle, includes cap & septum	100	20	1	093631-054-00 ⑦

Crimp caps with septum for vials

If vials need to be reopened and emptied after analysis, magnetic vial caps with aluminum edges (Bi-metal) offer the best solution. The softer edges allow easy crimping and decrimping using a hand-crimper. If steel caps are used, it is recommended to use a bench-top crimper.



Type	for Seal size (mm)	unit	Part no.
Aluminum Septum: Silicone white/PTFE red,	8	100	093640-053-00 ①
Magnetic, golden Septum: Silicone red/PTFE red,	11	100	093640-007-00 ②
Aluminum Septum: natural rubber red-orange/ PTFE Transparent, 60° shore A,	11	100	093640-089-00 ③
Aluminum Septum: Silicone blue/PTFE white, 45° shore A,	11	100	093640-090-00 ④
Magnetic, golden, Septum: Silicone blue, PTFE white	20 20	100 1000	093640-008-00 ⑤ 093640-015-00 ⑤
Magnetic, golden, Pharma-Fix-Septum: Butyl /PTFE white,	20	100	093640-070-00 ⑥
Bi-Metal, Magnetic, red, Septum: Silicone blue, PTFE white,	20	100	093640-063-00 ⑦
Aluminum, Septum: Silicone blue/PTFE white, 35° Shore A,	20	100	093640-067-00 ⑧
Aluminum, Septum: Silicone white, PTFE beige, 35° Shore A,	20	100	011912-002-00 ⑨
PE Cap, transparent Septum: Silicone blue/PTFE white 45° Shore A,	20	10	093640-097-00 ⑩

Vials for SPME

Type	mL	Seal size (mm)	unit	Part no.
Clear, with imprint »SPME« with extra thick crimp neck	20	20	100	093640-035-00

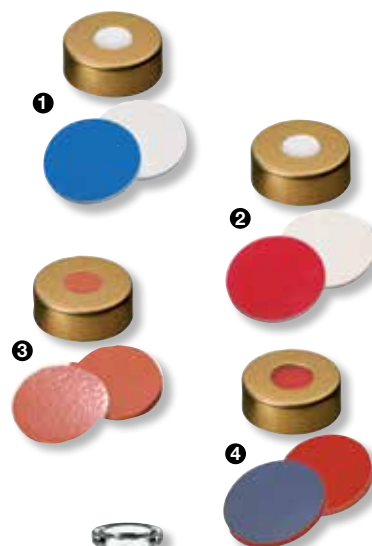


Crimp caps for SPME

Magnetic, golden, with septum

For SPME applications, crimp caps of steel with silicone septa are recommended. If the sample is analyzed for silicone, it is recommended to use butyl rubber septa or natural rubber septa. For a leak-free seal, it is recommended to use a bench-top crimper.

Type	for Seal size (mm)	unit	Part no.
Septum: Silicone white/PTFE blue, 1.5 mm, 60° Shore A, for SPME vial	20	100	093640-030-00 ①
Septum: Silicone creme, PTFE red, 1.5 mm, 55° Shore A, for SPME vial	20	100	093640-031-00 ②
Septum: Natural rubber, red-orange/PTFE, 1.3 mm, 60° Shore A, for SPME vial	20	100	093640-034-00 ③
Septum: Butyl red / PTFE grey, 1.3 mm, 55° Shore A, for SPME vial	20	100	093640-050-00 ④



Vials, inserts, and caps for HSSE Twister inserts

Type	mL	Seal size (mm)	unit	Part no.
Clear, with imprint »Twister«, with extra thick crimp neck	20	20	100	012491-000-00
Insert for Twister Vial 012491-000-00			100	012492-000-00
Aluminium Headspace Crimp cap, Septum: Silicone white/PTFE beige, 3.25mm, 35° shore A		20	100	011912-002-00





Screw cap vials

Vials	mL	Thread Ø	unit	Part no.
Clear, Ø11.6 x 32 mm, for 20 mm Twisters	1.1	9	100	093640-045-00 ①
Clear, Ø11.6 x 32 mm, for 10 mm Twisters	1.5	9	100	093640-046-00 ②
Brown, green screw caps, Septum: PTFE/Silicone/PTFE	1.5	9	100	089355-084-00 ③
Clear, blue screw caps, Septum: rubber red/PTFE	1.5	9	100	089355-085-00 ④
Brown, Ø11.6 x 32 mm, short screw neck	1.5	9	100	093640-095-00 ⑤
Clear, Ø15 x 45 mm HIGH RECOVERY VIAL	3.5	11	100	093640-098-00 ⑥
Clear, Ø14.7 x 45 mm	4	11	100	093640-076-00 ⑦
Clear,	10	18	100	093640-038-00 ⑧
Brown	10	18	100	093640-039-00 ⑨
Clear,	20	18	100	093640-036-00 ⑩
Brown,	20	18	100	093640-037-00 ⑪
Clear, Ø27.5 x 95 mm	40	18	100	094210-000-00 ⑫
Microliter inserts for 2 mL screw cap vials, clear	0.1		100	093640-029-00 ⑬
For 10 mm Twisters: Insert Ø 6 x 31 mm, clear, flat bottom	0.2		100	093640-047-00 ⑭

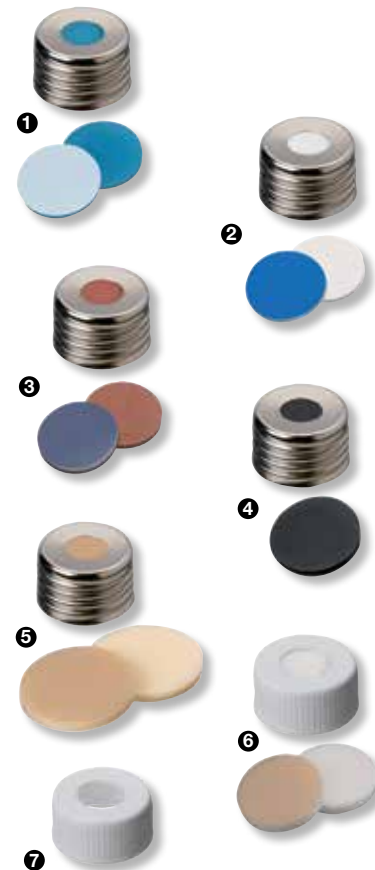
Screw caps with septa

	Thread Ø	unit	Part no.
PP transparent, Septum: Silicone blue / PTFE white, 1.3 mm, 45° Shore A	9	100	093640-072-00 ①
PP blue, Septum: Silicone white/PTFE red, 1.0 mm, 55° shore A	9	100	093640-075-00 ②
UltraClean™, magnetic, golden Septum: Silicone white/PTFE red 1.0 mm	9	100	093640-079-00 ③
PP black, Septum: Silicon blue/PTFE white, 1.3 mm 45° shore A	11	100	093640-081-00 ④
PP black, Septum: Natural rubber red-orange/ TEF transparent, 1.3 mm	11	100	093640-077-00 ⑤

Screw caps with septa

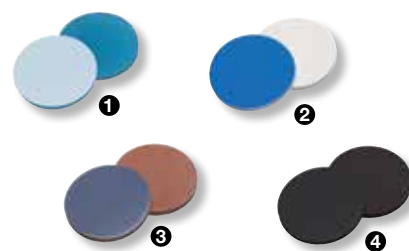
Magnetic metal based vial caps enable transport and automation using the GERSTEL MultiPurpose Sampler

	Thread Ø	unit	Part no.
Septum: Silicone blue / PTFE white, 1.3 mm, 45° Shore A	18	100	093640-040-00 ①
Septum: Silicon white / PTFE blue, 1.5 mm, 60° Shore A	18	100	093640-041-00 ②
Septum: Butyl red / PTFE grey, 1.6 mm, 55° Shore A	18	100	093640-042-00 ③
Septum: Viton black, 1.0 mm, 75° Shore A	18	100	093640-043-00 ④
Septum: Natural rubber / TEF; 1.3 mm, 60° Shore A	18	100	093640-100-00 ⑤
Polypropylene white, non-magnetic Septum: Silicone natural / PTFE beige, 3.2 mm; 45° Shore A,	18	100	094210-003-00 ⑥
Polypropylene white, non-magnetic with hole 12.5 mm without Septum	18	100	094210-001-00 ⑦



Septa for screw caps for 10/20 mL screw cap vials

Septum	unit	Part no
Silicone blue transparent / PTFE white, 1.3 mm, 35° Shore A	100	093640-057-00 ①
Silicone white / PTFE blue, 1.5 mm, 60° Shore A	100	093640-056-00 ②
Butyl red / PTFE grey, 1.6 mm, 55° Shore A	100	093640-058-00 ③
Viton black, 1.0 mm, 75° Shore A	100	093640-059-00 ④



Filter inserts 17 µm for 10/20 mL screw cap vials

without vials and screw caps

For:

10 mL screw cap vials 093640-038-00 and
20 mL screw cap vials 093640-036-00
with screw cap 093640-040-00

50 units	020006-050-00
1000 units	020006-100-00
5000 units	020006-500-00



Part No.

SPME fiber kits

1 package (3 units)

Fibers used for automated SPME analysis have no spring – in contrast to fibers for manual SPME. Consequently, there are separate holders for each fiber type. The fibers listed here are designed exclusively for automated SPME analysis using the MPS. They are not suitable for manual SPME analysis.

For use with the GERSTEL® Cooled Injection System, CIS
23 gauge (OD=0.63 mm) fibers and SPME liner are recommended.



gases and low molecular compounds

- 75 µm carboxen/polydimethylsiloxane 23 gauge (OD = 0.63 mm) **093639-009-00**

gases and low molecular compounds

- 85 µm carboxen/polydimethylsiloxane, on StableFlex™ fiber 23 gauge (OD = 0.63 mm) **093639-024-00**

volatiles and semivolatiles

- 85 µm polyacrylate
- 100 µm polydimethylsiloxane
- 7 µm polydimethylsiloxane coating 23 gauge (OD = 0.63 mm) **093639-028-00**

volatile or polar organics in water

- 75 µm carboxen/polydimethylsiloxane
- 65 µm polydimethylsiloxane/divinylbenzene
- 85 µm polyacrylate 23 gauge (OD = 0.63 mm) **093639-029-00**

flavors and odors

- 100 µm polydimethylsiloxane,
- 65 µm polydimethylsiloxane/divinylbenzene,
- 75 µm carboxen/polydimethylsiloxane 23 gauge (OD = 0.63 mm) **093639-030-00**

flavors

- 50/30 µm divinylbenzene/carboxen/polydimethylsiloxane on StableFlex fiber 23 gauge (OD = 0.63 mm) **093639-026-00**
- 50/30 µm DVB/carboxen/polydimethylsiloxane on 2 cm StableFlex fiber 23 gauge (OD = 0.63 mm) **093639-027-00**
- 100 µm polydimethylsiloxane
- 85 µm carboxen/polydimethylsiloxane
- 50/30 µm DVB/carboxen/polydimethylsiloxane 23 gauge (OD = 0.63 mm) **093639-037-00**

Part No.

SPME fiber kits

for automated SPME using the MPS;
1 package (3 units)

volatiles

- 100 µm polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-001-00**

non-polar semivolatiles

- 30 µm polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-020-00**

non-polar high molecular weight compounds

- 7 µm polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-021-00**

volatiles, amines, and nitroaromatic compounds

- 65 µm polydimethylsiloxane/divinylbenzene, partially crosslinked
23 gauge (OD = 0.63 mm) **093639-005-00**

volatiles, amines, and nitroaromatic compounds

- 65 µm polydimethylsiloxane/divinylbenzene, highly crosslinked on StableFlex fiber
23 gauge (OD = 0.63 mm) **093639-022-00**

polar semivolatiles

- 85 µm polyacrylate, partially crosslinked
23 gauge (OD = 0.63 mm) **093639-023-00**
- 60 µm Carbowax-Polyethylene Glycol on metal fiber
23 gauge (OD = 0.63 mm) **093639-043-00**

SPME Stableflex fiber kits

23 gauge (OD = 0.63 mm), 4 fibers

- 50/30 µm Divinylbenzene/Carboxen
 - 65 µm Polydimethylsiloxane/Divinylbenzene
 - 85 µm Carboxen/Polydimethylsiloxane
 - 85 µm Polyacrylat
- 23 gauge (OD = 0.63 mm) **093639-031-00**

SPME metal fiber kits

23 gauge (OD = 0.63 mm), 1 fiber

volatiles

- 100 µm polydimethylsiloxane, non-bonded
23 gauge (OD = 0.63 mm) **093639-033-00**

non-polar semivolatiles

- 30 µm polydimethylsiloxane, non bonded
23 gauge (OD = 0.63 mm) **093639-034-00**

non-polar high molecular weight compounds

- 7 µm polydimethylsiloxane, bonded
23 gauge (OD = 0.63 mm) **093639-035-00**

volatiles, amines, and nitroaromatic compounds

- 65 µm polydimethylsiloxane/divinylbenzene
23 gauge (OD = 0.63 mm) **093639-038-00**

flavors

- 50/30 µm divinylbenzene/carboxen Polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-040-00**
- fiber length 2 cm
23 gauge (OD = 0.63 mm) **093639-041-00**



Part No.

Sample loop

SS Sample loop 1/16" for Cheminert injection valve



2 µL	093731-154-00
5 µL	093731-224-00
10 µL	093731-153-00
20 µL	093731-034-00
25 µL	093731-243-00
50 µL	093731-033-00
100 µL	093731-032-00
250 µL	093731-031-00
500 µL	093731-030-00
1000 µL	093731-107-00
2000 µL	093731-108-00
5000 µL	093731-109-00

Sulfinert Sample loop 1/16" for Cheminert injection valve

100 µL	093731-123-00
500 µL	093731-124-00
1000 µL	093731-125-00

PEEK Sample loop 1/16" for Cheminert PAEK injection valve



2 µL	093731-158-00
3 µL	093731-265-00
5 µL	093731-157-00
10 µL	093731-156-00
20 µL	093731-155-00
50 µL	093731-184-00

Part No.

SS Sample loop 1/16" for Valco W-Type injection valve

2 µL	093731-049-00
5 µL	093731-050-00
10 µL	093731-051-00
15 µL	093731-052-00
20 µL	093731-011-00
25 µL	093731-053-00
30 µL	093731-054-00
50 µL	093731-010-00
100 µL	093731-009-00
200 µL	093731-070-00
250 µL	093731-055-00
500 µL	093731-008-00
1000 µL	093731-007-00



SS Sample loop 1/16" for Rheodyne injection valve

5 µL	093731-129-00
10 µL	093731-130-00
20 µL	093731-131-00
50 µL	093731-132-00
100 µL	093731-133-00
500 µL	093731-248-00
1000 µL	093731-249-00

PEEK Sample loop 1/16" for Rheodyne injection valve

5 µL	093731-134-00
10 µL	093731-135-00
20 µL	093731-136-00
50 µL	093731-137-00
100 µL	093731-138-00



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Ver. 2015/31/08

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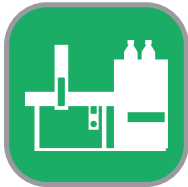
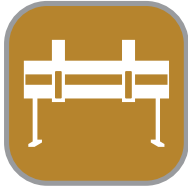
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GERSTEL
certified

SUPPLIES



MultiPurpose Sampler MPS

*New Version with
GERSTEL TriStar syringes
and conversion table*



GERSTEL® MultiPurpose Sampler MPS

Versatile autosampler and sample preparation robot for GC/MS, LC/MS, and standalone WorkStation operation.

Modern laboratory processes frequently offer significant potential for improvement in the fields of sample preparation and sample introduction. Improving productivity and performance while cutting per sample cost is realistic provided you have chosen an autosampler that rises to the task and can be adapted to meet new challenges as demands change.

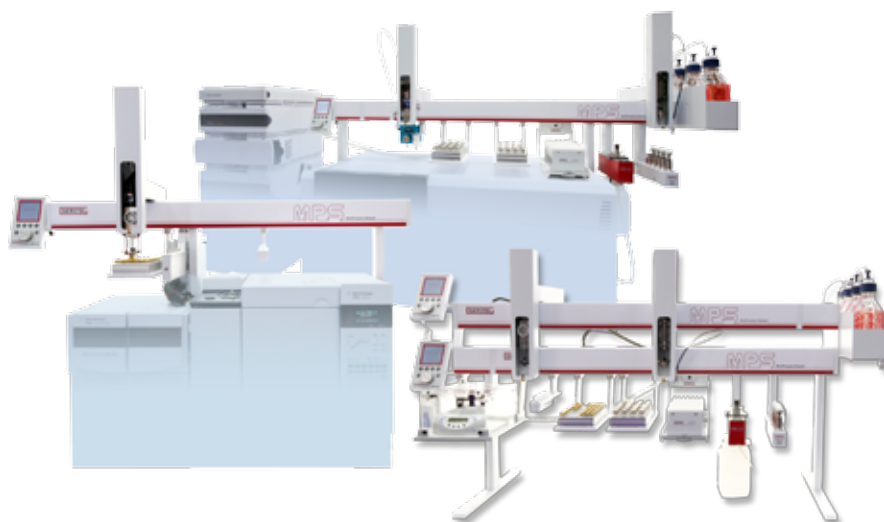
The GERSTEL MultiPurpose Sampler MPS enables highly efficient automation of sample preparation and sample introduction for GC/MS and LC/MS. Or you can use the MPS as WorkStation independent of the analysis system(s), providing prepared samples for multiple techniques in the lab. Whichever MPS you choose, you are sure to get reliable results and increased throughput combined with the flexibility to adapt effortlessly to changes and new challenges.

This Supplies catalogue provides a list of certified consumables, accessories and spare parts essential for the smooth operation of your GERSTEL® MPS. You have the right to demand the highest quality performance from GERSTEL systems and we have compiled this list so that this performance can be maintained throughout the life of your system. Please use only consumables, accessories and spare parts provided by GERSTEL. All GERSTEL products are made to exact specifications. Use of products not approved by GERSTEL can cause system malfunction or damage and may void system warranty.

If you have any questions please do not hesitate to contact GERSTEL. Typically, the most efficient way is to contact your local sales representative.

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GERSTEL Syringe kit 10 µL with Universal Syringe Holder

consisting of:
 GERSTEL universal syringe holder;
 plunger holder;
 2 syringes 10 µL

volume µL	units	Part No.
10	1	010054-000-00



GERSTEL Headspace Syringe kit

consisting of:
 GERSTEL universal headspace syringe holder;
 plunger holder;
 2 syringes

volume mL	units	Part No.
1.0	1	010055-010-00
2.5	1	010055-025-00

CTC Syringe Holders



volume µL	units	Part No.
10	1	093632-000-00
25	1	093632-001-00
100	1	093632-002-00
250	1	093632-003-00
500	1	093632-004-00
1000	1	093632-005-00
2500	1	093632-012-00
5000	1	093632-013-00

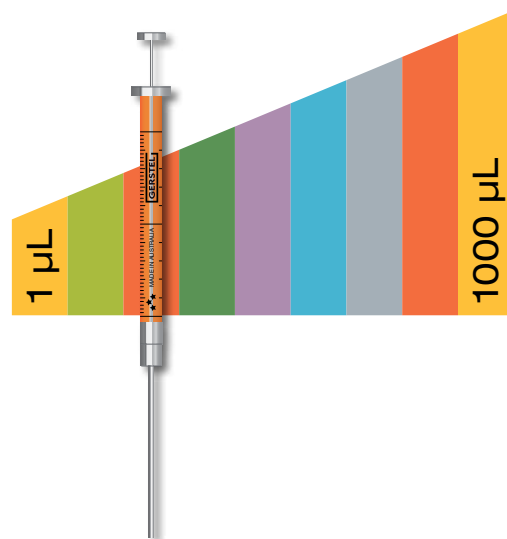
GERSTEL TriStar Syringes

Autosampler Syringes for the MPS

You need an excellent autosampler syringe in order to perform complex sample preparation methods and reliably inject large series of samples to a chromatography system. Lowest possible sample to sample carry-over and highest accuracy are required. Modern mass spectrometers detect every trace contamination placing high demands on rinsing, solvent quality and syringe quality. GERSTEL TriStar Syringes are designed and produced to meet these demands. The rugged and inert materials used provide resilience to solvents, expanded temperature range and long life expectancy. The number of cycles that can be performed with TriStar syringes has been expanded by a factor of up to ten compared with standard syringes.

The TriStar syringe series offers several improvements to minimize or eliminate sources for carry-over, such as reduced residual volumes and active sites inside the syringe.

The sample is kept clean and uncontaminated, and the needle remains solidly mounted without the risk of solvent attacking the glue. GERSTEL TriStar Syringes for the GERSTEL MPS are available in all standard sizes.



Benefits of the GERSTEL TriStar Syringes

Color coded

- Easy selection of the correct syringe volume through clear and unambiguous color coding
- Reliable analysis, the risk of incorrect syringe selection is minimized

Inert, rugged material

- Reliable analysis performance with solvent-resistant surfaces
- Extended temperature range for increased ruggedness and application range
- Long life span with reliable operation

Optimized assembly

- Carry-over minimized through reduced residual volumes in the plunger assembly, improved surfaces and PTFE surface sealing
- Carry over and contamination reduced through improved syringe-to-needle connection, eliminating cavities and contact with glue.
- Active plunger tip provides improved Headspace syringe sealing and reduced temperature equilibration times resulting in improved flexibility and productivity

Compatibility:

- Previous versions plungers and needles can be used for TriStar syringes, but it is not recommended to use TriStar plungers and needles for previous version syringes.

Color	Syringe volume	
Yellow	1 µL	1 mL
Lime	5 µL	5 mL
Dark Orange	10 µL	
Green	25 µL	
Purple	50 µL	
Aqua	100 µL	
Grey	250 µL	2.5 mL
Dark Orange	500 µL	

GERSTEL TriStar syringes for GC & GC/MS

for liquid injection



The listed syringes all have 23 Gauge needles (OD = 0.63 mm) and are compatible with the GERSTEL® Septumless Head (SLH). Needles have conical tips (type C or AS).

For GERSTEL Universal syringe holder (013822-000-00).
For use with ALEX/TDU/DHS Gripper (Not for SPE/DPX gripper)



with fixed needle	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
needle in needle	1.2		0.5/.../.../26P	1	093611-010-00
	5		0.63/0.11/52.2/C	1	022000-000-00
	10		0.47/0.11/52.2/C	1	022000-052-00
	10		0.63/0.11/52.2/C	1	022000-050-00
	10	●	0.63/0.11/52.2/C	1	022000-051-00
replacement plunger* for syringe 022000-051-00	10	●		1	022000-400-00



with replaceable needle	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
	5		0.63/0.11/51.5/C	1	022000-001-00
	10	●	0.63/0.11/51.6/C	1	022000-053-00
	100	●	0.63/0.24/52.0/C	1	022000-200-00
	250	●	0.63/0.24/52.0/C	1	022000-250-00
	500	●	0.63/0.24/52.0/C	1	022000-251-00
	1000	●	0.63/0.32/53.5/C	1	022000-300-00
replacement plunger*	10	●		1	022000-401-00
	100	●		1	022000-550-00
	250	●		1	022000-600-00
	500	●		1	022000-601-00
	1000	●		1	022000-650-00
replacement needle*	5		0.63/0.11/51.5/C	2	022000-800-00
	10		0.63/0.11/51.6/C	2	022000-801-00
	10 (On Column)		0.47/0.11/51.5/C	2	022000-802-00
	100-500		0.63/0.24/52.0/C	2	022000-805-00
	100-500		0.72/0.37/51.0/LC	5	009970-069-00
	1000		0.63/0.32/53.5/C	2	022000-806-00
	1000		0.72/0.37/53.5/LC	2	022000-807-00

*Replacement plungers and -needles for TriStar and previous syringe versions are compatible, see conversion table on page 22

Microliter syringes for GC & GC/MS

for liquid injection

CTC Syringe Holders for GC and GC/MS.

Syringes for use only with dedicated syringe holders, specific to the syringe size.

	volume μL	gastight	needle Gauge/Type	unit	Part No.
needle in needle	1.2		26-AS	1	093611-010-00
with fixed needle	5		26P-AS	1	093611-011-00
with fixed needle	10		26S-AS	1	093611-012-00
with fixed needle	10	●	26S-AS	1	093611-063-00
with fixed needle	10		26S-2	1	093611-013-00
with fixed needle	10		23S-AS	1	093611-068-00
with fixed needle	25	●	26P-AS	1	093611-014-00
with fixed needle	100	●	26S-AS	1	093611-015-00
with fixed needle	250	●	26P-AS	1	093611-016-00



Syringes for 10μL CTC Syringe Holder (093632-000-00) for GC and GC/MS.

Syringe holder type detection must be deactivated during operation.

Not compatible with TDU/ALEX or SPE/DPX gripper.

	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
with fixed needle	5		0.63/.../50.0/C	1	022003-000-00
with fixed needle	10		0.63/.../50.0/C	1	022003-050-00
with fixed needle	25	●	0.63/.../50.0/C	1	009970-004-00
with replaceable needle	100	●	0.63/0.15/50.0/C	1	009970-005-00
with replaceable needle	250	●	0.63/0.15/50.0/C	1	009970-006-00
replacement needle*	100-250		0.63/0.15/50.0/C	2	022003-800-00



*Replacement plungers and -needles for TriStar and previous syringe versions are compatible, see conversion table on page 22

Part No.



GERSTEL TriStar HS syringes for Headspace injection up to 100°C



	volume mL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
with replaceable needle	1	●	0.63/0.15/57.0/HS	1	022001-301-00
with replaceable needle	2.5	●	0.63/0.15/57.0/HS	1	022001-326-00
replacement plunger*					
	1	●		1	022002-651-00
	2.5	●		1	022002-701-00
replacement needle*					
	1 - 2.5		0.63/0.15/57.0/HS	2	022001-802-00
	1 - 2.5		0.63/0.32/57.0/HS	2	022001-803-00



GERSTEL TriStar HS syringes for Headspace injection up to 150°C



	volume mL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
with replaceable needle	1	●	0.63/0.15/57.0/HS	1	022001-300-00
with replaceable needle	2.5	●	0.63/0.15/57.0/HS	1	022001-325-00
replacement plunger*					
	1	●		1	022002-650-00
	2.5	●		1	022002-700-00
replacement needle*					
	1		0.63/0.15/57.0/HS	2	022001-802-00
	2.5		0.63/0.32/57.0/HS	2	022001-803-00

*Replacement plungers and -needles for TriStar and previous syringe versions are compatible, see conversion table on page 22

Part No.

GERSTEL TriStar (heated operation) syringes

for use with HS syringe holder and adapter 010711-000-00



	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
with fixed needle	10		0.63/0.11/59.1/C	1	022001-050-00
with replaceable needle	10	●	0.63/0.11/53.1/C	10	022001-051-00
	10		0.63/0.11/53.1/C	1	022001-052-00
replacement needle*	10		0.63/0.11/53.1/C	2	022001-800-00

	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
with replaceable needle	100	●	Please note: Before use with the heated syringe holder the standard needle must be replaced with needle 022001-801-00	1	022000-200-00
with replaceable needle	250	●		1	022000-250-00
replacement plunger*	100	●		1	022000-550-00
	250	●		1	022000-600-00
replacement needle*	100-500		0.63/0.24/57.0/C	2	022001-801-00



*Replacement plungers and -needles for TriStar and previous syringe versions are compatible, see conversion table on page 22



Microliter syringes for LC & LC/MS

The needle types 22 and 22S have the same outer diameter: 0.72 mm OD and a straight needle tip (Type LC or 3). Type 22 and 22S differ only by their internal diameter (0.41 mm and 0.15 mm ID respectively); Due to the larger ID, a type 22 needle enables faster syringe filling: Up to 200 µL/sec for type 22 as opposed to 10 – 20 µL/sec for the 22S.



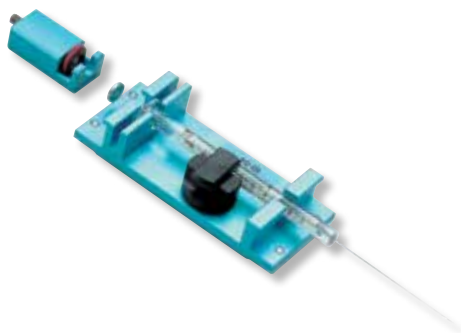
volume µL	Type	needle gauge	unit	Part No.
10	C	22S	1	093711-014-00
25	C	22S	1	093711-001-00
25	X	22S	1	093711-042-00
50	X	22S	1	093711-053-00
100	C	22S	1	093711-002-00
100	C	22	1	093711-028-00
100	X	22S	1	093711-043-00
100	X	22	1	093711-044-00
250	C	22	1	093711-003-00
500	C	22	1	093711-027-00
1000	C	22	1	093711-004-00
2500	C	22	1	093711-005-00
5000	C	22	1	093711-006-00
5000		19	1	093731-113-00

replacement plunger

10	C		10	093611-026-00
25	C		10	093611-020-00
25	X		3	093711-048-00
50	X		3	093711-054-00
100	C		10	093611-021-00
100	X		3	093711-049-00
250	C		10	093611-022-00
500	C		10	093711-026-00
1000	C		1	093711-019-00
2500	C		1	093711-020-00
5000	C		1	093711-021-00

Syringe kits for LC & LC/MS

with syringe detect, consisting of: plunger holder, syringe adapter and 2 syringes



volume µL	Type	needle gauge	unit	Part no.
10	C	22S	1	093711-007-00
25	C	22S	1	093711-008-00
25	X	22S	1	093711-045-00
50	X	22S	1	093711-051-00
100	C	22S	1	093711-009-00
100	X	22S	1	093711-046-00
100	X	22	1	093711-052-00
250	C	22	1	093711-010-00
500	C	22	1	093711-047-00
1000	C	22	1	093711-011-00
2500	C	22	1	093711-012-00
5000	C	22	1	093711-013-00

GERSTEL TriStar syringes for SPE/DPX

for use with GERSTEL Solid Phase Extraction (SPE) and GERSTEL Disposable Pipette Extraction (DPX)

	volume μL	gastight	needle OD/ID/L/Tip [mm]	unit	Part No.
with replaceable needle	1000	●	without needle	1	022002-300-00
with replaceable needle	2500	●	without needle	1	022002-325-00
with replaceable needle	5000	●	without needle	1	009970-071-00
replacement plunger*					
	1000	●		1	022002-650-00
	2500	●		1	022002-700-00
	5000	●		1	009970-066-00
replacement needle*					
	1000-2500		0.63/0.36/57.0/C	2	022002-800-00
	1000-2500		0.72/0.37/57.0/LC	2	022002-801-00
	5000		0.72/0.37/56.0/LC	2	022002-804-00
	1000-2500		0.63/0.36/60.0/C	2	022002-802-00
	1000-2500		0.72/0.37/60.0/LC	2	022002-803-00
	5000		0.72/0.37/60.0/LC	2	022002-805-00
	5000		0.63/0.32/56.0/HS	2	022002-806-00



*Replacement plungers and -needles for TriStar and previous syringe versions are compatible, see conversion table on page 22

MPS dilutor syringes

	volume	unit	Part No.
Syringe	1 mL	1	093631-091-00
	2.5 mL	1	093631-092-00
	5 mL	1	093631-093-00
	10 mL	1	093631-094-00
replacement plunger			
	1 mL	1	093632-038-00
	2.5 mL	1	093632-039-00
	5 mL	1	093632-040-00
	10 mL	1	093632-041-00
PTFE ferrule		1	093632-045-00



MPS sideport syringes without needle

For use with MPS sideport syringe adapter (not compatible with GERSTEL® Universal Syringe holder)

	volume μL	gastight	needle Gauge/Type	unit	Part No.
for replaceable needle	20	●	without needle	1	093631-096-00
for replaceable needle	80	●	without needle	1	093631-095-00
replacement plunger					
	20	●		10	093611-034-00
	80	●		10	093611-027-00
replacement needle					
	20		22 s/PS3	3	093711-023-00
	20		26/AS	3	093611-029-00
	80		22/PS3	3	093711-022-00
	80		26/AS	3	093611-028-00





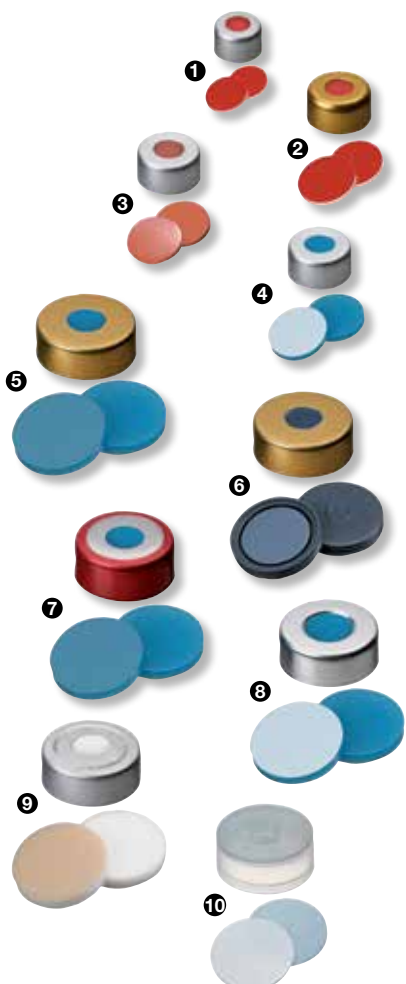
Sample vials and caps

Crimp cap vials

Type	mL	Seal size (mm)	unit	Part no.
clear	0.7	8	100	093640-052-00 ①
clear	1.5	11	100	093640-004-00 ②
clear	2.5	11	100	093640-074-00 ③
clear	10	20	100	093640-005-00 ④
clear	10	20	1000	093640-069-00 ④
clear	20	20	100	093640-006-00 ⑤
clear	20	20	1000	093640-068-00 ⑤
clear	25	20	100	093640-073-00 ⑥
clear	100	20	88	093640-062-00 ⑥
Solvent bottle, includes cap & septum	100	20	1	093631-054-00 ⑦

Crimp caps with septum for vials

If vials need to be reopened and emptied after analysis, magnetic vial caps with aluminum edges (Bi-metal) offer the best solution. The softer edges allow easy crimping and decrimping using a hand-crimper. If steel caps are used, it is recommended to use a bench-top crimper.



Type	for Seal size (mm)	unit	Part no.
Aluminum Septum: Silicone white/PTFE red,	8	100	093640-053-00 ①
Magnetic, golden Septum: Silicone red/PTFE red,	11	100	093640-007-00 ②
Aluminum Septum: natural rubber red-orange/ PTFE Transparent, 60° shore A,	11	100	093640-089-00 ③
Aluminum Septum: Silicone blue/PTFE white, 45° shore A,	11	100	093640-090-00 ④
Magnetic, golden, Septum: Silicone blue, PTFE white	20 20	100 1000	093640-008-00 ⑤ 093640-015-00 ⑤
Magnetic, golden, Pharma-Fix-Septum: Butyl /PTFE white,	20	100	093640-070-00 ⑥
Bi-Metal, Magnetic, red, Septum: Silicone blue, PTFE white,	20	100	093640-063-00 ⑦
Aluminum, Septum: Silicone blue/PTFE white, 35° Shore A,	20	100	093640-067-00 ⑧
Aluminum, Septum: Silicone white, PTFE beige, 35° Shore A,	20	100	011912-002-00 ⑨
PE Cap, transparent Septum: Silicone blue/PTFE white 45° Shore A,	20	10	093640-097-00 ⑩

Vials for SPME

Type	mL	Seal size (mm)	unit	Part no.
Clear, with imprint »SPME« with extra thick crimp neck	20	20	100	093640-035-00

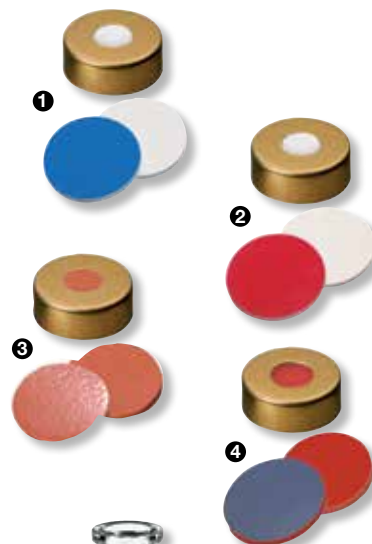


Crimp caps for SPME

Magnetic, golden, with septum

For SPME applications, crimp caps of steel with silicone septa are recommended. If the sample is analyzed for silicone, it is recommended to use butyl rubber septa or natural rubber septa. For a leak-free seal, it is recommended to use a bench-top crimper.

Type	for Seal size (mm)	unit	Part no.
Septum: Silicone white/PTFE blue, 1.5 mm, 60° Shore A, for SPME vial	20	100	093640-030-00 ①
Septum: Silicone creme, PTFE red, 1.5 mm, 55° Shore A, for SPME vial	20	100	093640-031-00 ②
Septum: Natural rubber, red-orange/PTFE, 1.3 mm, 60° Shore A, for SPME vial	20	100	093640-034-00 ③
Septum: Butyl red / PTFE grey, 1.3 mm, 55° Shore A, for SPME vial	20	100	093640-050-00 ④



Vials, inserts, and caps for HSSE Twister inserts

Type	mL	Seal size (mm)	unit	Part no.
Clear, with imprint »Twister«, with extra thick crimp neck	20	20	100	012491-000-00
Insert for Twister Vial 012491-000-00			100	012492-000-00
Aluminium Headspace Crimp cap, Septum: Silicone white/PTFE beige, 3.25mm, 35° shore A		20	100	011912-002-00





Screw cap vials

Vials	mL	Thread Ø	unit	Part no.
Clear, Ø11.6 x 32 mm, for 20 mm Twisters	1.1	9	100	093640-045-00 ①
Clear, Ø11.6 x 32 mm, for 10 mm Twisters	1.5	9	100	093640-046-00 ②
Brown, green screw caps, Septum: PTFE/Silicone/PTFE	1.5	9	100	089355-084-00 ③
Clear, blue screw caps, Septum: rubber red/PTFE	1.5	9	100	089355-085-00 ④
Brown, Ø11.6 x 32 mm, short screw neck	1.5	9	100	093640-095-00 ⑤
Clear, Ø15 x 45 mm HIGH RECOVERY VIAL	3.5	11	100	093640-098-00 ⑥
Clear, Ø14.7 x 45 mm	4	11	100	093640-076-00 ⑦
Clear,	10	18	100	093640-038-00 ⑧
Brown	10	18	100	093640-039-00 ⑨
Clear,	20	18	100	093640-036-00 ⑩
Brown,	20	18	100	093640-037-00 ⑪
Clear, Ø27.5 x 95 mm	40	18	100	094210-000-00 ⑫
Microliter inserts for 2 mL screw cap vials, clear	0.1		100	093640-029-00 ⑬
For 10 mm Twisters: Insert Ø 6 x 31 mm, clear, flat bottom	0.2		100	093640-047-00 ⑭

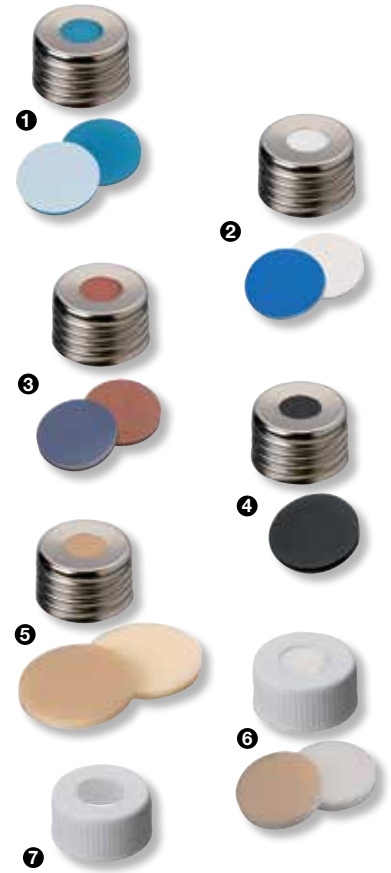
Screw caps with septa

	Thread Ø	unit	Part no.
PP transparent, Septum: Silicone blue / PTFE white, 1.3 mm, 45° Shore A	9	100	093640-072-00 ①
PP blue, Septum: Silicone white/PTFE red, 1.0 mm, 55° shore A	9	100	093640-075-00 ②
UltraClean™, magnetic, golden Septum: Silicone white/PTFE red 1.0 mm	9	100	093640-079-00 ③
PP black, Septum: Silicon blue/PTFE white, 1.3 mm 45° shore A	11	100	093640-081-00 ④
PP black, Septum: Natural rubber red-orange/ TEF transparent, 1.3 mm	11	100	093640-077-00 ⑤

Screw caps with septa

Magnetic metal based vial caps enable transport and automation using the GERSTEL MultiPurpose Sampler

	Thread Ø	unit	Part no.
Septum: Silicone blue / PTFE white, 1.3 mm, 45° Shore A	18	100	093640-040-00 ①
Septum: Silicon white / PTFE blue, 1.5 mm, 60° Shore A	18	100	093640-041-00 ②
Septum: Butyl red / PTFE grey, 1.6 mm, 55° Shore A	18	100	093640-042-00 ③
Septum: Viton black, 1.0 mm, 75° Shore A	18	100	093640-043-00 ④
Septum: Natural rubber / TEF; 1.3 mm, 60° Shore A	18	100	093640-100-00 ⑤
Polypropylene white, non-magnetic Septum: Silicone natural / PTFE beige, 3.2 mm; 45° Shore A,	18	100	094210-003-00 ⑥
Polypropylene white, non-magnetic with hole 12.5 mm without Septum	18	100	094210-001-00 ⑦



Septa for screw caps for 10/20 mL screw cap vials

Septum	unit	Part no
Silicone blue transparent / PTFE white, 1.3 mm, 35° Shore A	100	093640-057-00 ①
Silicone white / PTFE blue, 1.5 mm, 60° Shore A	100	093640-056-00 ②
Butyl red / PTFE grey, 1.6 mm, 55° Shore A	100	093640-058-00 ③
Viton black, 1.0 mm, 75° Shore A	100	093640-059-00 ④



Filter inserts 17 µm for 10/20 mL screw cap vials

without vials and screw caps

For:

10 mL screw cap vials 093640-038-00 and
20 mL screw cap vials 093640-036-00
with screw cap 093640-040-00

50 units	020006-050-00
1000 units	020006-100-00
5000 units	020006-500-00



Part No.



SPME fiber holder

Designed for mounting SPME fibers for automated SPME analysis.

093639-000-00

Fibers used for automated SPME analysis have no spring – in contrast to fibers for manual SPME. Consequently, there are separate holders for each fiber type. The fibers listed here are designed exclusively for automated SPME analysis using the MPS. They are not suitable for manual SPME analysis.

For use with the GERSTEL® Cooled Injection System, CIS
23 gauge (OD=0.63 mm) fibers and SPME liner are recommended.

SPME fiber kits

1 package (3 units)



gases and low molecular compounds

- 75 µm carboxen/polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-009-00**

gases and low molecular compounds

- 85 µm carboxen/polydimethylsiloxane, on StableFlex™ fiber
23 gauge (OD = 0.63 mm) **093639-024-00**

volatiles and semivolatiles

- 85 µm polyacrylate
- 100 µm polydimethylsiloxane
- 7 µm polydimethylsiloxane coating
23 gauge (OD = 0.63 mm) **093639-028-00**

volatile or polar organics in water

- 75 µm carboxen/polydimethylsiloxane
- 65 µm polydimethylsiloxane/divinylbenzene
- 85 µm polyacrylate
23 gauge (OD = 0.63 mm) **093639-029-00**

flavors and odors

- 100 µm polydimethylsiloxane,
- 65 µm polydimethylsiloxane/divinylbenzene,
- 75 µm carboxen/polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-030-00**

flavors

- 50/30 µm divinylbenzene/carboxen/polydimethylsiloxane on StableFlex fiber
23 gauge (OD = 0.63 mm) **093639-026-00**
- 50/30 µm DVB/carboxen/polydimethylsiloxane on 2 cm StableFlex fiber
23 gauge (OD = 0.63 mm) **093639-027-00**

- 100 µm polydimethylsiloxane
- 85 µm carboxen/polydimethylsiloxane
- 50/30 µm DVB/carboxen/polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-037-00**



Part No.

SPME fiber kits

for automated SPME using the MPS;
1 package (3 units)

volatiles

- 100 µm polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-001-00**

non-polar semivolatiles

- 30 µm polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-020-00**

non-polar high molecular weight compounds

- 7 µm polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-021-00**

volatiles, amines, and nitroaromatic compounds

- 65 µm polydimethylsiloxane/divinylbenzene, partially crosslinked
23 gauge (OD = 0.63 mm) **093639-005-00**

volatiles, amines, and nitroaromatic compounds

- 65 µm polydimethylsiloxane/divinylbenzene, highly crosslinked on StableFlex fiber
23 gauge (OD = 0.63 mm) **093639-022-00**

polar semivolatiles

- 85 µm polyacrylate, partially crosslinked
23 gauge (OD = 0.63 mm) **093639-023-00**
- 60 µm Carbowax-Polyethylene Glycol on metal fiber
23 gauge (OD = 0.63 mm) **093639-043-00**

SPME Stableflex fiber kits

23 gauge (OD = 0.63 mm), 4 fibers

- 50/30 µm Divinylbenzene/Carboxen
 - 65 µm Polydimethylsiloxane/Divinylbenzene
 - 85 µm Carboxen/Polydimethylsiloxane
 - 85 µm Polyacrylat
- 23 gauge (OD = 0.63 mm) **093639-031-00**

SPME metal fiber kits

23 gauge (OD = 0.63 mm), 1 fiber

volatiles

- 100 µm polydimethylsiloxane, non-bonded
23 gauge (OD = 0.63 mm) **093639-033-00**

non-polar semivolatiles

- 30 µm polydimethylsiloxane, non bonded
23 gauge (OD = 0.63 mm) **093639-034-00**

non-polar high molecular weight compounds

- 7 µm polydimethylsiloxane, bonded
23 gauge (OD = 0.63 mm) **093639-035-00**

volatiles, amines, and nitroaromatic compounds

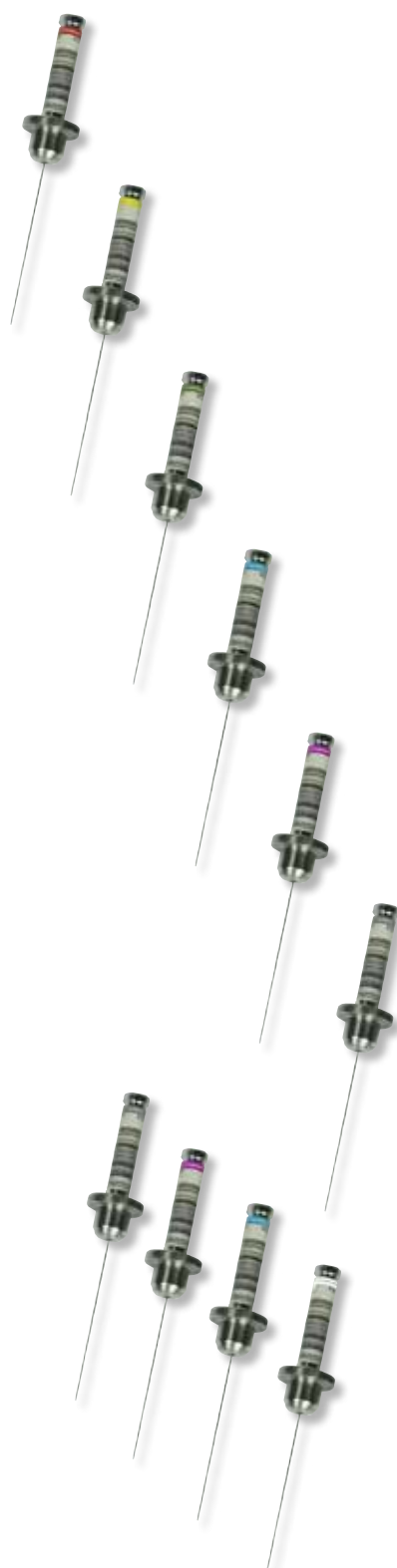
- 65 µm polydimethylsiloxane/divinylbenzene
23 gauge (OD = 0.63 mm) **093639-038-00**

flavors

- 50/30 µm divinylbenzene/carboxen Polydimethylsiloxane
23 gauge (OD = 0.63 mm) **093639-040-00**
- fiber length 2 cm
23 gauge (OD = 0.63 mm) **093639-041-00**



Part No.



MFX SPME Fast Fit Assembly (SPME-FFA)

for SPME MultiFiber Exchange (MFX) with MPS;
1 package (3 units)

volatiles

100 µm polydimethylsiloxane

23 gauge (OD = 0.63 mm) **093639-804-00**

24 gauge **093639-805-00**

non-polar semivolatiles

30 µm polydimethylsiloxane

23 gauge (OD = 0.63 mm) **093639-811-00**

24 gauge **093639-812-00**

non-polar high molecular compounds

7 µm polydimethylsiloxane

23 gauge (OD = 0.63 mm) **093639-823-00**

24 gauge **093639-824-00**

volatiles, amines and nitroaromatic compounds

65 µm polydimethylsiloxane/divinylbenzene on StableFlex fiber

23 gauge (OD = 0.63 mm) **093639-800-00**

24 gauge **093639-801-00**

flavors

50/30 µm divinylbenzene/carboxen/Polydimethylsiloxane on StableFlex fiber

23 gauge (OD = 0.63 mm) **093639-802-00**

24 gauge **093639-803-00**

gases and low molecular compounds

85µm carboxen/polydimethylsiloxane on StableFlex fiber

23 gauge (OD = 0.63 mm) **093639-808-00**

24 gauge **093639-809-00**

polar volatiles

60 µm PEG on StableFlex-Fiber

23 gauge (OD = 0.63 mm) **093639-810-00**

MFX-SPME FFA Stableflex Assortment Kit

23 gauge (OD = 0.63 mm), 4 fibers

50/30 µm DVB/Carboxen/PDMS coating

65 µm PDMS/DVB coating

85 µm Carboxen/PDMS coating

85 µm polyacrylate coating

23 gauge (OD = 0.63 mm) **093639-825-00**

Part No.

MFx SPME FFA Assortment kit 1

23 gauge (OD = 0.63 mm), 3 fibers

volatiles and semivolatiles; consists of:

- ≡ 85 µm polyacrylate coating
- ≡ 100 µm polydimethylsiloxane coating
- ≡ 7 µm polydimethylsiloxane coating

23 gauge (OD = 0.63 mm) **093639-826-00**



MFx SPME FFA Assortment kit 2

23 gauge (OD = 0.63 mm), 3 fibers

volatile or polar organics in water; consists of:

- ≡ 75 µm Carboxen/polydimethylsiloxane coating
- ≡ 65 µm polydimethylsiloxane/divinylbenzene coating
- ≡ 85 µm polyacrylate coating

23 gauge (OD = 0.63 mm) **093639-827-00**



MFx SPME FFA Assortment kit 4

23 gauge (OD = 0.63 mm), 3 fibers

flavors and odors; consists of:

- ≡ 100 µm polydimethylsiloxane coating
- ≡ 65 µm polydimethylsiloxane/divinylbenzene coating
- ≡ 75 µm Carboxen/polydimethylsiloxane coating

23 gauge (OD = 0.63 mm) **093639-828-00**



MFx SPME FFA Assortment kit 5

23 gauge (OD = 0.63 mm), 4 fibers

flavors and odors; consists of:

- ≡ 100 µm polydimethylsiloxane coating
- ≡ 65 µm polydimethylsiloxane/divinylbenzene coating
- ≡ 85 µm Carboxen/polydimethylsiloxane coating
- ≡ 50/30 µm Divinylbenzene/carboxen/polydimethylsiloxane coating

23 gauge (OD = 0.63 mm) **093639-829-00**



Part No.

Sample loop

SS Sample loop 1/16" for Cheminert injection valve



2 µL	093731-154-00
5 µL	093731-224-00
10 µL	093731-153-00
20 µL	093731-034-00
25 µL	093731-243-00
50 µL	093731-033-00
100 µL	093731-032-00
250 µL	093731-031-00
500 µL	093731-030-00
1000 µL	093731-107-00
2000 µL	093731-108-00
5000 µL	093731-109-00

Sulfinert Sample loop 1/16" for Cheminert injection valve

100 µL	093731-123-00
500 µL	093731-124-00
1000 µL	093731-125-00

PEEK Sample loop 1/16" for Cheminert PAEK injection valve



2 µL	093731-158-00
3 µL	093731-265-00
5 µL	093731-157-00
10 µL	093731-156-00
20 µL	093731-155-00
50 µL	093731-184-00

Part No.

SS Sample loop 1/16" for Valco W-Type injection valve

2 µL	093731-049-00
5 µL	093731-050-00
10 µL	093731-051-00
15 µL	093731-052-00
20 µL	093731-011-00
25 µL	093731-053-00
30 µL	093731-054-00
50 µL	093731-010-00
100 µL	093731-009-00
200 µL	093731-070-00
250 µL	093731-055-00
500 µL	093731-008-00
1000 µL	093731-007-00



SS Sample loop 1/16" for Rheodyne injection valve

5 µL	093731-129-00
10 µL	093731-130-00
20 µL	093731-131-00
50 µL	093731-132-00
100 µL	093731-133-00
500 µL	093731-248-00
1000 µL	093731-249-00

PEEK Sample loop 1/16" for Rheodyne injection valve

5 µL	093731-134-00
10 µL	093731-135-00
20 µL	093731-136-00
50 µL	093731-137-00
100 µL	093731-138-00

Conversion table for syringes/plungers/needles between previous syringe versions and the new TriStar syringes

old Part no.	new Part no.	page
009970-001-00	022003-000-00	7
009970-002-00	022003-050-00	7
009970-007-00	022003-800-00	7
009970-015-00	022000-001-00	6
009970-016-00	022000-053-00	6
009970-018-00	022000-200-00	6, 9
009970-019-00	022000-250-00	6, 9
009970-020-00	022000-300-00	6
009970-021-00	022000-000-00	6
009970-022-00	022000-051-00	6
009970-024-00	022000-050-00	6
009970-030-00	022000-400-00	6
009970-031-00	022000-401-00	6
009970-033-00	022000-600-00	6, 9
009970-034-00	022000-650-00	6
009970-040-00	022000-801-00	6
009970-041-00	022000-805-00	6
009970-042-00	022000-806-00	6
009970-043-00	022000-802-00	6
009970-048-00	022000-800-00	6
009970-051-00	022001-052-00	9
009970-052-00	022001-800-00	9
009970-057-00	022001-050-00	9
009970-058-00	022000-052-00	6

old Part no.	new Part no.	page
009970-061-00	022000-807-00	6
009970-065-00	022002-804-00	11
009970-070-00	022002-805-00	11
009970-072-00	022001-801-00	9
009970-080-00	022001-051-00	9
009980-046-00	022001-802-00	8
009980-052-00	022001-803-00	8
009980-053-00	022002-700-00	8,11
009980-054-00	022001-300-00	8
009980-055-00	022001-325-00	8
009980-061-00	022002-800-00	11
009980-062-00	022002-801-00	11
009980-063-00	022002-325-00	11
009980-064-00	022002-300-00	11
009980-065-00	022002-650-00	8, 11
009980-066-00	022002-802-00	11
009980-067-00	022002-803-00	11
009980-068-00	022001-326-00	8
009980-069-00	022001-301-00	8
009980-070-00	022002-701-00	8
009980-071-00	022002-651-00	8
009980-081-00	022002-806-00	11
	022000-550-00	6, 9
	022000-601-00	6

Compatibility:

Previous versions plungers and needles can be used for TriStar syringes, but it is not recommended to use TriStar plungers and needles for previous version syringes.



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Ver. 2015/24/08

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Awarded for the active pursuit of environmental sustainability

GERSTEL
certified

SUPPLIES

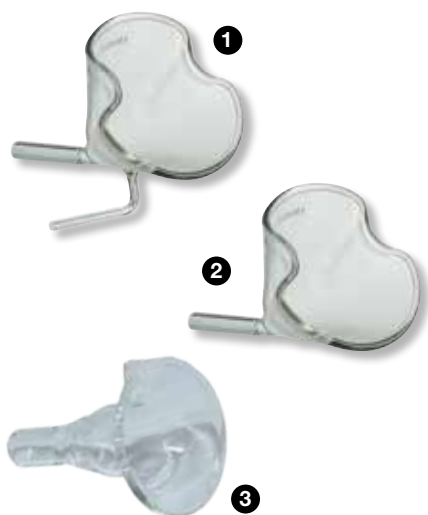


Olfactory Detection Port ODP



GERSTEL® - Olfactory Detection Port, OPD

The GERSTEL OPD allows olfactory detection of compounds using the human nose. Olfactory detection is performed in parallel to GC detection with FID, FPD or MSD detectors as compounds elute from the GC column. The effluent is split as it leaves the column, arriving simultaneously at the nose and at the detector, enabling the analyst to gain additional information on odor-active compounds. Using a headset with a microphone coupled to voice recognition software, the analyst can insert spoken comments directly into the chromatogram for peak annotation and into the analysis report. The OPD 3 model is equipped with a heated mixing chamber.



Nose cones

- 1** for use with OPD 1/2 with humidifier **006285-000-00**
- 2** for use with OPD 1/2 without humidifier **008012-000-00**
- 3** for use with OPD 3 **015346-000-00**

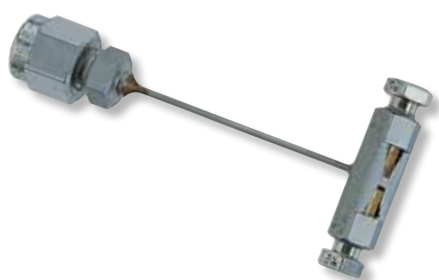


ODP 2



ODP 3

Part No.



GRAPHPACK® 3D/2 column connector with 1/16" gas connection, Sulfinert®

Column OD
from 0.80 mm OD to 0.45 mm

013508-145-00



Silicone tubing for connecting nose cone and humidifier

2 m

008647-000-00

Humidifier vial

Part no.

008204-000-00



Outer O Ring (Viton) for OPD 3 mixing chamber

1 package (5 units)

015428-005-00



Set for parallel detection, Sulfinert®

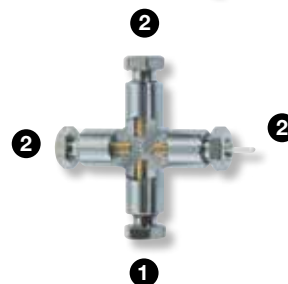
for Agilent MSD and GC Detectors in conjunction with GERSTEL-ODP

main column OD	splitter/restrictor capillary OD	
0.31	0.40	013493-031-00
0.45	0.40	013493-045-00
0.70	0.40	013493-007-00



GRAPHPACK 3D/2 crosspiece, Sulfinert®

1 main column OD	2 splitter/restrictor capillary OD	
0.31	0,40	012240-031-00
0.45	0.40	012240-045-00
0.70	0.40	012240-007-00



GRAPHPACK 2M detector adapter

MSD HP 5971/5972 GCD Series G 1800 A **006511-040-00**

HP 5890 A and Series II and Agilent 6850/6890 **006508-040-00**



Spare parts

GRAPHPACK nut

for all GRAPHPACK adapters;

1 package (5 units)

001268-005-00



Splitter/restriction capillaries

OD/ID	length	units	
0.36 mm / 0.10 mm	1 m	1	006558-001-00
0.36 mm / 0.10 mm	5 m	1	006558-005-00
	10 m	1	006558-010-00
0.36 mm / 0.15 mm	2 m	1	005344-002-00
0.36 mm / 0.15 mm	5 m	1	005344-005-00



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Ver. 2015/17/06

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Awarded for the active pursuit of

S00135-708-02

GERSTEL
certified **SUPPLIES**



Thermal Desorption System TDS



Pyrolysis Module PM 1



Tube Conditioner TC 1 / 2



Thermal Extractor TE 1 / 2



Thermal Desorption System TDS

The GERSTEL Thermal Desorption System TDS is the proven industry standard thermal desorption instrument for a range of applications. Standardized international methods in the field of Material Emissions for Automotive, Construction Materials, Semiconductors and Toys are based on the GERSTEL TDS. Further application examples include Flavor and Fragrance; Polymers and Packaging; Extractables & Leachables in Pharmaceutical Packaging; Residual solvents in polymers; and helping forensic laboratories determine if documents have been forged or altered.

The TDS enables thermal desorption of volatile and semi-volatile organic compounds (VOCs and SVOCs) from standard adsorbent tubes as well as thermal extraction of solids without further sample preparation. Up to 5 GERSTEL Twisters® can be desorbed using just one TDS tube and several desorptions can be performed in series for each GC/MS

run for additional sensitivity and improved limits of detection. GERSTEL thermal desorption and extraction solutions are specifically designed without valves or other complex components that are known to lead to cold spots and active sites. GERSTEL systems therefore ensure best possible recovery, even for active and high-boiling analytes, with the cleanest possible base-line ensuring accurate results and best possible limits of detection. A wide range of accessories are available for the TDS: Thermal Extractor (TE); Tube Conditioner (TC); Pyrolysis Module (PM 1); as well as manual or automated Tube Spiking systems (TSPS/TSS) for generating standard tubes as specified in several standard methods;

The MAESTRO software integrated with the Agilent ChemStation or GC MassHunter controls the complete process from sample introduction through thermal desorption to GC/MS analysis using just one method

and one sequence table ensuring efficient and error-free operation. GERSTEL systems are compatible with all standard GC/MS systems.

This Supplies catalogue provides a list of certified consumables, accessories and spare parts essential for the smooth operation of your GERSTEL® TDS. You have the right to demand the highest quality performance from GERSTEL systems and we have compiled this list so that this performance can be maintained throughout the life of your system. Please use only consumables, accessories and spare parts provided by GERSTEL. All GERSTEL products are made to exact specifications. Use of products not approved by GERSTEL can cause system malfunction or damage and may void system warranty. If you have any questions please do not hesitate to contact GERSTEL. Typically, the most efficient way is to contact your local sales representative.



Part No.

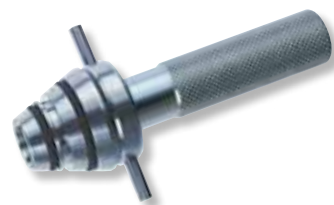
Spare parts for TDS 2/3 locking cone

O-ring set

for TDS 2/3 locking cone manual

1 set

0007884-000-00



Inner O-ring

for TDS 2/3-TDS A/A2 locking cone

1 package (5 units)

009095-005-00



Fixing nut for inner O-ring

for TDS 2/3 locking cone

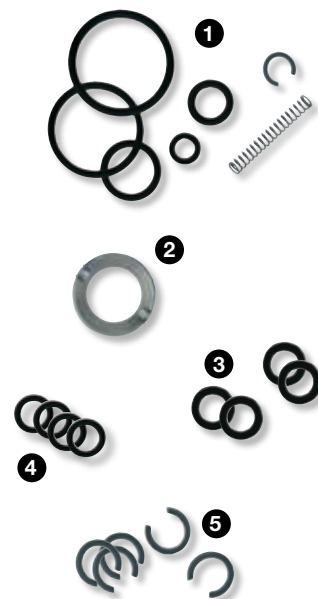
1 unit

009013-001-00



Spare parts for TDS A/A2 locking cone

- | | | |
|----------|---|----------------------|
| 1 | Service kit for TDS A/A2 locking cone
consists of:
O ring set for locking cone
Spring
Locking washer | 010441-000-00 |
|----------|---|----------------------|
- | | | |
|----------|--|----------------------|
| 2 | Fixing nut for inner O-ring
for TDS A locking cone | 009013-000-00 |
|----------|--|----------------------|
- | | | |
|----------|--|----------------------|
| 3 | Inner O-ring for TDS 2/3/TDS A/A2 locking cone
1 package (5 units) | 009095-005-00 |
|----------|--|----------------------|
- | | | |
|----------|--|----------------------|
| 4 | Spindel O-ring
1 package (5 units) | 010372-005-00 |
|----------|--|----------------------|
- | | | |
|----------|--|----------------------|
| 5 | Spindel safety catch
1 package (5 units) | 011061-005-00 |
|----------|--|----------------------|





Desorption tubes

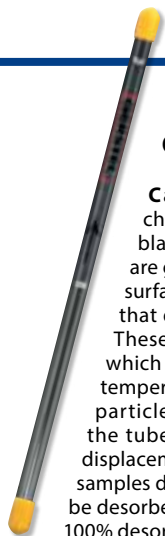
6 mm OD, for use with all GERSTEL TDS systems.

Each tube has a unique serial number for identification and traceability.

	packing	conditioned	description	units	Part No.
1	Tenax™ TA 60/80	–	glass tube with rubber caps	5	012260-005-00
2	Tenax GR	–	glass tube with rubber caps	5	012275-005-00
3	Chromosorb™ 106	–	glass tube with rubber caps	5	012276-005-00
4	Carbosieve™	–	glass tube with rubber caps	5	012277-005-00
	Carbotrap 300	–	glass tube multibed, with rubber caps	5	012346-005-00
	Carbotrap 300	–	glass tube (1 Set 5 units), multibed, with rubber caps	1	012347-005-00
	Tenax TA 60/80	–	with rubber caps	1	
	Tenax GR	–	with rubber caps	1	
	Chromosorb™ 106	–	with rubber caps	1	
	Carbosieve™	–	with rubber caps	1	
	Carbotrap 202 mg	✓	glass tube in storage container	1	012458-000-00
	Carbotrap B 50 mg	✓	glass tube in storage container	5	015244-005-00
	Carbotrap C 100 mg				
	Tenax TA 60/80	✓	glass tube in storage container	5	014752-005-00
	Carbosieve SIII™				
	Tenax TA 20/35	✓	glass tube in storage container	5	014656-005-00
	Tenax TA 60/80	✓	glass tube in storage container	1	009947-000-00
	Tenax TA 60/80	✓	SS tube in storage container	1	010040-000-00
	Tenax GR	✓	glass tube in storage container	1	009948-000-00
	Tenax GR	✓	SS tube in storage container	1	010041-000-00
	Carbosieve™	✓	glass tube in storage container	1	009949-000-00
	Carbosieve™	✓	SS tube in storage container	1	010042-000-00
	Carbotrap™ 300	✓	glass tube in storage container	1	008357-000-00
	Carbotrap™ 300	✓	SS tube in storage container	1	010044-000-00
	Carbotrap™ 349	✓	glass tube in storage container	1	009117-000-00
	Carbotrap 217	✓	glass tube in storage container	1	013115-000-00
5	Tenax / Carboxene	–	glass tube in storage container	1	009118-000-00
	empty	–	glass tube for GERSTEL Twister with 1mm film thickness	10	012518-010-00
	empty	–	SS tube	10	013790-000-00
	empty	–	glass tube	10	010649-010-00
6	empty	–	glass tube	1	010649-000-00
7	empty	–	glass tube with glass frit	1	010650-000-00
	empty	–	glass tube with glass frit	10	010650-010-00

Sorption tubes

	packing	conditioned	description	units	Part No.
8	PDMS	–	glass tube OD 6 mm, for gaseous samples	1	009171-000-00



Graphitized Carbon Blacks

Carbotrap/Carbopack: Unlike activated charcoals, which are porous, graphitized carbon blacks (GCBs), such as Carbotrap and Carbopack, are generally non-porous. Consequently, the entire surface of these materials is available for interactions that depend solely on dispersion (London) forces. These adsorbents offer excellent thermal stability, which ensures minimal bleed at thermal desorption temperatures, and their coarse 20/40 and 40/60 mesh particle size prevents a high pressure drop across the tube. Hydrophobic properties minimize sample displacement by water, enabling you to obtain accurate samples despite high humidity. Trapped compounds can be desorbed by solvent or thermal desorption at virtually 100% desorption efficiency.

Carbopack B is essentially the same adsorbent as Carbotrap; the only difference is the mesh size (60/80 mesh for Carbopack B vs. 20/40 mesh for Carbotrap). Both have a specific surface area of 100 m²/g. Carbopack B is often used in narrow bore tubes (1-2 mm ID), for sample refocusing or for very low flow sampling (<20 mL/min). This adsorbent is especially suited for trapping and thermally desorbing compounds in the range from C5 to C20 (depending on the size and structure of the molecule).

Carbopack C is essentially the same adsorbent as Carbotrap C; the only difference is the mesh size (60/80 mesh for Carbopack C vs. 20/40 mesh for Carbotrap C). Both have a specific surface area of 10 m²/g. Carbopack C is often used in narrow bore tubes (1-2 mm ID), for sample refocusing or for very low flow sampling (<20 mL/min). This adsorbent is especially suited for trapping and thermally desorbing compounds in the range from C9 to C30 (depending on the size and structure of the molecule).

Carbopack X, unlike most GCBs, is porous. Its surface area of 240 m²/g gives it greater adsorption strength than other GCBs, hence it is a unique bridge between GCBs and carbon molecular sieves.

Carbopack Y, with a surface area of 24 m²/g, bridges the characteristics of Carbopack B and Carbopack C.

Carbon Molecular Sieves

A carbon molecular sieve is the carbon skeletal framework remaining after the pyrolysis of a polymeric precursor. These materials are primarily used for collecting very small molecules (e.g., chloromethane, vinyl chloride, and Freon compounds). The size and shape of the analyte molecule and the size and shape of the pores in the adsorbent particle determine how well the analyte is adsorbed and desorbed.

Carbosieve S-III: The large surface area (approximately 820 m²/g) and 15-40 Å pores, make Carbosieve S-III excellent for trapping small airborne molecules, such as chloromethane. The pure carbon framework permits thermal desorption of analyte molecules without loss.

Carboxen

Carboxen carbon molecular sieves are highly hydrophobic, ensuring accurate sampling at high humidity.

Carboxen 1000 is for low volume sampling of very volatile compounds, such as vinyl chloride. Its large surface area and optimized microporosity enable it to efficiently adsorb and desorb smaller molecules, providing excellent chromatography without a need for cryogenic cooling. This 60/80 mesh adsorbent is used primarily in narrow bore tubes that are desorbed directly into the chromatographic column.

Carboxen 1003 has a large surface area and hydrophobic surface characteristics, which provide a combination of efficient adsorption/desorption and good hydrophobicity.

Porous Polymers

Tenax TA is a porous material based on 2,6-diphenylene oxide polymer. It is used to trap volatile and semivolatile compounds and has an upper temperature limit of 350 °C. The material has low affinity for water and methanol. When sampling for very volatile analytes with Tenax TA, a carbon molecular sieve is typically used as a backup.

Tenax GR is a composite material containing 30% graphite carbon and 70% Tenax TA. Compared to Tenax TA, it has a higher retention volume for most compounds and is twice as dense. Like Tenax TA, it has a low affinity for water and methanol and has an upper temperature limit of 350 °C.

Chromosorb 106 is a styrene-divinylbenzene polymer used to trap small molecules. It has a surface area of 750 m²/g and an upper temperature limit of 250 °C. Its usefulness is somewhat limited since it produces relatively high levels of background.

Multi-bed Adsorbent Tubes

Multi-bed adsorbent tubes contain a series of two or three different adsorbents beds packed in order of increasing strength from the sampling end of the tube. A combination of adsorbents enables the analyst to cover a wide range of compounds in a single analysis. The first adsorbent is the weakest, retaining only higher boiling analytes while allowing smaller compounds to pass to the following adsorbent(s). The first adsorbent bed retains analytes that may get irreversibly trapped on the subsequent, stronger adsorbent(s). During thermal desorption of the multi-bed adsorbent tube, the gas flow direction is reversed ensuring that higher boiling analytes will not have to pass through the strong adsorbent beds, where they would be retained. Multi-bed adsorbent tubes enable the analyst to combine the benefits of multiple adsorbents in a single analysis while eliminating effects such as irreversible trapping and loss of larger molecules.

Carbotrap 300 is a multi-bed tube comprised of Carbopack C, Carbopack B and Carbosieve S-III.

Carbotrap 349 is a multi-bed tube comprised of Carbopack Y, Carbopack B and Carboxen 1003.

Carbotrap 217 is a multi-bed tube comprised of Carbotrap B and Carboxen 1000.



Supplies for desorption tubes

	OD	description	units	Part No.
1 Storage Container	6 mm	Polycarbonate, with PTFE seals	1	008351-000-00
2 End cap set	6 mm	stainless steel, with PTFE seals	1	008235-060-00
3 End cap	6 mm	PTFE	10	012659-010-00
TD empty tubes	1/4 "	3,5 " long, stainless steel	1	011619-000-00
Screens		for positioning in 4 mm ID tubes	10	008980-010-00
Screens		for positioning TWISTER®s in 4.5 mm ID tubes	10	015686-010-00

4

Tweezers for handling TDS tubes



1 unit **009970-050-00**



O-rings for TDS A sample magazine

1 package (10 units) **008174-010-00**

O-rings for TDS A2 sample magazine

1 package (10 units) **015471-010-00**



Sealing plugs for TDS A/A2 sample magazine

1 package (10 units) **014173-010-00**

Part No.

TDS tube adapter for GERSTEL® TDS 3

Allows 1/4" OD x 3.5" L desorption tubes to be used with the TDS 3 (stainless steel tubes only)

1 unit	014454-000-00
1 set (21 units)	014454-021-00



Vespel cone

Vespel cone for TDS Tube adapter

1 package (5 units)	014456-005-00
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Screw driver SW 1.5 for TDS tube adapter

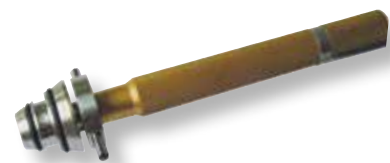
1 unit	013329-000-00
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Liquid injection kit for TDS 2/3

consists of:
Sealing cone with septum for liquid injection for GERSTEL TDS 2/3

1 unit	014450-060-00
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Special needle

for 10 µl syringe, length 115 mm

1 package (5 unit)	009970-059-00
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Septum

5 mm

1 package (100 units)	015608-100-00
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SLH calibration adapter

for spiking TDS tubes using the GERSTEL Septumless Head (SLH)

SFK / CIS 3	008871-003-00
SFK / CIS 4	008871-004-00



Special needle

for 10 µl syringe, length 81 mm
009970-016-00

1 package (2 units)	009970-049-00
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Supply kit for TDS 2/3 calibration adapter

includes 5 glass tubes with GP 3D ferrules and 5 teflon ferrules

SFK / CIS 3	010454-003-00
SFK / CIS 4	010454-004-00

Part No.



Direct interface

for 0.7 mm OD transfer line

System	for transfer line OD	units	
TDS 2/3 with CIS 3	0.70 mm / -	1	007823-007-00
TDS 2/3 with CIS 4	0.70 mm / -	1	008311-007-00
TDS 2/3 – TDS G with CIS 3s	0.70 mm / 0.53 mm	1	011025-007-00
TDS 2/3 with CIS 3s Tremetrics	0.70 mm / 0.53 mm	1	011628-007-00

Transfer lines

for TDS 2/3 with CIS 3/CIS 4, length 5 m

Version	deactivated	OD / ID	
ProSteel®	✓	0.67 mm / 0.53 mm	008687-005-00
Silcosteel®	✓	0.74 mm / 0.45 mm	010963-005-00
Sulfinert®	✓	0.74 mm / 0.45 mm	012185-005-00
Fused Silica	✓	0.70 mm	008644-005-00

Transfer line kit

for TDS 2/3 with CIS 3/CIS 4, length 1 m

Version	deactivated	OD	units	
ProSteel®	✓	0.67 mm	1	
GRAPHPACK 2M ferrule			10	011004-000-00
Silcosteel®	✓	0.74 mm	1	
GRAPHPACK 2M ferrule			10	011005-000-00
Sulfinert®	✓	0.74 mm	1	
GRAPHPACK 2M ferrule			10	012186-000-00



Direct interface

for 0.45 mm OD transfer line

System	OD	units	
TDS 2/3 with CIS 3	0.45 mm	1	007823-045-00
TDS 2/3 with CIS 4	0.45 mm	1	008311-045-00
TDS 2/3 – TDS G with CIS 3s	0.45 mm	1	011025-045-00
TDS 2/3 with KAS 3s Tremetrics	0.45 mm	1	011628-045-00

Transfer line

for TDS 2/3 with CIS 3 / CIS 4, length 5 m

Version	deactivated	OD	
Fused Silica	✓	0.45 mm	005014-005-00

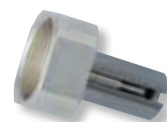
Transfer line kit

for TDS 2/3 with CIS 3 / CIS 4, length 1 m

Version	deactivated	OD	units	
Fused Silica	✓	0.45 mm	1	
GRAPHPACK 2M ferrule			10	011003-000-00

Part No.

GRAPHPACK 2M adapter



for TDS 2/3, for 0.45 mm OD transfer line (1 unit)	007820-045-00
for TDS 2/3 and TDS G, for 0.7 mm OD transfer line (1 unit)	007820-007-00

Silver seal

for GRAPHPACK 2M adapter
for TDS 2/3 and TDS G



1 package (5 units)	007821-005-00
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Spare parts for TDS G

GRAPHPACK Micro screw

single, 0.70 mm

1 unit	007910-007-00
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GRAPHPACK Micro ferrule

0.70 mm

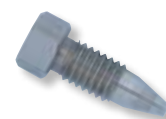
1 package (10 units)	001905-007-00
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Adapter for GRAPHPACK Micro screw

For use with Valco Vici valve 1/16"

1 unit	008688-007-00
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GRAPHPACK 2M injector adapter

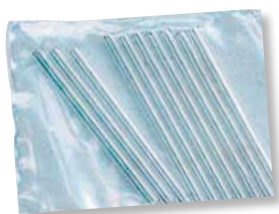
for Valco Vici valve, 1/16"

1 unit	008019-045-00
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GERSTEL® Pyrolysis Module PM 1

Manual Pyrolysis module for the TDS.



Sample tubes

for GERSTEL® Pyrolysis Module PM1

Part No.

1 package (10 units) **009250-010-00**

1 package (50 units) **009250-050-00**

Part No.

Pyrolysis TDS tube

for GERSTEL® Pyrolysis Module,
6.0 mm OD; 5.0 mm ID

Note
for use with Pyrolysis Module
only

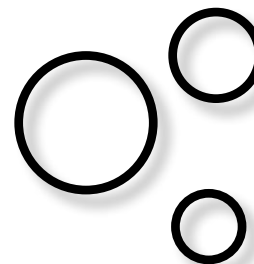
Quartz glass		
1 unit		009553-100-00
Borosilicate glass		
10 units		009553-010-00



Spare parts

O-ring set for TDS 2/3 manual locking cone

1 set		007884-000-00
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Inner O-ring for TDS 2/3 locking cone

1 package (5 units)		009095-005-00
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Fixing nut for inner O-ring

for TDS A/A2 locking cone

1 unit		009013-000-00
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GERSTEL® Tube Conditioner, TC 1 / 2

For simultaneous conditioning of up to ten TDS tubes or up to 50 Twister®s (5 Twisters per TDS tube). Tube conditioning is performed under a flow of inert gas at elevated temperatures. The gas flow to each tube is independently controlled allowing full loading flexibility. The GERSTEL TC 2 operates independently of the analytical system, eliminating the risk of system contamination and ensuring maximum productivity.

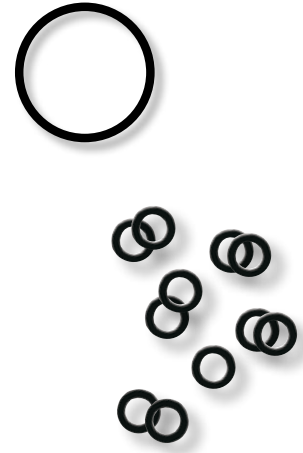


Part No.

O-ring set for TC 1 / 2 tube holder

1 package (1 set)

009650-000-00



TDS desorption tubes

for 1 mm film thickness Twisters; tube 6 mm OD x 4.5 mm ID

1 package (10 units)

012518-010-00



GERSTEL® Thermal Extractor, TE 1 / 2

The GERSTEL Thermal Extractor TE 2 enables the analyst to extract volatile and semi-volatile organic compounds from liquid or solid samples, trapping the compounds on a TDS tube for further analysis. For aldehyde analysis, analytes can be trapped on a DNPH tube for subsequent liquid elution and LC analysis. The GERSTEL TE 2 has a larger inner diameter than normal TDS tubes. Larger sample volumes can be analyzed to obtain lower detection limits. A larger, more representative sample volume also ensures better results when analyzing inhomogenous samples. The GERSTEL TE 2 is completely independent of the TDS system, eliminating the risk of system contamination when analyzing unknown samples.



O-ring set for tube holder

complete set of inner and outer O-rings



008634-000-00

Inner O-ring for tube holder



1 package (5 units)

009411-005-00

Part No.

Empty tubes for GERSTEL® TE

1 package (5 units)

008589-005-00



Inner O-ring for TE tube holder

Kalrez (1 unit)

008766-000-00



**PTFE ferrule for TDS
desorption tube**

1 package (5 units)

002732-005-00



**Desorption tubes for TDS 2/3
and TDS A/A2**

see pages 4 – 6

Screens for TE tube

1 package (10 units)

008590-010-00





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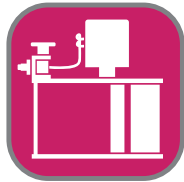
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Thermal Desorption Unit TDU



Thermal Desorption Unit TDU

The world's most flexible Thermal Desorption Instrument

The Thermal Desorption Unit (TDU) is a flexible automated solution for thermal desorption and thermal extraction. Several techniques are supported by the TDU:

- Stir Bar Sorptive Extraction (SBSE) using the GERSTEL Twister®
- Dynamic Headspace (DHS) based on standard headspace vials
- Air sampling onto adsorbent tubes combined with thermal desorption
- Thermal extraction of solids placed in fritted TDU liners
- Thermal extraction of liquid placed in μ -vials inside the TDU
- Direct introduction and thermal extraction of liquids and standards
- Hot Injection and Trapping (HIT), multiple HS or SPME injections for significantly improved sensitivity
- Automated Pyrolysis of liquid and solid samples using the PYRO

The TDU supports manual operation and it can be removed in seconds to enable direct liquid sample introduction into the GERSTEL Cooled Injection System (CIS), a PTV-type universal GC inlet.

When configured with the GERSTEL MultiPurpose Sampler (MPS), up to 196 samples can be analyzed in one automated sequence using one or more methods. The MAESTRO software combined with the Agilent ChemStation controls the complete process from sample introduction through thermal desorption to GC/MS analysis with one method and one sequence table ensuring efficient and error-free operation.

This Supplies catalogue provides a list of certified consumables, accessories and spare parts essential for the smooth operation of your GERSTEL® TDU.

You have the right to demand the highest quality performance from GERSTEL systems and we have compiled this list so that this performance can be maintained throughout the life of your system.

Please use only consumables, accessories and spare parts provided by GERSTEL. All GERSTEL products are made to exact specifications. Use of products not approved by GERSTEL can cause system malfunction or damage and may void system warranty. If you have any questions please do not hesitate to contact GERSTEL. Typically, the most efficient way is to contact your local sales representative.



Part No.

Transport adapter for GERSTEL TDU desorption Liner

1 Unit	012423-001-00
10 Units	012423-010-00
100 Units	012423-100-00



Transport adapter for liquid injection

10 Units	013645-010-00
100 Units	013645-100-00



O-ring set

for Transport adapter

10 Units	012424-010-00
100 Units	012424-100-00



Inner O-ring

for Transport adapter

10 Units	014846-010-00
100 Units	014846-100-00



Septum for Transport adapter for liquid injection

10 Units	015608-010-00
100 Units	015608-100-00

Glass inserts

for Twister sample tray

15 Units	012565-015-00
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Preventive maintenance kit for TDU

consists of:

- Injection unit
- Glass liner kit (012440-004-00)
- GRAPHPACK 3D ferrules; 5 Units

CIS 4	014100-903-00
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Recommended Kit

consists of:

- Glass liner kit (012440-00x-00)
- GRAPHPACK 3D ferrules; 10 Units
- Transport adapter for desorption Liner; 10 Units
- O-ring set for Transport adapter; 100 Units
- Desorption liner for TDU, empty; 100 Units
- Twister, film thickness 0,5 mm, 10 mm long; 10 Units

CIS 3	012713-003-00
CIS 4/6	012713-004-00

Part No.

Desorption Liners for TDU

The following desorption liners are designed for the GERSTEL Twister Desorption Unit (TDU).

Dimensions: OD 6 mm (ID 4 mm), length 60 mm



straight with notch

For desorption of GERSTEL Twister® or for liquid injection of highly contaminated samples, in combination with GERSTEL Microvials

10 Units	013010-010-00
100 Units	013010-100-00

with glass frit

User packed liners

5 Units	013742-005-00
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packed with Tenax TA™

For trapping of organic compounds e.g. in air
Maximum temperature: 300 °C

5 Units	013741-005-00
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packed with PDMS foam

Polydimethylsiloxane (PDMS) is an open porous foam packing, used for analyte trapping. PDMS strongly retains non polar analytes and can be used for analytes as high boiling as n-C₄₀.
Ideal mid-range sorbent, useful when glass wool retains too little and Tenax TA™ is too strong. Allows trapping at moderate temperatures, reducing the need for cryogenic cooling compared to glass wool. Suitable for liquid injection, enabling solvent or water to be separated from the analytes.
Maximum temperature: 270 °C.
Minimum temperature -10 °C (glass transition temperature)

5 Units	013758-005-00
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Microvials for liquid injection into the TDU

Microvials for the TDU liquid option: for injection of high-boiling or matrix laden samples e.g. oil or food samples into the TDU. The inserts are placed in the empty desorption liners and transferred to the TDU. (For more information about the TDU and liquid injection, contact your local GERSTEL representative)



20 Units	014756-500-00
200 Units	014756-002-00
2000 Units	014756-020-00

Part No.

Desorption Liners for TDU

The following desorption liners are designed for the GERSTEL Twister Desorption Unit (TDU).

Dimensions: OD 6 mm (ID 4 mm), length 60 mm

packed with Carboxen-1000 - 40/60 mesh

conditioned, in storage container

Maximum temperature: 330 °C

5 Units **015455-005-00**

packed with Carboxen-1000 and Carboxen-1000

conditioned, in storage container

Maximum temperature: 330 °C

5 Units **015951-005-00**

packed with Carboxen-1000 and Carboxen-1000

conditioned, in storage container

Maximum temperature: 330 °C

5 Units **015952-005-00**

packed with Tenax GR

conditioned, in storage container

Maximum temperature: 300 °C

5 Units **015953-005-00**

packed with Carboxen-1000 and Carboxen-1000

conditioned, in storage container

Maximum temperature: 330 °C

5 Units **015954-005-00**

Storage Container

for TDU Desorption Liner

1 Unit **013743-000-00**

Desorption Liner - Kit

consisting of

- liners packed with Carboxen-1000 - 40/60 mesh; 1 unit
- liners packed with Carboxen-1000 and Carboxen-1000; 1 unit
- liners packed with Carboxen-1000 and Carboxen-1000; 1 unit
- liners packed with Tenax GR™; 1 unit
- liners packed with Tenax TA™; 1 unit

015955-005-00



CIS glass liners for use with the TDU

The glass liners listed in the following are designed for the CIS 3 or CIS 4/6 in combination with the GERSTEL TDU only. Unless specified separately, the dimensions are:

CIS 4/6 OD 3 mm (ID 2 mm); length 78 mm.

CIS 3 OD 3 mm (ID 2 mm); length 78 mm..

For all liners for any particular CIS type inlet, the same GERSTEL®-Graphpack® ferrules can be used.

Important Information:

With exception of the Siltek™ coated liners, the deactivation is only stable at temperatures up to 275 °C. Higher temperatures can be used, but this will create more active sites inside the liner

GERSTEL Headspace:

For standard Headspace Split injection, we recommend a deactivated baffled liner. For splitless introduction, it can be necessary to refocus the analytes in the liner. In this case, depending on the application, a liner packed with an adsorbent such as Tenax TA™ or Carbotrap B™ or even a sorbent such as PDMS foam can be used.

Tenax TA™

Tenax TA™ is a porous material based on 2,6-diphenylene oxide polymer, with a specific surface area of 35 m²/g. The material has low affinity for water and methanol and adsorbs compounds in the C₅-C₂₈ range. The particle size is 60/80 MESH.

Carbotrap B™

Carbotrap B™ has a particle size of 20/40 MESH. It has a specific surface area of 100 m²/g. This adsorbent is especially suited for trapping and thermally desorbing compounds in the range from C₅ to C₂₀ (depending on the size and structure of the molecule).

PDMS

The GERSTEL PDMS foam has an open porous structure. The non polar material is very well suited for focusing and thermally desorbing non polar analytes (a distribution equilibrium occurs between the PDMS foam and the vapor phase). Maximum temperature: 300 °C. Minimum temperature: glass transition temperature -10 °C.

Maximum temperatures:

Liner type	maximum temperature
Deactivated liner	275 °C
Siltek™ coating	350 °C
Not deactivated	450 °C
Packed with Carbotrap B™	400 °C
Packed with Tenax TA™	350 °C
PDMS foam	300 °C

Part No.

CIS glass liners for use with the TDU

straight with notch

deactivated

For initial system evaluation. Used for custom-packed liners

Maximum temperature: 275 °C

1 package (10 Units)	CIS 3	013776-010-00
	CIS 4/6	013775-010-00

baffled

deactivated

Suitable for very labile and for high boiling compounds.

(Warning: Breakthrough of analytes is possible)

Maximum temperature: 275 °C

1 package (10 Units)	CIS 3	012441-010-00
	CIS 4/6	012436-010-00

with silanized glass wool

ID 1mm, straight without notch, deactivated

Standard liner for trapping of high to low boilers. Due to the smaller inner diameter the linear gas velocity is increased, resulting in more efficient desorption.

1 package (10 Units)	CIS 4/6	015982-010-00
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with silanized glass wool

2mm, deactivated

For special uses: For trapping of low boilers. At 2 mm ID (CIS 4), a lower linear gas velocity is achieved, enabling trapping of low boilers even if no absorbent material can be used

1 package (10 Units)	CIS 3	012741-010-00
	CIS 4/6	012742-010-00

with glass beads

deactivated

improved cryofocusing across a wide boiling range and improved splitless transfer to the column due to the optimized flow restriction.

1 package (10 Units)	KAS 4/6	015620-005-00
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Siltek™-coated

with CarboFrit

The Siltek™ coating withstands temperatures up to 350 °C. It is also suitable for labile compounds.

1 package (10 Units)	CIS 4/6	014788-005-00
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Part No.

CIS glass liners for use with the TDU

straight with notch

Special use liner e.g. for custom-packing.

1 package (10 Units) **CIS 3** **013889-010-00**

CIS 4/6 **013885-010-00**

1 package (100 Units) **CIS 3** **013889-100-00**

CIS 4/6 **013885-100-00**

baffled

Used for high boiling and stable compounds.

1 Package (10 Units) **CIS 3** **013890-010-00**

CIS 4/6 **013884-010-00**

1 package (100 Units) **CIS 3** **013890-100-00**

CIS 4/6 **013884-100-00**

with silanized glass wool

1mm ID

especially useful for focusing of semi-volatiles due to small amount of packing material combined with high linear gas velocity for efficient transfer von analytes to the column.

1 package (10 Units) **CIS 3** **014072-010-00**

CIS 4/6 **013409-010-00**

straight without notch

For special uses e.g. in combination with TDU analyte trapping (for more information contact your local GERSTEL representative)

1 package (10 Units) **CIS 4/6** **013911-010-00**

Standard liner kit

included glass liners:

Empty (baffled) deactivated, 2 units

Packed with silanized glass wool deactivated, 4 units

Packed with Tenax™, 2 units

Packed with Carbotrap B™, 2 units

CIS 3 **012440-003-00**

Empty (baffled) deactivated, 2 units

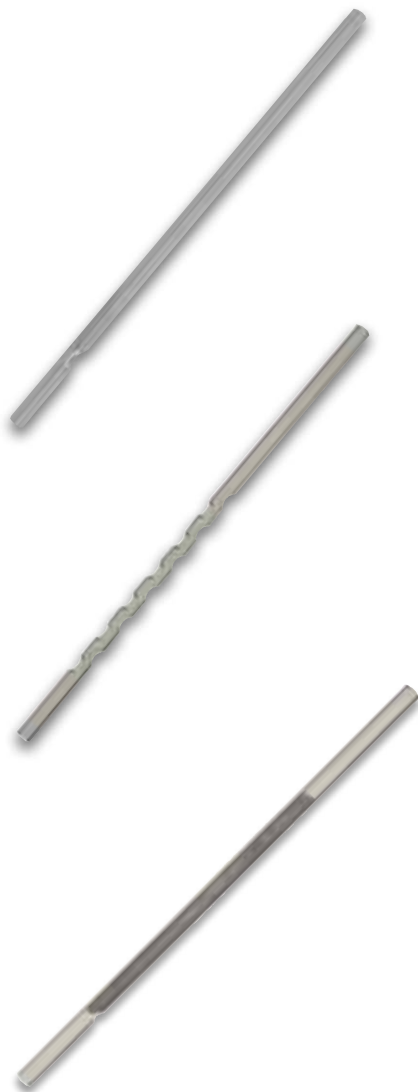
Packed with silanized glass wool deactivated, 2 units

1 mm/2 mm ID, packed with silanized glass wool deactivated, 2 units

Packed with Tenax™, 2 units

Packed with Carbotrap B™, 2 units

CIS 4/6 **012440-004-00**



Part No.

CIS glass liners for use with the TDU

packed with Tenax TA™

Low affinity to methanol and water (optimal water purging at 40 °C). For trapping from C5 to high boilers.

1 package (10 Units)	CIS 3	012443-010-00
	CIS 4/6	012438-010-00

packed with Carbotrap B™

For trapping of low boilers.

1 package (10 Units)	CIS 3	012444-010-00
	CIS 4/6	012439-010-00

packed with quartz wool

More inert than glass wool. For trapping of difficult compounds (acidic, alkaline, etc.).

1 package (10 Units)	CIS 3	012442-010-00
	CIS 4/6	012437-010-00

packed with PDMS foam

Polydimethylsiloxane (PDMS) is an open porous foam packing, used for analyte trapping. PDMS strongly retains non polar analytes and can be used for analytes as high boiling as n-C40. Ideal mid-range sorbent, useful when glass wool retains too little and Tenax™ TA is too strong. Allows trapping at moderate temperatures, reducing the need for cryogenic cooling compared to glass wool. Maximum temperature: 300 °C. Minimum temperature -10 °C (glass transition temperature). At lower temperatures the analytes will just freeze out at the surface. The PDMS foam liner is much more inert than a glass wool liner. 5 mm packing length retains semi volatiles. 10 mm retains intermediate volatiles. 30 mm retains very volatile organic compounds.

packed with PDMS foam, 5 mm

1 package (10 Units)	CIS 4/6	014597-110-00
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packed with PDMS foam, 10 mm

1 package (10 Units)	CIS 4/6	014599-110-00
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packed with PDMS foam, 30 mm

1 package (5 Units)	CIS 4/6	014600-105-00
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PDMS glass liner kit

included glass liners:

Packed with PDMS foam, 5 mm length, 2 units
 Packed with PDMS foam, 10 mm length, 2 units
 Packed with PDMS foam, 30 mm length, 2 units

	CIS 4/6	014602-104-00
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Part No.

Quartz liners for CIS 6 in combination with TDU

Quartz liners can be used at temperatures up to 650 °C and are marked with a red dot.



baffled

For cold split injections, baffles create good mixing of sample and carrier gas. For liquid injections of moderate/high boilers and for labile compounds. Suitable for high temperature usage (up to 650 °C) with a CIS 6.

1 package (5 Units)

CIS 6

016070-005-00

packed with quartz wool

Suitable for large volume injections into the PTV. The large surface area helps retain analytes while the solvent evaporates. The packing can be used as a filter for particulates. More inert than glass wool. For liquid injections of difficult compounds (acidic, alkaline etc.). Suitable for high temperature usage (up to 650 °C) with a CIS 6

1 package (5 Units)

CIS 6

016072-005-00

GRAPHPACK® 3D mounting tool for glass liners

The mounting tool is designed for use only with glass liners used in combination with a TDU

CIS 3

012781-003-00

CIS 4/6

012781-004-00

GRAPHPACK® 3D ferrules for glass liners

Standard ferrules

1 package (5 Units)

CIS 3

002426-005-00

CIS 4/6

007541-005-00

1 package (10 Units)

CIS 3

002426-010-00

CIS 4/6

007541-010-00

Mica coated for improved sealing

1 package (5 Units)

CIS 3

002426-105-00

1 package (10 Units)

CIS 3

002426-110-00



Part No.

Pyrolysis Module for TDU (PYRO)

Transport adapter for TDU PYRO

10 Units **018276-010-00**

O-ring Set

for PYRO Transport adapter

10 Units **012424-010-00**

100 Units **012424-100-00**

Inner O-ring

for Transport adapter

100 Units **014846-100-00**

Pyrolysis tubes

tube type - quartz glass - lenght 25 mm; 100 Units **018131-100-00**

vial type - quartz glass - lenght 17 mm; 100 Units **018133-100-00**

vial type with slit - quartz glass - lenght 17 mm; 20 Units **018437-020-00**

vial type with slit - quartz glass - lenght 25 mm; 20 Units **018438-020-00**

Quartz wool

0.5 g **009970-076-00**

CIS/TDU glass liner packed with Quartz wool for PYRO

deactivated

1 package (10 Units)

CIS 4 **018662-010-00**

Sample transfer tube for TDU PYRO

5 Units **018283-005-00**

Filament for TDU PYRO

1 Unit **018282-000-00**

Glass inserts for TDU PYRO Tray

100 Units **018318-100-00**

Tweezers for Pyrolysis tubes

1 Unit **009970-074-00**

Cutter knife

1 Unit **009970-075-00**





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Ver. 2015/06/17

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