

# Supplies

Cooled Injection System CIS  
Automated Liner EXchange ALEX





Please ensure that you only use consumables that are purchases from GERSTEL or our authorized distributors. Only original GERSTEL products or products approved by GERSTEL with a seal of approval guarantee the flawless and reliable operation of our instruments and systems. Please be aware that any warranty claims may be void if you use third-party products or products that are not approved by GERSTEL. In the interest of generating accurate and reproducible analysis results, please only use original GERSTEL supplies.

Supplies for the GERSTEL CIS 3 inlet can be ordered through your Sales Representative.

## CIS Inlet Heads



### Septumless head SLH for CIS

(For 23 gauge needles)

For manual or automated sample introduction.

■ CIS 4 / CIS 6

007513-064-00

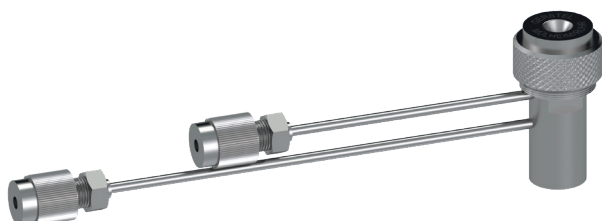


### Septum head

Without septum purge

■ CIS 4/6

007515-000-00

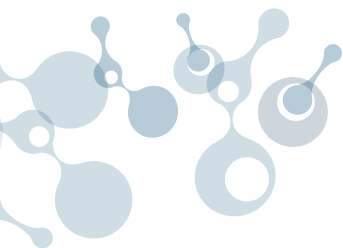


### Septum head

with septum purge

■ CIS 4/6

008584-000-00



## Service kit for SLH

- complete set of parts

009999-010-00

Contains one unit each of the following items:

- 1 Plunger
- 2 Spring
- 3 Inner O-ring (Kalrez™)
- 4 Outer O-ring (Viton™)\*

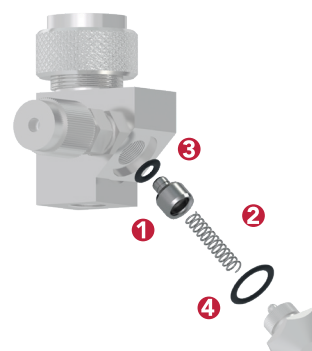
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009999-014-00

009999-015-00

009999-016-00

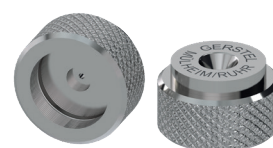
\* When reordering only complete original package size is available (5 units).



## SLH cap

- For 23 gauge needles

006144-064-00



## Teflon™ needle guide for SLH

1 pack (10 units)

- For 23 gauge needles

003091-064-00



## Carrier gas connection for SLH

- Assembly

005610-000-00

Contains the following parts:

- 1 Carrier gas connection seal for SLH  
1 pack (1 unit)
- 2 Carrier gas connection body for SLH  
1 pack (1 unit)
- 3 Teflon ferrule 1/16"  
1 pack (10 unit)
- 4 Knurled nut  
1 pack (5 unit)

021063-000-00

001459-003-00

001576-010-00

001117-005-00



## Spare parts for Septum Head

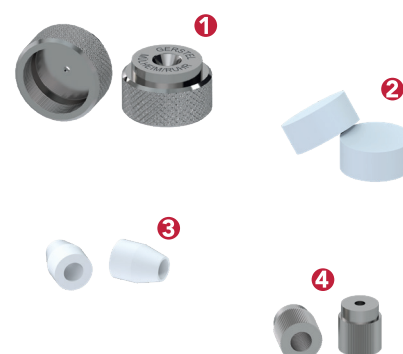
- 1 Septum cap  
1 pack (1 unit)
- 2 Septa for CIS 3/4", white  
1 pack (25 unit)
- 3 Teflon ferrule 1/16"  
1 pack (10 unit)
- 4 Knurled nut  
1 pack (5 unit)

006460-000-00

008246-025-00

001576-010-00

001117-005-00





## CIS glass liners

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

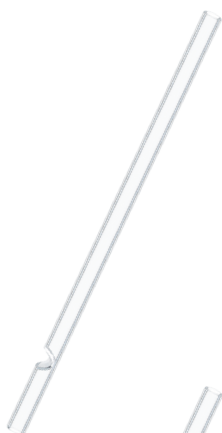
■ CIS 4/6 & Agilent-PTV OD 3 mm (ID 2 mm); length 71 mm

### Note:

With the exception of the Siltek™ coated liners, the deactivation is only stable at temperatures up to 275 °C. Higher temperatures can be used, but will lead to the creation of 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 either Tenax TA™, Carbotrap B™ or PDMS foam may be appropriate.



### CIS glass liners deactivated

#### Straight with notch deactivated

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

1 pack (10 units)

■ CIS 4/6 & Agilent-PTV

011709-010-00



#### Baffled deactivated

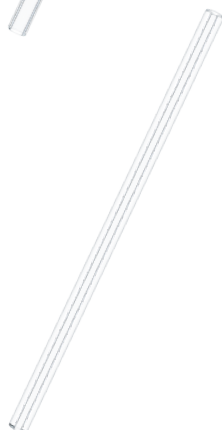
For cold split injections, baffles ensure good mixing of sample and carrier gas. For liquid injections of moderate/high boilers and for labile compounds.

Maximum temperature: 275 °C

1 pack (10 units)

■ CIS 4/6 & Agilent-PTV

011711-010-00



#### for SPME - ID 1 mm deactivated

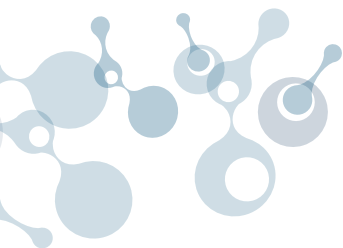
For SPME desorption. Due to the smaller inner diameter, the linear carrier gas velocity is increased, resulting in more efficient desorption. (For manual SPME or automated SPME using the GERSTEL MultiPurpose Sampler MPS)

Maximum temperature: 275 °C

1 pack (10 units)

■ CIS 4/6 & Agilent-PTV

011712-010-00



### Siltek™ coated baffled liners deactivated

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

1 pack (5 units)

■ CIS 4/6 & Agilent-PTV

011709-005-00



### CIS glass liners, packed deaktiviert

#### with silanized glass wool deactivated

Suitable for large volume injection into the CIS. The large surface area helps retain analytes while the 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 pack (10 units)

■ CIS 4/6 & Agilent-PTV

010850-010-00



#### with quartz wool deactivated

Suitable for large volume injection into the CIS. The large surface area helps retain analytes while the 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 pack (10 units)

■ CIS 4/6 & Agilent-PTV

018662-010-00



#### with glass beads deactivated

Suitable for large volume injection into the CIS. Usage similar to the glass wool liner, but 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 pack (5 units)

■ CIS 4/6 & Agilent-PTV

011714-005-00





## CIS glass liners, packed deactivated

### with Tenax TA™ deactivated

For PTV injection combined with solvent venting during large volume injections. Low affinity to methanol and water (Best water elimination at 40 °C). Useful for trapping from C5 to C26. Particularly suitable for headspace analysis. Maximum temperature: 350 °C

1 pack (5 units)

■ CIS 4/6 & Agilent-PTV

013247-005-00

### with Carbotrap B™ deactivated

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

Maximum temperature: 400 °C

1 pack (5 units)

■ CIS 4/6 & Agilent-PTV

013248-005-00

### with glass beads and Carbotrap C™ deactivated

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

Maximum temperature: 400 °C

1 Packung (5 Stück)

■ CIS 4/6 & Agilent-PTV

011716-005-00

### with PDMS foam deactivated

For trapping 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 pack (10 units)

■ CIS 4/6 & Agilent-PTV

014594-110-00

10 mm packing length for intermediate volatiles.

1 pack (10 units)

■ CIS 4/6 & Agilent-PTV

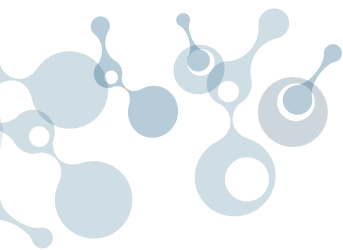
014595-110-00

30 mm packing length retains very volatile analytes.

1 pack (5 units)

■ CIS 4/6 & Agilent-PTV

014596-105-00



## CIS glass liner kits

deactivated

### CIS glass liner kit, deactivated for CIS 4/6 & Agilent-PTV

■ complete set of parts **013543-004-00**

Contains 2 each of the following liners:

Straight with notch, deactivated	<b>011709-010-00</b>
Baffled, deactivated	<b>011711-010-00</b>
Packed with silanized glass wool, deactivated	<b>010850-010-00</b>
Packed with Tenax™	<b>013247-005-00</b>
Packed with Carbotrap B™	<b>013248-005-00</b>

### CIS PDMS glass liner kit, deactivated for CIS 4/6 & Agilent-PTV

■ complete set of parts **013543-004-00**

Contains 2 each of the following liners:

Packed with PDMS foam, 5 mm packing length	<b>014594-110-00</b>
Packed with PDMS foam, 10 mm packing length	<b>014595-110-00</b>
Packed with PDMS foam, 30 mm packing length	<b>014596-105-00</b>

## Adsorbent properties

### Tenax TA™

Tenax TA™ is a porous polymer based on 2,6-diphenylene oxide, with a specific surface area of 35 m<sup>2</sup>/g. The material has low affinity for water and methanol. It can be used to trap and thermally desorb compounds in the C<sub>5</sub>-C<sub>26</sub> range. The particle size is 60/80 MESH.

### Carbotrap B™

Carbotrap B™ is a MESH 20/40 graphitized carbon material with a specific surface area of 100 m<sup>2</sup>/g. This adsorbent is especially suited for trapping and thermally desorbing compounds in the range from C<sub>5</sub> to C<sub>20</sub> (depending on the size and structure of the molecule)

### Carbotrap C™

Carbotrap C™ is a 20/40 MESH graphitized carbon material with a specific surface area of 10 m<sup>2</sup>/g. This adsorbent is

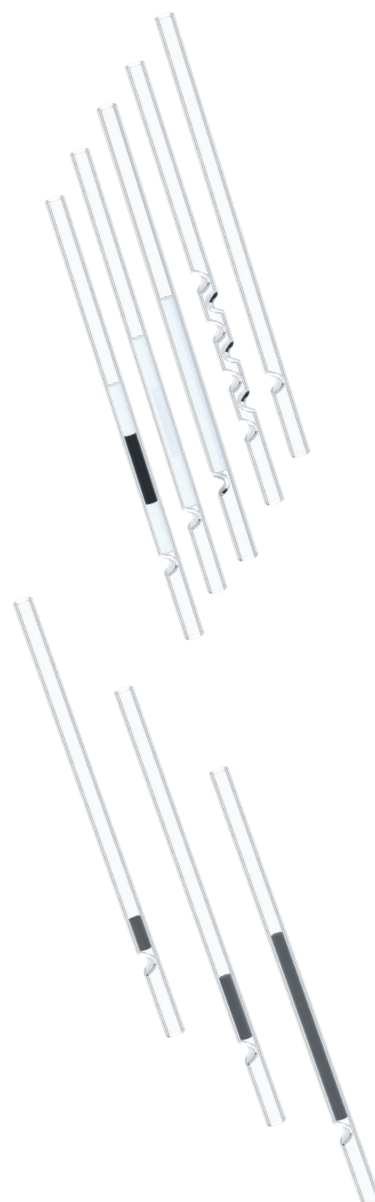
especially suited for trapping and thermally desorbing compounds in the range from C<sub>9</sub> to C<sub>30</sub> (depending on the size and structure of the molecule).

### PDMS

GERSTEL Polydimethylsiloxane (PDMS) foam has an open porous structure and is a highly inert non polar material. It is suitable as a trap or "guard column" and for large volume injections with analytes covering a wide range of volatility. PDMS provides strong retention of non polar analytes and 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).





## CIS glass liners

not deactivated

### 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:** Not deactivated. Unstable compounds may be decomposed.

1 pack (10 units)

■ CIS 4/6 & Agilent-PTV

**013881-010-00**

1 pack (100 units)

■ CIS 4/6 & Agilent-PTV

**013881-100-00**



### Straight without notch

ID 2 mm, not deactivated

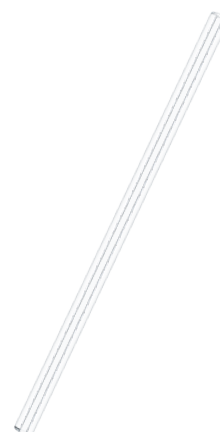
For special uses e.g. in combination with a TD system. Enables analyte trapping on the column (For more information, contact your local GERSTEL representative). Maximum temperature: 400 °C

**Note:** Not deactivated. Unstable compounds may decompose

1 Pack (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 moderately high-boiling compounds.

Maximum temperature: 400 °C

**Note:** Not deactivated. Unstable compounds may decompose.

Frequently used in combination with the Automated Liner Exchange (ALEX) system

1 pack (10 units)

■ CIS 4/6 & Agilent-PTV

**013882-010-00**

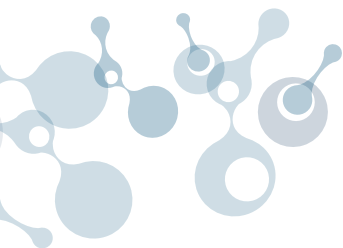
1 Packung (100 Stück)

■ CIS 4/6 & Agilent-PTV

**013882-100-00**







## CIS glass liner packed glass liner not deactivated

### with silanized glass wool deactivated

Suitable for large volume injection into a CIS or 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 not deactivated.

1 pack (10 units)

■ CIS 4/6 & Agilent-PTV

014284-010-00



## Quartz liners for CIS 4/6 not deactivated

### 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.

**Note:** Not deactivated. Unstable compounds may be decomposed.

■ 5 units

013238-005-00



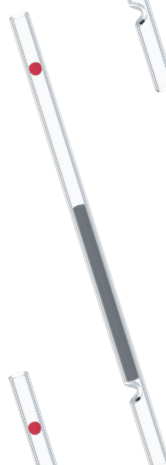
### packed with quartz wool not deactivated

Suitable for large volume injection into the CIS or 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

**Note:** Not deactivated. Unstable compounds may be decomposed.

■ 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

**Note:** Not deactivated. Unstable compounds may be decomposed.

■ 1 Unit

013148-000-00

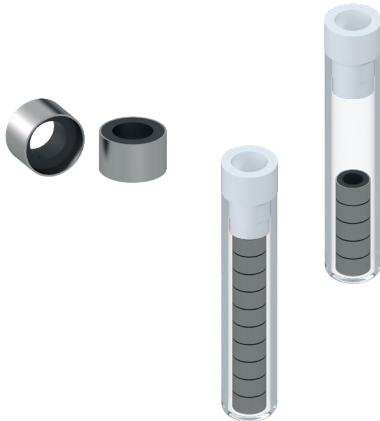
■ 5 Unit

013148-005-00





## GRAPHPACK 3D ferrules for glass liners



### GRAPHPACK 3D ferrules for glass liners

1 pack (5 units)

■ CIS 4/6 & Agilent-PTV

**007541-005-00**

1 pack (5 units)

■ CIS 4/6 & Agilent-PTV

**007541-010-00**

### GRAPHPACK® 3D Kalrez ferrules for glass liners

(not for use in combination with TDS / TDU / TD 3.5+)

1 pack (2 units)

■ CIS 4/6 & Agilent-PTV

**011868-002-00**

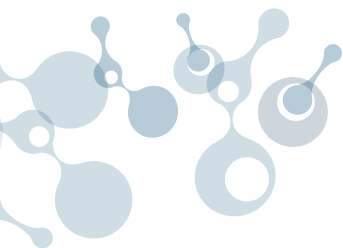


### GRAPHPACK 3D Mounting tool for glass liners

(1 unit)

■ CIS 4/6 & Agilent-PTV

**007542-000-00**



## GRAPHPACK 2M adapter for CIS

CIS 4 (Silver)

Column OD / ID

- 0.31 mm / 0.20 mm
- 0.45 mm / 0.32 mm
- 0.70 mm / 0.53 mm

007259-031-00

007259-045-00

007259-007-00

CIS 6 (Stainless steel)

- 0.31 mm / 0.20 mm
- 0.45 mm / 0.32 mm
- 0.70 mm / 0.53 mm

013244-031-00

013244-045-00

013244-007-00



## Spare parts

Silver seal

1 pack (5 units)

002841-005-00

GRAPHPACK nut

1 pack (5 units)

001268-005-00



## GRAPHPACK 2M dual column injector adapter

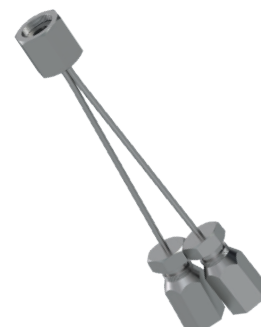
For the simultaneous connection of two capillary columns to a single CIS inlet.

Column OD / ID

- 0.31 mm / 0.20 mm
- 0.45 mm / 0.32 mm

007530-031-00

007530-045-00



## Spare parts

Silver seal

1 pack (5 units)

002841-005-00

GRAPHPACK nut

1 pack (5 units)

003714-005-00



## GRAPHPACK 2M ferrules

1 pack (10 units)

Column OD / ID

- 0.20 mm / ≤ 0.1 mm
- 0.25 mm / ≤ 0.1 mm
- 0.31 mm / 0.20 mm
- 0.40 mm / 0.25 mm
- 0.45 mm / 0.32 mm
- 0.70 mm / 0.53 mm
- 0.80 mm / 0.27 mm

001805-020-00

001805-025-00

001805-031-00

001805-040-00

001805-045-00

001805-007-00

001805-008-00





## Accessories

### On Column kit

Converts CIS into On-Column inlet.

■ CIS 4/6

008340-000-00

### Individual parts / replacements

#### 1 On Column insert

1 pack (1 unit)

■ CIS 4/6

008339-000-00

#### 2 GRAPHPACK 3D ferrule

1 pack (5 unit)

■ CIS 4/6

007541-005-00

#### 3 GRAPHPACK 2M adapter

1 pack (1 unit)

■ CIS 4

007259-007-00

■ CIS 6

013244-007-00

#### 4 GRAPHPACK 2M ferrule

1 pack (10 unit)

■ CIS 4/6

001805-007-00

#### 5 Silber seal for GRAPHPACK 2M adapter

1 pack (5 unit)

■ CIS 4/6

002841-005-00

#### 6 Teflon needle guide (0.47 mm)

1 pack (10 unit)

■ CIS 4/6

003091-047-00

#### 7 Cap for SLH (0.47 mm)

1 pack (1 unit)

■ CIS 4/6

006144-047-00

### Adsorption trap

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

■ 1 pack (1 unit)

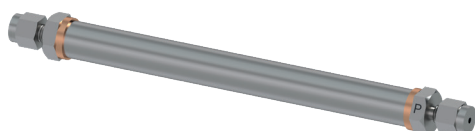
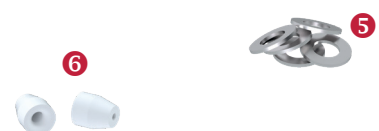
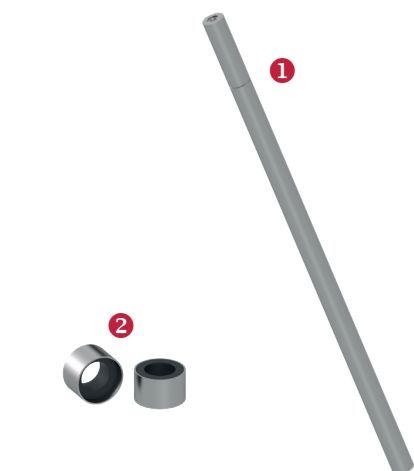
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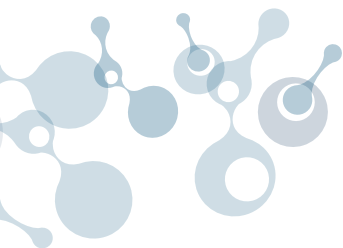
### Cryo tube

2 m, with CIS Adapter

■ CIS 4/6

006124-004-00





## Microliter syringes

Injection / Sampler	System	Description	μL	units	Part No.
Manual	CIS	plunger in needle	1	1	009999-041-00
Autosampler HP 7673 / Agilent 7683	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	CIS	replaceable needle	50	1	009970-013-00
			100	1	009970-014-00
			Spare Needle		
Autosampler HP 7673 / Agilent 7683	CIS	fixed needle, on Column 0.47 mm OD	10		009999-052-00

Injection / Sampler	System	Description	μL	units	Part No.
Manual	CIS	with 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	CIS	gastight	100	1	009999-019-00
			250	1	009999-018-00
			500	1	009999-017-00
			1000	1	009999-021-00
			Spare		
		TLL needle	3		009999-006-00





## GERSTEL Automated Liner EXchange, ALEX



### ALEX transport adapter

for CIS 4 liner

- 1 unit
- 10 units

013795-000-00

013795-010-00



### O-ring kit with locking washer

for ALEX transport adapter

- 1 pack (5x4 units)

013934-005-00



### Septa

for ALEX transport adapter

- 100 units

015608-100-00



### Allen wrench 4 mm

for ALEX transport adapter screws

- 1 unit

009999-204-00



### O-ring

for ALEX sampling head / CIS 4

- 10 units

013931-010-00





### GERSTEL ALEX tray for MPS robotic

for up to 40 ALEX transport adapters  
includes 40 transport adapters  
without CIS glass liners

■ 1 unit

019391-040-00



### GERSTEL ALEX tray for MPS robotic

for up to 40 ALEX transport adapters  
without transport adapters  
without CIS glass liners

■ 1 unit

019391-000-00



### Glass inserts for ALEX tray

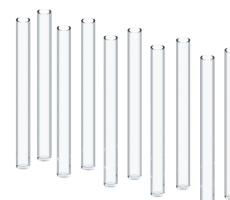
for CIS 4 glass liners

■ 10 units

■ 100 units

013794-010-00

013794-100-00



### O-ring for glass inserts

for ALEX tray

■ 10 units

■ 100 units

014292-010-00

014292-100-00





S00135-700-02



MAKING LABS WORK

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