

Tk The Teknokroma New range of Diskobolus™ Septa



diskobolus septa by Teknokroma™



Septum is the most general source of contaminants in the injection port. The baseline noise or the appearance of ghost peaks in the chromatogram can be a consequence of the septum bleed or of the samples of former injections that have been adsorbed on the septum surface.

Teknokroma presents the new range of **diskobolus™** septa that have been specially designed and prepared to work at high temperatures, with low bleed, and a better baseline.

General observations to consider in the Septum election:

- Injector temperature
- Column temperature (isothermal or programmed)
- Detector sensitivity

Septa quickly deteriorate when the injector temperature increases, and consequently the level of bleed may also increase.

These peaks coming from the degradation of the silicone of the septum, can be reduced with the gas flow of the septum purge, with the Split injection or using the lowest possible temperature in the injector.

The existence of rare peaks - called "ghost peaks", generally takes place during the temperature programme where volatile

materials of the septum accumulate at the column head during the period of cooling.

When the column warms up again, in the following temperature programme, the accumulated volatile materials elute, ghost peaks and a baseline deviation appears, or a combination of both factors.

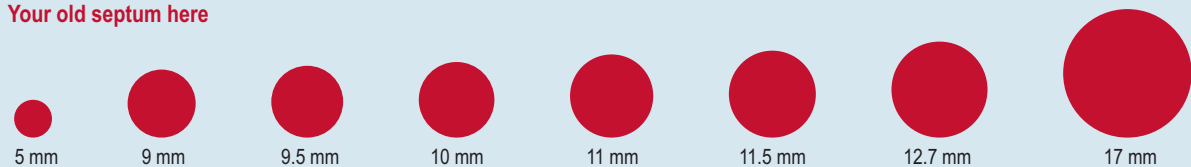
Influence factors in the septum bleeding

- Type of septum - some septa bleed more than others
- Working temperature of the septum - bleed increases with temperature
- Time after septum installation - bleed decreases gradually with the use of the septum
- Column cooling time - with longer cooling time the accumulation of contaminants in the column head increases
- Septum localization - bleed increases when the septum compression through the nut is high
- Column length and stationary phase amount - short columns and small phases thickness keep less bleeding

In the analysis of compounds, septum bleed interferes with the results according to the detector sensitivity. In situations where less sensitivity may be required, septum bleed has less importance.

Measure Guide

Your old septum here

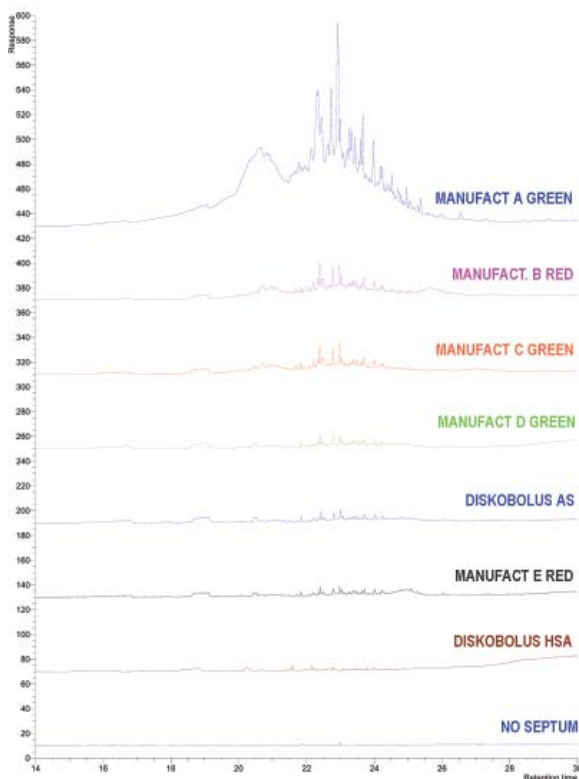


The Teknokroma New range of Diskobolus™ Septa Tk

Septum Comparison



Comparing **diskobolus™ hsa** and **diskobolus™ as** septa from Teknokroma to other manufacturers.



Column: Teknokroma Capillary Column **TRB-5**, P/N TR-121515

Dimensions: 15 m x 0.53 mm x 1.5 µm

Sample: A small piece of each type of septum with similar form and measures is inserted in the splitless liner.

Injection: splitless (10 min), 250°C

Carrier gas: He, constant flow 4 mL/min

Temperature programme: 50°C (15 min) @ 20°C/min at 250°C (15 min)

Detector: FID, 280°C

Performance Recommendations

Avoid touching the septum with the fingers, in order to avoid a contamination from the filth of the user fingers.

Put the lid on the septa container once it has been opened, to avoid cross contamination.

Change the septum periodically - at least once a week -, this will avoid the leaks through the septum with the consequent losses of time and possibility to damage the column in an irreversible way.

It is preferable to change the septum at the end of the day, maintaining a high oven temperature to avoid the accumulation of bleed during the night. Alternatively, make a temperature programming for the following day to eliminate contaminant traces of septum volatiles.

Once the septum has been changed, verify the flow at the end of the column or the pressure at the entry, to make it sure that the septum has been correctly sealed.

Do not screw up the septum with the nut more than it is necessary.

Use a guide for the needle to prolong the syringe and septum life. The guide helps to inject always in the same place, and avoids random perforations that may cause leaks.

Use needles with narrow outer diameters to avoid the loss of small pieces of septum; this will increase the septum useful life and will avoid the appearance of tails with active compounds.

In case of working with a high sensitivity detector, it is necessary to put the septum in the injection port all the night to obtain the least possible bleed.

Septum Size Chart

Instrument	Septum size (mm)	Instrument	Septum size (mm)
Agilent (HP)		Pye/Unicam	
5880A, 5890, 6890, 6850	11	All Models	7
5700, 5880	9.5/10	Shimadzu	
On-Column Injection	5	All Models	Plug
CE Instruments (TMQ)		Varian	
TRACE GC	17	Injector type:	
Finnigan (TQM)		Varian Packed Column	9.5/10
GC 9001	9.5	Split/Splitless:	
GCQ	9.5	Varian 1078/1079	11.5
GCQ w/TRACE	17	Varian 1177	9
QCQ	9.5	Varian 1075/1077	11.5
TRACE 2000	9.5	Varian 1040/41/60/61	9.5
Fisons/Carlo Erba (TQM)		Varian 1093/94 SPI	11.5
8000 Series	17	Thermo	
PerkinElmer		PTV injector	12.7
Sigma Series	11		
900, 990	11		
8000 Series	11		
Auto SYS	11		
Auto SYS XL	11		

Tk The Teknokroma New range of Diskobolus™ Septa

Diskobolus™ hsa (high sensitivity analysis)



- Ideal for GC/ MS
- Temperature range: 100 - 350 °C
- Pre-conditioned, ready to be used
- It is supplied in glass containers for high purity

diskobolus™ hsa (high sensitivity analysis) septum has been specially designed and prepared to work at high temperatures, with a low bleed and a good baseline. Ideal for analysis where high sensitivity is required, like in trace analysis, where low bleed and stability are essential in case of high temperatures.

Teknokroma controls bleeding and the penetration tolerance of each septa batch. Each septum is pre-conditioned and ready to be used.

“If the septum you use has bleed problems, try our diskobolus™ hsa septa”

Cat.No	Description	Pk
TR-D030000	diskobolus hsa 9.5 mm (3/8")	50
TR-D030100	diskobolus hsa 11 mm D. (7/16")	50
TR-D030200	diskobolus hsa 17 mm D.	50
TR-D030300	diskobolus hsa "Shimadzu Plug"	50

Diskobolus™ as (auto-sampler)



- Ideal for autosamplers
- Extremely low bleed
- Long-life injection (more than 200 injections)
- High stability at more than 350 °C
- Supplied in glass containers for high purity.

diskobolus™ as septum (auto-sampler) has been manufactured by means of a new technology in the silicone field, and with an extraordinary conditioning process achieving an excellent performance in many applications of gas chromatography.

Ideal to work with autosamplers, it has a long useful life and an extremely low bleed.

“the septum with the best quality /price relationship”

Cat.No	Description	Pk
TR-D030500	diskobolus as 9,5 mm D. (3/8")	50
TR-D030600	diskobolus as 11 mm D. (7/16")	50

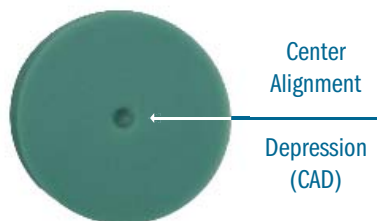
Economy Diskobolus™ Blue Septa (Blue)



The Economy **diskobolus™** Blue septa are designed for non-demanding, routine applications. They are easy to penetrate, with a durometer rating of 40-45. These septa can be used up to 200-250°C and are suitable for 90% of all GC analysis. Made from silicone. The package is for 100 pieces.

Cat.No	Description	Pk
TR-D033070	diskobolus Blue 6.4 mm D. (1/4")	100
TR-D033072	diskobolus Blue 9.5 mm D. (3/8")	100
TR-D033074	diskobolus Blue 11 mm D. (7/16")	100
TR-D033076	diskobolus Blue 12.7 mm. D. (1/2")	100

Diskobolus™ Septa Center Alignment Depression (CAD) for Improved Performance



- Center Alignment Depression guides the needle for easy penetration
- Reduce needle bending
- Precision molding assures accurate fit
- Available in selected sizes of our premium septa
- Increase septa life

The Teknokroma New range of Diskobolus™ Septa Tk

Diskobolus™ BTO Premium Septa



- Extended Temperature Range , Low Bleed
- Maximum Temperature 400 °C
- Virtually eliminates injection-port sticking
- Pre-conditioned; packaged in glass to prevent contamination
- Each batch GC-FID tested
- Ideal for use with low bleed "Mass Spec" capillary columns

This septa has an excellent performance. When you need septa to use with high temperature and low bleed these are the septa you should use.

The **diskobolus™** BTO Septa have been optimized to reduce injection port adhesion. Is an ideal septum for trace analysis, high injection port temperature.

The **diskobolus™** BTO Septa are pre-conditioned and packaged in glass to prevent contamination.

Cat.No	Description	Pk
TR-D033000	diskobolus BTO 5 mm D. CAD*	50
TR-D033002	diskobolus BTO 6.4 mm D. (1/4")	50
TR-D033004	diskobolus BTO 9 mm D. CAD*	50
TR-D033006	diskobolus BTO 9.5 mm. D. (3/8")	50
TR-D033008	diskobolus BTO 10 mm. D.	50
TR-D033010	diskobolus BTO 11 mm. D. (7/16") CAD*	50
TR-D033012	diskobolus BTO 11 mm. D. (7/16") CAD*	100
TR-D033014	diskobolus BTO 11.5 mm. D. CAD*	50
TR-D033016	diskobolus BTO 12.7 mm. D. (1/2") CAD*	50
TR-D033018	diskobolus BTO 17 mm. D. CAD*	50
TR-D033020	diskobolus BTO "Plug", for Shimadzu	50

* CAD "Center Alignment Depression"

Diskobolus™ Long Life Septa (LL)



- Outstanding Lifetime
- Premium Septum for autosamplers
- Ideal for Overnight Runs
- Up to 400 injections per Septum
- Maximum Temperature 400 °C
- Soft, 45 Durometer, Easy On Autosampler Needles

The **diskobolus™** Long Life Septum , has been developed as an advanced GC septum for autosampler use, with significantly longer life. **diskobolus™** Long Life septum typically achieves 400 injections.

without failure, when used with a rounded-tip (HP-style) needles and autosampler or needle guide. Now you can make extended autosampler runs without fear of sample loss, caused by blow-back of leaking carrier gas. **diskobolus™** Long Life septum is also ideal for standard manual-injection GC and GC/MS. They are packaged in glass vials.

Cat.No	Description	Pk
TR-D033050	diskobolus Long Life 5 mm D. CAD*	50
TR-D033052	diskobolus Long Life 9 mm D. CAD*	50
TR-D033054	diskobolus Long Life 9.5 mm D. (3/8")	50
TR-D033056	diskobolus Long Life 11 mm. D. (7/16") CAD*	50
TR-D033058	diskobolus Long Life 11 mm. D. (7/16") CAD*	100
TR-D033060	diskobolus Long Life 11.5 mm. D. CAD*	50
TR-D033062	diskobolus Long Life 12.7 mm. D. (1/2") CAD*	50
TR-D033064	diskobolus Long Life 17 mm. D.	50
TR-D033066	diskobolus Long Life "Plug", for Shimadzu	50

* CAD "Center Alignment Depression"

Diskobolus™ Green Septa



- True Long-Life, High Temperature Green Septum
- More injections per Septum
- Reduced Injection Port Sticking
- Maximum Temperature 400 °C

The **diskobolus™** Green Septum was specifically created to combine significantly longer injection life, low bleed and low injection port adhesion. The result is a green septum good for general purpose use. The septa are packaged in glass vials for high purity.

Cat.No	Description	Pk
TR-D033030	diskobolus Green 5 mm D. CAD*	50
TR-D033032	diskobolus Green 9 mm D. CAD*	50
TR-D033034	diskobolus Green 9.5 mm D. (3/8")	50
TR-D033036	diskobolus Green 11 mm. D. (7/16") CAD*	50
TR-D033038	diskobolus Green 11 mm. D. (7/16") CAD*	100
TR-D033040	diskobolus Green 11.5 mm. D. CAD*	50
TR-D033042	diskobolus Green 12.7 mm. D. (1/2") CAD*	50
TR-D033044	diskobolus Green 17 mm. D.	50
TR-D033046	diskobolus Green "Plug", for Shimadzu	50

* CAD "Center Alignment Depression"

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Accessories

Septum needle Guide



Attaches to most conventional chromatograph inlets. The conical needle guide entrance is located about one inch away from the hot septum. It remains cool to the touch, eliminating premature flashing. It helps prevent bent needles when using harder septa. The Needle Guide also lengthens septum life. The needle guide fits into a 3/16" diameter hole in the septumcap; the cap can be drilled out if it has a narrower opening.

Cat.No	Description	Pk
TR-K450050	Septum Needle Guide for 3/16" hole	2

Injection Port Cleaning Kit



It is designed for cleaning all GC injection ports, including those in Shimadzu instruments. Included are three stainless steel brushes, 5 mm (for Shimadzu), 1/4" and 3/8", and one scraper for removing septum residue.

Cat.No	Description	Pk
TR-K206211	Injection Port Cleaning Kit	1

Septa Pick



The Septa Pick is useful for removing small pieces of septa lodged in the threads and corners of the septum cap or injection port. It can also be used to remove small bits of graphite ferrule from the cap and fittings of column connectors; other small cleaning jobs.

Cat.No	Description	Pk
TR-K205465	Septa Pick	1

Micro Hook



This is a multi-purpose hook used for pulling O-rings, springs, or septum fragments.

Cat.No	Description	Pk
TR-K205678	Micro Hook	1





Ferrules for Gas Chromatography

Ferrules for gas chromatography are used to seal the connections between the column and the injection and detection systems.

The ideal GC column ferrules provide a perfect seal avoiding leaks that would let the entrance of air and contaminants into the equipment, damage the baseline and increase the background signal.

Ferrules must not stick to the column and must tolerate temperature changes during programming.

Ferrule selection

General considerations in the ferrule selection:

- Injector temperature
- Type and sensitivity of the detector
- Type of material that provides a perfect seal to avoid leaks

How to avoid problems with ferrules

- Change the ferrules on installing a new column
- Avoid all type of fingers' grease and other contaminants
- Do not overtighten the ferrules. As a general rule, seals at ¼ turn past fingertight are enough.
- Observe if the reusable ferrules are damaged before using them again.

When is it necessary to change the ferrules

- When some changes are observed in retention times
- In case of baseline drift caused by the entrance of oxygen and possible reaction with the stationary phase
- When sample loss is observed
- Increase of the detector background signal

Types of Ferrules

Graphite

Graphite is the best material to work at high temperature and at the same time is the softest ferrule. Therefore it fits the capillary column and seals effectively at only ¼ turn past fingertight. As this is a very soft material, there are easily destroyed or deformed. Ideal for FID and NPD detectors.

Do not use with MS or other oxygen sensitive detectors. Upper temperature limit 450°C.

Vespel/Graphite

Vespel /Graphite ferrules are recommended for applications with GC/MS interface or other oxygen sensitive detectors.

The ferrule composition is 60% polyimide and 40% graphite. It is a ferrule for general use in Gas Chromatography.

It is mechanically robust and forms a perfect seal. It is a reusable ferrule. It needs a frequent retightening. Limit temperature 400°C

Vespel

The composition of the Vespel ferrule is 100% polyimide. It is mechanically robust. It can be removed and reused several times. It is an ideal material for glass and metal columns. It needs a frequent retightening. Limit temperature 350°C.

Teflon

These ferrules have been manufactured with 100% Teflon. It is totally inert and very soft. It is used for glass columns. Limit temperature 250°C.

Tk New Teide™ Ferrules for Gas Chromatography

Graphite Ferrules (100%)



Features:

- Ideal to work with FID and NPD interface applications
- General use to work with capillary columns
- It is the best material to work at high temperatures

Advantages:

- They seal perfectly in fused silica and glass columns
- They resist highest temperature, 450°C
- Very easy to remove

Limitations:

- They are easily deformed and can only be reused if they are not tighten in excess
- Not recommended to work with GC/MS detectors

Graphite ferrules, (short ferrules) for Agilent 4890, 5890, 6890 except for GC/MS

Cat.No	Description	For Capillary Column	Pk
TR-T031001	teide 1/16" to 0.4 mm	0.18 mm I.D.	10
TR-T031000	teide 1/16" to 0.5 mm	0.25-0.32 mm I.D.	10
TR-T031010	teide 1/16" to 0.8 mm	0.53 mm I.D.	10
TR-T031012	teide 1/16" to 1.0 mm	0.53-0.65 mm I.D.	10
TR-T031014	teide 1/16" to 1/16"	1/16" O.D.	10

Graphite standard ferrules

Cat.No	Description	For Capillary Column	Pk
TR-T031020	teide 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031030	teide 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031040	teide 1/16" to 0.8 mm	0.53 mm I.D.	10
TR-T031042	teide 1/16" to 1.0 mm	0.65 mm I.D.	10

Graphite standard ferrules (two holes)

Cat.No	Description	For Capillary Column	Pk
TR-T031100	teide 1/16" 2 holes, 0.4/0.4	0.25 mm I.D.	10
TR-T031102	teide 1/16" 2 holes, 0.5/0.5	0.32 mm I.D.	10

Graphite reducing ferrules



Cat.No	Description	For Capillary Column	Pk
TR-T031104	teide 1/8" to 0.4 mm	0.25 mm I.D.	10
TR-T031106	teide 1/8" to 0.5 mm	0.32 mm I.D.	10
TR-T031108	teide 1/8" to 0.8 mm	0.53 mm I.D.	10
TR-T031110	teide 1/8" to 1/16"	1/16" O.D.	10

TR-T031112	teide 1/4" to 0.5 mm	0.32 mm I.D.	10
TR-T031116	teide 1/4" to 0.8 mm	0.53 mm I.D.	10
TR-T031118	teide 1/4" to 4 mm	4 mm O.D.	10
TR-T031120	teide 1/4" to 6 mm	6 mm O.D.	10
TR-T031122	teide 1/4" to 1/16"	1/16" O.D.	10
TR-T031124	teide 1/4" to 1/8"	1/8" O.D.	10

TR-T031126	teide 1/8" two holes 0.5/0.5 mm	0.32 mm I.D.	10
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Special graphite ferrules for Shimadzu



Cat.No	Description	For Capillary Column	Pk
TR-T031128	teide 5 mm for Shimadzu	5 mm O.D.	10

Special graphite ferrules for ThermoFinnigan M4 Nut and M8 Nut



M4 Nut



M8 Nut

Cat.No	Description	For Capillary Column	Pk
TR-T031130	teide 0.5 mm ID (M8 nut) for ThermoFinnigan (CE)		10
TR-T031132	teide 0.8 mm ID (M8 nut) for ThermoFinnigan (CE)		10

TR-T031134	teide Cup Ferrule for Thermo 0.25 mm I.D. (M4 nut)		10
TR-T031136	teide Cup Ferrule for Thermo 0.35 mm I.D. (M4 nut)		10
TR-T031138	teide Cup Ferrule for Thermo 0.45 mm I.D. (M4 nut)		10
TR-T031140	teide Cup Ferrule for Thermo 0.80 mm I.D. (M4 nut)		10

Liner Seals for ThermoFinnigan Trace



8 mm graphite linear seal for ThermoFinnigan Trace TR-T032050

Cat.No	Description	For Capillary Column	Pk
TR-T032050	teide Graphite Liner Seal 8mm for ThermoFi., Trace GC		1

Liner Seals for Agilent



O-Ring TR-T032056

Cat.No	Description	For Capillary Column	Pk
TR-T032052	teide Graphite Liner Seal 6.35 mm ID for Agilent		10
TR-T032054	teide Graphite Liner Seal 6.52 mm ID for Agilent		10
TR-T032056	teide O-Ring made of Viton for Agilent		12

New Teide™ Ferrules for Gas Chromatography Tk

Vespel/Graphite Ferrules

Features:

- Ferrules recommended for GC/MS detectors
- More appropriate ferrules for general use in capillary columns
- Perfect seal

Advantages:

- Mechanically robust and long life time ferrules
- Reusable ferrules

Limitations:

- Must be retightened
- Temperature limit 400°C

Vespel/Graphite ferrules, (short ferrules) for Agilent 4890, 5890, 6890



Cat.No	Description	For Capillary Column	Pk
TR-T031060	teide 1/16" to 0.3 mm	0.10 mm I.D.	10
TR-T031070	teide 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031080	teide 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031090	teide 1/16" to 0.8 mm	0.53 mm I.D.	10

Vespel/Graphite standard ferrules



Cat.No	Description	For Capillary Column	Pk
TR-T032000	teide 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T032010	teide 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T032020	teide 1/16" to 0.8 mm	0.53 mm I.D.	10
TR-T032022	teide 1/16" to 1.0 mm	0.65 mm I.D.	10

Vespel/Graphite standard ferrules (two holes)

Cat.No	Description	For Capillary Column	Pk
TR-T031150	teide 1/16" 2 holes, 0.4/0.4	0.25 mm I.D.	10
TR-T031152	teide 1/16" 2 holes, 0.5/0.5	0.32 mm I.D.	10

Vespel/Graphite reducing ferrules



Cat.No	Description	For Capillary Column	Pk
TR-T031160	teide 1/8" to 0.4 mm	0.25 mm I.D.	10
TR-T031162	teide 1/8" to 0.5 mm	0.32 mm I.D.	10
TR-T031164	teide 1/8" to 0.8 mm	0.53 mm I.D.	10
TR-T031170	teide 1/8" to 1/16"	1/16" O.D.	10
TR-T031172	teide 1/4" to 0.4 mm	0.25 mm I.D.	10
TR-T031174	teide 1/4" to 0.5 mm	0.32 mm I.D.	10
TR-T031176	teide 1/4" to 0.8 mm	0.53 mm I.D.	10
TR-T031178	teide 1/4" to 1/16"	1/16" O.D.	10
TR-T031180	teide 1/4" to 6 mm	6 mm O.D.	10
TR-T031182	teide 1/4" to 1/8"	1/8" O.D.	10

Teide™ Vespel/Graphite reducing ferrules Two Holes

Cat.No	Description	For Capillary Column	Pk
TR-T031166	teide 1/8", two holes 0.5/0.5 mm	0.32 mm I.D.	10
TR-T031168	teide 1/8", two holes 0.8/0.8 mm	0.53 mm I.D.	10

Vespel Ferrules

Features:

- The composition is 100% polyamide
- Ideal for applications with isotherm temperature
- They can be reused several times
- Upper temperature limit 350°C

Advantages:

- Mechanically robust
- Reusable for several column changes

Limitations:

- Must be frequently retightened
- Do not resist high temperatures
- Leaks in case of temperature programming

Vespel ferrules, (short ferrules) for Agilent 4890, 5890, 6890

Cat.No	Description	For Capillary Column	Pk
TR-T031210	teide short 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031212	teide short 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031214	teide short 1/16" to 0.8 mm	0.53 mm I.D.	10

Vespel standard ferrules

Cat.No	Description	For Capillary Column	Pk
TR-T031216	teide 1/16" to 0.3 mm	0.10-0.18 mm I.D.	10
TR-T031218	teide 1/16" to 0.4 mm	0.25 mm I.D.	10
TR-T031220	teide 1/16" to 0.5 mm	0.32 mm I.D.	10
TR-T031222	teide 1/16" to 0.8 mm	0.53 mm I.D.	10
TR-T031224	teide 1/16" to 1.0 mm	0.65 mm I.D.	10

TR-T031226	teide 1/16" 2- holes 0.4/0.4 mm	0.25 mm I.D.	10
TR-T031228	teide 1/16" 2- holes 0.5/0.5 mm	0.32 mm I.D.	10

Vespel reducing ferrules

Cat.No	Description	For Capillary Column	Pk
TR-T031232	teide 1/8" to 0.4 mm	0.25 mm I.D.	10
TR-T031234	teide 1/8" to 0.5 mm	0.32 mm I.D.	10
TR-T031236	teide 1/8" to 0.8 mm	0.53 mm I.D.	10
TR-T031238	teide 1/8" 2-hole 0.5/0.5 mm	0.32 mm I.D.	10
TR-T031239	teide 1/8" 2-hole 0.8/0.8 mm	0.53 mm I.D.	10
TR-T031242	teide 1/8" to 1/16"	1/16" O.D.	10
TR-T031244	teide 1/4" to 1/16"	1/16" O.D.	10
TR-T031246	teide 1/4" to 1/8"	1/8" O.D.	10

Tk New Teide™ Ferrules for Gas Chromatography

Straight Ferrules

Graphite Straight Ferrules



Cat.No	Description	Pk
TR-T031157	teide Straight ferrule for tube 1/16" O.D.	10
TR-T031158	teide Straight ferrule for tube 1/8" O.D.	10
TR-T031159	teide Straight ferrule for tube 1/4" O.D.	10

Vespal/Graphite Straight Ferrules



Cat.No	Description	Pk
TR-T031190	teide Straight ferrule for tube 1/16" O.D.	10
TR-T031192	teide Straight ferrule for tube 1/8" O.D.	10
TR-T031194	teide Straight ferrule for tube 1/4" O.D.	10

Vespal Straight Ferrules



Cat.No	Description	Pk
TR-T031280	teide Straight ferrule for tube 1/16" O.D.	10
TR-T031282	teide Straight ferrule for tube 1/8" O.D.	10
TR-T031284	teide Straight ferrule for tube 1/4" O.D.	10

PTFE Straight Ferrules



Cat.No	Description	Pk
TR-T031250	teide Straight ferrule for tube 1/16" O.D.	10
TR-T031260	teide Straight ferrule for tube 1/8" O.D.	10
TR-T031270	teide Straight ferrule for tube 1/4" O.D.	10

Accessories

Ferrule Remover

Two tools are supplied for capillary ferrules from 0.4 mm to 0.8 mm id. The tip has a spiral-cut ratchet design that slides into the ferrule easily then grabs on the way out.



Cat.No	Description	Pk
TR-K205315	Ferrule Remover for 0,4 and 0,8 mm ID	1













Injection Liner Cleaning Kit

The kit includes four sizes of nylon brush to clean most liners, and one foot of pipe cleaner. The 4 mm and 2 mm diameter brushes clean standard liners. The 1 mm and 0.5 mm diameter brushes can reach inside reversible tapered liners.





Cat.No	Description	Pk
TR-K205215	Injection Liner Cleaning Kit	1






Liners for Agilent Capillary GCs

	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L04010	2 mm Splitless		6.5	79	1
	TR-L04010-5	2 mm Splitless		6.5	79	5
	TR-L04010-10	2 mm Splitless		6.5	79	10
	TR-L04012	2 mm Splitless, Quartz	5181-8818	6.5	79	1
	TR-L04012-5	2 mm Splitless, Quartz		6.5	79	5
	TR-L04012-10	2 mm Splitless, Quartz		6.5	79	10
	TR-L04014	4 mm Split/Splitless		6.3	79	1
	TR-L04014-5	4 mm Split/Splitless	210-3003	6.3	79	5
	TR-L04014-10	4 mm Split/Splitless		6.3	79	10
	TR-L04016	4 mm Split/Splitless, Quartz		6.3	79	1
	TR-L04016-5	4 mm Split/Splitless, Quartz		6.3	79	5
	TR-L04016-10	4 mm Split/Splitless, Quartz		6.3	79	10
	TR-L04018	4 mm Split/Splitless, with Deactivated Glass Wool	19251-60540	6.3	79	1
	TR-L04018-5	4 mm Split/Splitless, with Deactivated Glass Wool		6.3	79	5
	TR-L04018-10	4 mm Split/Splitless, with Deactivated Glass Wool		6.3	79	10
	TR-L04020	Split Liner 4 mm id with Cup	18740-80190	6.3	79	1
	TR-L04020-5	Split Liner 4 mm id with Cup		6.3	79	5
	TR-L04020-10	Split Liner 4 mm id with Cup		6.3	79	10
	TR-L04022	Split Cup Liner, 4 mm id with Deactivated Glass Wool		6.3	79	1
	TR-L04022-5	Split Cup Liner, 4 mm id with Deactivated Glass Wool		6.3	79	5
	TR-L04022-10	Split Cup Liner, 4 mm id with Deactivated Glass Wool		6.3	79	10
	TR-L04024	Split Cup Liner, 4 mm with OV-1/Chromosorb W-P 80/100	18740-60840	6.3	79	1
	TR-L04024-5	Split Cup Liner, 4 mm with OV-1/Chromosorb W-P 80/100		6.3	79	5
	TR-L04024-10	Split Cup Liner, 4 mm id with OV-1/Chromosorb W-P 80/100		6.3	79	10
	TR-L04026	Single Taper Liner, 2 mm id		6.5	79	1
	TR-L04026-5	Single Taper Liner, 2 mm id		6.5	79	5
	TR-L04026-10	Single Taper Liner, 2 mm id		6.5	79	10
	TR-L04028	Single Taper Liner, 4 mm id	5181-3316	6.5	79	1
	TR-L04028-5	Single Taper Liner, 4 mm id		6.5	79	5
	TR-L04028-10	Single Taper Liner, 4 mm id		6.5	79	10
	TR-L04030	Single Taper Liner, 4 mm id with Deactivated Glass Wool	5062-3587	6.5	79	1
	TR-L040305	Single Taper Liner, 4 mm id with Deactivated Glass Wool		6.5	79	5
	TR-L04030-10	Single Taper Liner, 4 mm id with Deactivated Glass Wool		6.5	79	10
	TR-L04032	Double Taper Liner, 4 mm id	5181-3315	6.5	79	1
	TR-L04032-5	Double Taper Liner, 4 mm id		6.5	79	5
	TR-L04032-10	Double Taper Liner, 4 mm id		6.5	79	10



Liners for Agilent Packed columns GCs

	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L04050	Universal Packed Inj. Liner, Deactivated	5181-3382		93	1
	TR-L04050-25	Universal Packed Inj. Liner, Deactivated			93	25
	TR-L04052	Universal Packed Inj. Liner, Not Deactivated	5080-8732	93		1
	TR-L04052-25	Universal Packed Inj. Liner, Not Deactivated		93		25








Liners for Perkin Elmer Capillary GCs

	TR-L04070	Split Liner for Autosystem	N610-1052	4	92	1
	TR-L04070-5	Split Liner for Autosystem		4	92	5
	TR-L04070-10	Split Liner for Autosystem		4	92	10
	TR-L04072	Split Liner for Autosystem with Deactivated Glass Wool		4	92	1
	TR-L04072-5	Split Liner for Autosystem with Deactivated Glass Wool		4	92	5
	TR-L04072-10	Split Liner for Autosystem with Deactivated Glass Wool		4	92	10
	TR-L04074	Split Liner for Autosystem	N-612-1372	2	92	1
	TR-L04074-5	Split Liner for Autosystem		2	92	5
	TR-L04074-10	Split Liner for Autosystem		2	92	10
	TR-L04076	Dimple Splitter	0330-5181		100	1
	TR-L04076-5	Dimple Splitter			100	5
	TR-L04076-10	Dimple Splitter			100	10
	TR-L04078	Splitless	0330-5180		100	1
	TR-L04078-5	Splitless			100	5
	TR-L04078-10	Splitless			100	10



Liners for Perkin Elmer Packed columns GCs

	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L04090	Glass Liner for Autosystem	N-610-1048		112	1
	TR-L04090-5	Glass Liner for Autosystem			112	5
	TR-L04090-10	Glass Liner for Autosystem			112	10
	TR-L04092	Glass Liner for 8000 Series, Sigma 2000	0330-2221		101	1
	TR-L04092-5	Glass Liner for 8000 Series, Sigma 2000			101	5
	TR-L04092-10	Glass Liner for 8000 Series, Sigma 2000			101	10











Liners for ThermoFinnigan Capillary GCs

	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L05000	Split Liner, 3 mm ID	453 20031	105	105	1
	TR-L05000-5	Split Liner, 3 mm ID				5
	TR-L05000-10	Split Liner, 3 mm ID				10
	TR-L05002	Split Liner, 5 mm ID	453 20030	105	105	1
	TR-L05002-5	Split Liner, 5 mm ID				5
	TR-L05002-10	Split Liner, 5 mm ID				10
	TR-L05004	Splitless Liner, 3 mm ID	453 20032	105	105	1
	TR-L05004-5	Splitless Liner, 3 mm ID				5
	TR-L05004-10	Splitless Liner, 3 mm ID				10
	TR-L05006	Splitless Liner, 5 mm ID	453 20033	105	105	1
	TR-L05006-5	Splitless Liner, 5 mm ID				5
	TR-L05006-10	Splitless Liner, 5 mm ID				10
	TR-L05008	For Wide Bore Columns	453 00310	105	105	1
	TR-L05008-5	For Wide Bore Columns				5
	TR-L05008-10	For Wide Bore Columns				10
	TR-L05010	Cup Liner	453 00320	105	105	1
	TR-L05010-5	Cup Liner				5
	TR-L05010-10	Cup Liner				10
	TR-L05012	PTV Liner, 2 mm ID	453 22045	120	120	1
	TR-L05012-5	PTV Liner 2 mm ID				5
	TR-L05012-10	PTV Liner 2 mm ID				10



Liners for Shimadzu Capillary GCs

	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L05020	Split Liner 14A	221-32544-01	99	99	1
	TR-L05020-5	Split Liner 14A				5
	TR-L05020-10	Split Liner 14A				10
	TR-L05022	Splitless Liner 14A	221-32544-00	99	99	1
	TR-L05022-5	Splitless Liner 14A				5
	TR-L05022-10	Splitless Liner 14A				10

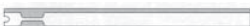




Liners for Varian Capillary GCs for Injector 1177

	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L05030	2 mm Splitless		6.5	79	1
	TR-L05030-5	2 mm Splitless				5
	TR-L05030-10	2 mm Splitless				10
	TR-L05032	2 mm Splitless, Quartz	392611924	6.5	79	1
	TR-L05032-5	2 mm Splitless, Quartz				5
	TR-L05032-10	2 mm Splitless, Quartz				10
	TR-L05034	4 mm Split/Splitless		6.3	79	1
	TR-L05034-5	4 mm Split/Splitless				5
	TR-L05034-10	4 mm Split/Splitless				10
	TR-L05036	4 mm Split/Splitless, Quartz		6.3	79	1
	TR-L05036-5	4 mm Split/Splitless, Quartz				5
	TR-L05036-10	4 mm Split/Splitless, Quartz				10
	TR-L05038	4 mm Split/Splitless, with Deactivated Glass Wool	392611934	6.3	79	1
	TR-L05038-5	4 mm Split/Splitless, with Deactivated Glass Wool				5
	TR-L05038-10	4 mm Split/Splitless, with Deactivated Glass Wool				10
	TR-L05040	Split Liner 4 mm id with Cup	392611931	6.3	79	1
	TR-L05040-5	Split Liner 4 mm id with Cup				5
	TR-L05040-10	Split Liner 4 mm id with Cup				10
	TR-L05042	Split Cup Liner, 4 mm id with Deactivated Glass Wool	392611932	6.3	79	1
	TR-L05042-5	Split Cup Liner, 4 mm id with Deactivated Glass Wool				5
	TR-L05042-10	Split Cup Liner, 4 mm id with Deactivated Glass Wool				10
	TR-L05044	Split Cup Liner, 4 mm id with OV-1/Chrom. W-P 80/100	392611933	6.3	79	1
	TR-L05044-5	Split Cup Liner, 4 mm id with OV-1/Chromosorb W-P 80/100				5
	TR-L05044-10	Split Cup Liner, 4 mm id with OV-1/Chromosorb W-P 80/100				10
	TR-L05046	Single Taper Liner, 2 mm id	392611926	6.5	79	1
	TR-L05046-5	Single Taper Liner, 2 mm id				5
	TR-L05046-10	Single Taper Liner, 2 mm id				10
	TR-L05048	Single Taper Liner, 4 mm id	392611927	6.5	79	1
	TR-L05048-5	Single Taper Liner, 4 mm id				5
	TR-L05048-10	Single Taper Liner, 4 mm id				10



Cat.No

	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk	
	TR-L05050	Single Taper Liner, 4 mm id with Deactivated Glass Wool	392611936	6.5	79	1
	TR-L05050-5	Single Taper Liner, 4 mm id with Deactivated Glass Wool		6.5	79	5
	TR-L05050-10	Single Taper Liner, 4 mm id with Deactivated Glass Wool		6.5	79	10
	TR-L05052	Double Taper Liner, 4 mm id	392611929	6.5	79	1
	TR-L05052-5	Double Taper Liner, 4 mm id		6.5	79	5
	TR-L05052-10	Double Taper Liner, 4 mm id		6.5	79	10

Liners for Varian Capillary GCs for Injector 1075/1077

	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L05054	4 mm Open Split Liner	16-000830-00		72	1
	TR-L05054-5	4 mm Open Split Liner			72	5
	TR-L05054-10	4 mm Open Split Liner			72	10
	TR-L05056	4 mm Open Split Liner with Glass Wool	01-900109-01		72	1
	TR-L05056-5	4 mm Open Split Liner with Glass Wool			72	5
	TR-L05056-10	4 mm Open Split Liner with Glass Wool			72	10
	TR-L05058	Frit Split Liner			72	1
	TR-L05058-5	Frit Split Liner	01-900109-3		72	5
	TR-L05058-10	Frit Split Liner	16-000830-01		72	10
	TR-L05060	Splitless, Borosilicate Glass	01-900109-05		74	1
	TR-L05060-5	Splitless, Borosilicate Glass	03-949437-90		74	5
	TR-L05060-10	Splitless, Borosilicate Glass	03-949437-00		74	10
	TR-L05062	Splitless, Quartz			74	1
	TR-L05062-5	Splitless, Quartz			74	5
	TR-L05062-10	Splitless, Quartz			74	10

Liners for Varian Capillary GCs for Injector 1093/1094

	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L05064	0.5 mm SPI			54	1
	TR-L05064-5	0.5 mm SPI	01-900109-06		54	5
	TR-L05064-10	0.5 mm SPI	03-918332-01		54	10
	TR-L05066	0.8 mm SPI			54	1
	TR-L05066-5	0.8 mm SPI	01-900109-07		54	5
	TR-L05066-10	0.8 mm SPI	03-918332-02		54	10

Liners for Varian Capillary GCs for Injector 1078/1079


	Cat.No	Description	Similar Item No.	OD (mm)	Lenght (mm)	Pk
	TR-L05068	3.4 mm ID X 5 mm OD			54	1
	TR-L05068-5	3.4 mm ID X 5 mm OD			54	5
	TR-L05068-10	3.4 mm ID X 5 mm OD			54	10



Chart Paper

- High Quality Chart Papers
- Available for many popular Integrators and recorders
- Buy the Case for Bigger Savings

Thermal Paper

Papers for Hewlett Packard

Cat.No	Model Number	Chart Type	pK.	Manuf. Chart Paper Nbr.
TR-K443181	5880A, 3888A	8.5" x 184", Z-fold blue	5	5080-8778
TR-K443182		8.5" x 184", Z-fold black	5	9270-0658
TR-K443192	3380A, 3385A Int.	8.5" x 184", Z-fold blue	5	5080-8735
TR-K443193	5840A, 5880 GC, 1082, 1084 LC	8.5" x 184", Z-fold black	5	
TR-K443194	3392, 3393A Int.	4.2" x 400", roll blue	2	5080-8800
TR-K443195		4.2" x 400", roll black	2	9270-1134
TR-K443191	3396A	9.5" x 272", roll, ink jet	4	5181-1219
TR-K443179	3396A	8.5" x 230", Z-fold ink jet	5	5062-3561

Papers for Shimadzu

Cat.No	Model Number	Chart Type	pK.	Manuf. Chart Paper Nbr.
TR-K441610	CR1A, CR1B	8 3/16" x 170", roll black	1 roll	221-13391-01
TR-K443612	CR3A	8 3/16" x 167", roll black	10	221-25412-00
TR-K441613	CR4A	255 mm x 45.1 m, black	1 roll	223-02000-12
TR-K443615	CR5A	208 mm x 45.1 m, black	10	223-02037-81
TR-K441617	CR7A	10 1/6" x 148"	1 roll	200-91527

Papers for Varian

Cat.No	Model Number	Chart Type	pK.	Manuf. Chart Paper Nbr.
TR-K443620	3400/3500/3600	4.3" x 150", black	2	03-917650
TR-K443604	Vista 401/402	8.5" x 184", Z-fold, black	5	03-906362-0
TR-K441599	4270/4290	9.4" x 183", roll, black	1 roll	00-997096-01

Papers for Waters

Cat.No	Model Number	Chart Type	pK.	Manuf. Chart Paper Nbr.
TR-K441608	730	8.5" x 184", Z-fold, blue	1	74703

Papers for Hitachi

Cat.No	Model Number	Chart Type	pK.	Manuf. Chart Paper Nbr.
TR-K443170		234 mm x 48.8 m, black	9	661-7501

Papers for Perkin Elmer

Cat.No	Model Number	Chart Type	pK.	Manuf. Chart Paper Nbr.
TR-K441189	LCI-100	283 mm x 30.5 m, roll black	1 roll	N-625-1026

Papers for Spectra Physics

Cat.No	Model Number	Chart Type	pK.	Manuf. Chart Paper Nbr.
TR-K443596	SP-4000 Series	9.4" x 184", Z-fold, black	5	A0022-020
TR-K443598	SP-4270, SP-4290 Chromojet, CH1, CH2	9.4" x 167", roll, black	10	A2157-020

Recorder Paper

Manufacturer	Cat.No	Model Number	Chart Type	pK.	Manuf. Chart Paper Nbr.
Houston	TR-K443198	D-5000, B-5000	11" X 100' roll, 0-10 English	4	EC-103
Kipp & Zonen	TR-K441199	BD111/12, BD40/41	230 mm x 20.1 m, 0-100	1 roll	XR-9
Linear	TR-K441184	1201/1202/1210	230 mm x 25.3 m, roll	1 roll	0100-0026
Linear	TR-K441186	142/143	120 mm x 30.5 m, roll	1 roll	0100-0011
Perkin Elmer	TR-K441395	56/200/561	276 mm x 30.5 m, roll	1 roll	056-7300

Helium Gas Leak Check and Flowmeter GC 525 **Tk**

Helium Gas Leak Check



- Pipe fittings
- Welding parts
- Pressure regulators

Specifications

Detection Method:	Thermal Conductivity Detector
Target gas:	Helium
Range:	High/Low
Sensitivity:	Minimum Detection Limit 0.01 mL/min
Display:	LCD
Power Supply:	Rechargeable Battery
Operation Temp:	10-35°C
Dimensions:	65 (W) x 37 (D) x 143 (H) mm
Weight:	330g approx.
Accessories:	Recharger AC 100 - 220v

Cat.No	Description
GL-2702-1941	Helium Gas Leak Detector LD 229

525 GC Flowmeter

Flow Measurement

Accurate and repeatable gas flow measurements are a crucial part of obtaining good results from your Gas Chromatograph. The new 525 GC Flowmeter makes gas flow measurement easier and more accurate, helping to eliminate user errors.

A large OLED display makes reading flows clear and easy, whilst the built in rechargeable battery means the user no longer has to worry about changing dead batteries.

The 525 GC Flowmeter has a 25 point calibration traceable to UKAS standards, to ensure the level of accuracy required in a professional laboratory. Users are able to set the temperature and pressure of their working environment and the 525 GC Flowmeter will automatically compensate for these changes from its calibration conditions.



Designed for Gas Chromatography

The 525 GC Flowmeter provides as standard, measurement of eight gases commonly used in gas chromatography. In addition to the standard flow measurement mode the 525 GC Flowmeter also features;

Linear Velocity

The user is able to select their column diameter in the options menu, the linear velocity can then be calculated and displayed. The user can easily switch between standard flow and linear velocity with a single button press.

Split Flow Calculation

Split flow mode allows the user to measure and store a column flow, the user can then measure the split flow and the 525 GC Flowmeter displays both the flow rate and the split ratio.

Specifications

Range:	0.1 to 500 ml/min (0.1 to 275 ml/min for Carbon Dioxide)
Resolution:	0.1 ml/min
Accuracy:	±0.4 ml/min or 2.5% of reading
Gases:	Air, Argon, Argon/5% Methane, Carbon Dioxide, Helium, Hydrogen, Nitrogen, Oxygen
Size:	68 x 130 x 30 mm
Weight:	150 g
Calibration:	Annually
Traceability:	Calibration traceable to UKAS standards

Cat.No	Description
TK-525GC	Teknokroma 525 GC Flowmeter

Tk Teknokroma 2t Head Space Sampler



The First Manual System
For Static Head Space

Technical Specifications

Heating temperature Range:	up to 140°C.
Variable injection:	up to 2,5 ml.
Temperature accuracy:	+/- 0,75°C
Holds up to 6 vials of:	2, 4, 6, 9, 10, 12, 20, 22 and 27 ml.
Sampling time control with accoustic alarm:	1 to 99 seconds
Equilibrium time control with accoustic alarm:	1 to 99 minutes
Stabilization time from 25°C to 70°C with 1 ml syringe and 6 empty 20 ml vials:	20 minutes
Safety temperature:	175°C
Power:	110 / 220 +/- 10% VAC.

It is according the Pharmacopeia test:

European Pharmacopeia 7th. (2011).

USP 35-NFO (2012).

The Teknokroma 2t Head Space Sampler for Head Space technique within your reach with a low cost and high precision level

The 2t sampler is the first manual system for Static Head Space that allows the application of this technique in a quantitative, manner.

Until now it was only possible to use the technique of Static Head Space with automatic equipment. This "equipment" has a high cost, low versatility and complex operations. For this reason the Static Head Space technique has not been fully used in most laboratories.

The new 2t sampler solves these problems making the technique available to all Gas Chromatography users in a economical and simple way.

It complies with all requeriments of the European CE.

Applications

- Volatiles in pharmaceuticals
- Flavours analysis in food and cosmetic products
- Alcohol and other toxic compounds in blood
- Screening of volatiles in all type of environmental samples (soils, waters, plastics, polymers, etc.)

Teknokroma 2t Head Space Sampler Tk



Put the syringe into the black holder.



After the equilibrium time is achieved, move the syringe holder into vial number 1, and aspirate the sample by moving the plunger up until the prefixed volume is reached.



Insert the closed vials with the sample into the heating block.



Inject the sample into the GC.
Repeat this sequence for the additional samples.



- Insert the syringe holder into the heating block.
- Set the temperature and the equilibrium time with the keyboard.
- Press the start.

Tk Teknokroma 2t Head Space Sampler

Performance qualification

To check the Head Space sampler, proper performance, the following reproducibility test is recommended. In this test, we check not only the equipment performance but we also evaluate:

- The vials are correctly sealed.
- The sampling procedure followed by the analyst is correct
- The Gas Chromatograph works properly
- The data-acquisition system works properly

Sample preparation

Add 2.5 l of benzene and 2.5 µl of toluene to 100 ml of water (25ppm), stir up until it is completely dissolved.

Adjust headspace sample conditions and inject. Integrate the benzene and toluene peaks of the 6 chromatograms obtained. The Relative Standard Deviation of the area quotients must be lower than 5%.

Benzene area	Toluene area	Area Ratio
3418.461	5441.008	0.628
3466.125	5449.905	0.625
3359.176	5381.354	0.624
3316.646	5374.388	0.624
3782.404	6035.683	0.627
3794.026	6063.646	0.626
Mean Value		0.626
Standard deviation (SD)		0.00163
Relative standard deviation (RSD)		0.26%

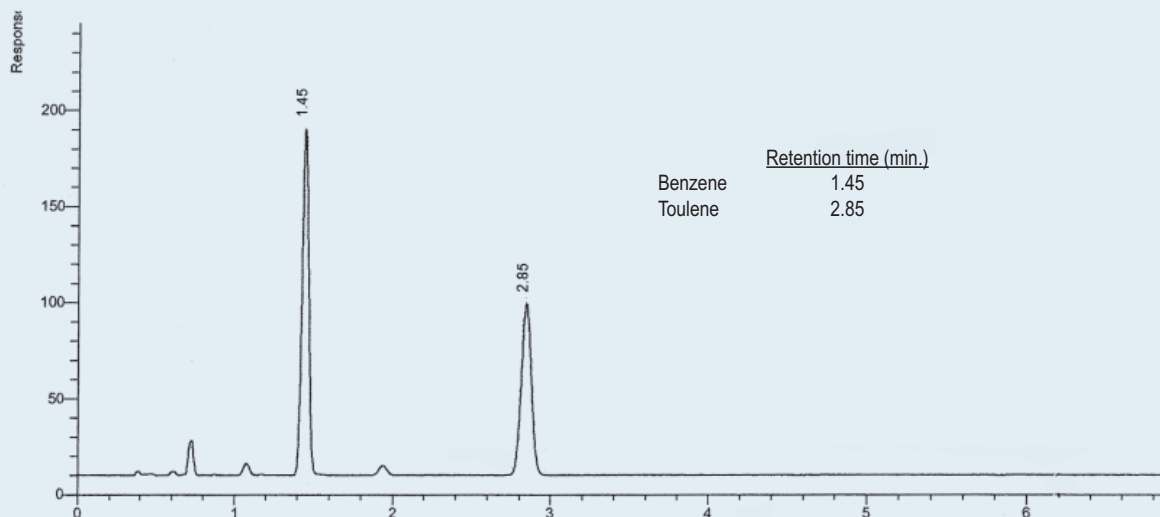
Cat.No	Description
TR-132110	2t Sampler for Static Head Space mod. 5060 (syringe not included)
TR-132113	APE Syringe nod. 1001 HS 1 ml.
TR-132112	APE Syringe nod. 1002 HS 2.5 ml.

Chromatographic Parameters

Column: **TRB-1**, P/N TR-113015
 Dimensions: 15m x 0,53mm x 3µm
 Injection: 0,7 ml, head space, (split 1:2), 150°C
 Carrier gas: He, 4psi (27.6 kPa)
 Oven temperature: 60°C (10 min.)
 Detector: FID, 250°C
 Sample: 5ml in 10ml vials (25ppm benzene/toluene in water)

Headspace conditions

10ml vials, P/N CC-10-CV
 Cap with blue silicone/PTFE seal P/N CC-20-ST3
 Heating block temperature: 75°C
 Equilibrium time: 30 minutes
 Sampling time: 30 seconds
 Syringe used: 1ml (1001 LTN, pst 5, P/N HA-81343)
 Sampled volume: 0,7ml





Cat.No	P/N Manufacturer	Description	Pk
CC-C4020-10	5182-0838	10 ml Vial, Flat Bottom 23 x 46 mm, Beveled Edge	100
CC-C4020-410		10 ml Vial, Flat Bottom 23 x 46 mm, Square Rim	1000
CC-C4020-210	5183-4475	10 ml Vial, Round Bottom 23 x 46 mm, Beveled Edge	100



CC-C4020-20	20 ml Vial, Flat Bottom 23 x 75 mm, Beveled Edge	100
CC-C4020-25	20 ml Vial, Flat Bottom 23 x 75 mm, Square Rim	1000
CC-C4020-2	20 ml Vial, Round Bottom 23 x 75 mm, Beveled Edge	100

20 mm Crimp Seals with Prefitted Septa for Headspace Vials



Cat.No	Seal Type	Septa	Pk
CC-C4020-34A	Regular	Ivory PTFE/Red Rubber, (-40 to +100°C)	100
CC-C4020-34AP	Pressure Release	Ivory PTFE/Red Rubber, (-40 to +100°C)	100
CC-C4020-39A	Regular	Clear PTFE/Gray Butyl (-40 to +120°C)	100
CC-C4020-43A	Magnetic Steel	Clear PTFE/Gray Butyl (-40 to +120°C)	100
CC-C4020-43AP	Pressure Release	Clear PTFE/Gray Butyl (-40 to +120°C)	100
CC-C4020-36A	Regular	Gray PTFE/Black Molded Butyl (-40 to +125°C)	100
CC-C4020-36AP	Pressure Release	Gray PTFE/Black Molded Butyl (-40 to +125°C)	100
CC-C4020-32A	Regular	Tan PTFE/White Silicone (-60 to +200°C)	100
CC-C4020-32AP	Pressure Release	Tan PTFE/White Silicone (-60 to +200°C)	100
CC-C4020-42A	Magnetic Steel	Clear PTFE/Traslucent Blue Silicone (-60 to +200°C)	100
CC-C4020-42AP	Pressure Release	Clear PTFE/Traslucent Blue Silicone (-60 to +200°C)	100
CC-C4020-37AP	Pressure Release	Aluminium Foil/White High Temp. Silicone (-60 to +220°C)	100
CC-C4020-31	Molded Polypropylene	SepCap Integral Molded Polypropylene Storage Cap	250
CC-C4020-42A	Magnetic Steel	Clear PTFE/Translucent Blue Silicone (-60 to +200°C)	100



Crimpers, Dicrimpers, and Decapping Pliers for 20 mm Top Vials

Cat.No	Description	Use	Pk
CC-C4020-100	Manual Crimper	Attaches 20 mm aluminium crimp seals	1
CC-C4020-101	Decapping Pliers	Removes 20 mm aluminium crimp seals	1
CC-C4020-102	Manual Decrimper	Removes 20 mm aluminium seals without vial damage	1



A revolution in gas purifying of GC and GC/MS gases

Unique «POINT-OF-USE» and «SEMI IN-LINE» glass/metal, diffusionproof Super-Clean Gas Filters, purify the delicate carrier and burner gases for your GC and GC/MS system for Hydrocarbons, Oxygen (colour indicated) and Moisture (colour indicated) to better-as 6.0 gas (99,9999%) quality, independent of the original gas quality.

Analytical advantages of SGT Super-Clean Gas Filters

- Longer lifetime of analytical columns, avoids bleeding, espec. important for MS and ECD.
- Better sensitivity, decreases baseline noise, eliminates spikes.
- Filter-change during analysis within seconds, system stays online.

Purifier Cartridge Capacity

Type of Purifier	Outlet Gas Quality	Usable for	Indicator Color Change	Capacity		
				H ₂ O(gr)	O ₂	Hydrocarbons
Moisture	> 6.0	Inert carrier gas, air hydrogen	Brown to white	7.2		
Oxygen	> 6.0	Inert carrier gas	Green to grey		1000	
Hydrocarbon	> 6.0	Inert carrier gas, air hydrogen	No indicator			12 (as n-butane)
Combi (moisture/hydrocarbon)	> 6.0	Inert carrier gas, air hydrogen	Brown to white	3.5		6 (as n-butane)
Triple (moisture/oxygen/hydrocarbon)	> 6.0		Brown to white Green to grey	1.8	500	4 (as n-butane)

Spec's on GST Super-Clean Gas Filters

- The specified lifetimes are strongly depending of the quality of the incoming gas.
- Effectivity: <0.1 ppm at a flowrate of 2 liters/minute



One position platform

Quick-Fit System

Benefits of the "quick-fit" system:

- Filter replacement within seconds.
 - **Eliminates GC downtime.**
- Tool-less filter replacement.
 - **Easy handling**
- Diffusion-proof Baseplate (also during filter replacement).
 - **Eliminates analytical disturbance.**
- Baseplates can be wall-mounted.
 - **Convenient positioning**

Different Standard Configurations

GC/MS Carrier Gas Purification System

- Removal of Oxygen, moisture and hydrocarbons for longer column lifetime and cleaner baseline.
- This configuration is excellent for Carrier Gas and ECD, MS applications.

In this configuration, you need to use: 1-position baseplate + 1 Triple Filter

SG-F0301	Triple Filter (O ₂ /Moisture/Hydrocarbons)
SG-B0010	1-position baseplate

GC/MS Carrier Gas Helium Specific Purification System

System for Purifying Helium in GC/MS systems

In this configuration, you need to use: 1-position baseplate + 1 Triple filter gas specific Helium

SG-F0302	Triple Filter; conditioned with Helium (O ₂ /Moisture/Hydrocarbons)
SG-B0010	1-position baseplate

Fuel Gas Purification System used in a FID

Removal of moisture and hydrocarbons in the gases of the FID for a better baseline

In this configuration, you need to use: 2 units of 1-position baseplate + 2 Combi filters (hydrocarbons/moisture)

One combi filter for purifying Air and other combi filter for purifying hydrogen

SG-B0010	1-position baseplate (you need 2 pieces of 1 position base plate)
SG-F0201	Combi Filter -hydrocarbons/moisture, (you need tow Combi Filters)

Carrier Gas Purification and FID Gases

The full solution for your GC/FID system
Purifying all gases used in a FID operated GC

In this configuration, you need to use: 3 units of 1-position baseplate + 1 triple filter (O₂/Moisture/Hydrocarbons) for purifying carrier gas + 2 Combi Filter (Hydrocarbons/Moisture) for purifying gases used in a FID.

SG-B0010	1-position baseplate (you need 3 pieces)
SG-F0301	Triple Filter (O ₂ /Moisture/Hydrocarbons)
SG-F0201	Combi Filter (Noisture/Hydrocarbons) - you need 2 Combi Filters

High Capacity Purifiers for Carrier and FID Gases

Recommended for low quality gases
Purifying all gases used in a FID operated GC
Use Ultra Capacity Moisture and Oxygen filters for Carrier and 2 Ultra Capacity Hydrocarbon Filter one for Air & one for Hydrogen.

In this configuration, you need to use: 4 units of 1-position baseplate + 1 Moisture Filter, Standard, Ultra Capacity + 1 Oxygen Filter, Standard, Ultra Capacity + 2 Hydrocarbons Filter, Standard, Ultra Capacity.

SG-B0010	1-position baseplate (you need 4 pieces)
SG-F0101	Moisture Filter, Standard, Ultra Capacity
SG-F0102	Oxygen Filter, Standard, Ultra Capacity
SG-F0103	Hydrocarbons Filter, Standard, Ultra Capacity, pk/1. (You need 2 filters)

LC-MS Gas Purification System High Flow

Unique 2-Position Super Clean System for purifying the nitrogen gas and zero air utilized in LC/MS instruments.

In this configuration, you need to use: 1 unit of 2-position baseplate + 2 Hydrocarbons purifiers for nitrogen gas + particle filter

SG-B0021-B4	2-position baseplate, 1/4" Brass for 2 High Flow Gas Filters
SG-F0103	Hydrocarbons Filter, Standard, Ultra capacity, pk/1 (you need 2 units)
SG-B0060	0.5 micron Particle Filter 1/4", pk/1

Tk Click-On Inline Super-Clean™ Purifiers®

Original Inline Super -Clean™ Purifier



- High-purity output ensures 99.9999% pure gas
- Click-On fittings for easy, leak-tight cartridge changes; brass or stainless steel, 1/4" or 1/8"
- Helium-Specific Triple Purifier is ideal for GC/MS

The SGT Click-On Inline Super-Clean™ purifiers are the latest in in-line gas filtration. Click-On adaptor connectors allow purifiers to be exchanged without introducing oxygen. Spring-loaded check valves seal when a filter is removed and open only when a new

filter has been locked in place. There is no need for loosening and tightening fittings every time a purifier is changed, and your system will not become contaminated during the process.

The Triple Click-On Purifier is ideal for purifying carrier gas-it contains oxygen, moisture, and hydrocarbon scrubbers in one cartridge.

The Fuel Gas Click-On Purifier is ideal for purifying flame ionization detector (FIC) fuel gases, removing both moisture and hydrocarbons.

The Helium-Specific Triple Click-On Purifier is ideal for purifying helium in GC/MS systems. This Click-On purifier under helium contains oxygen, moisture, and hydrocarbon scrubbers in one cartridge, and is packed and purged.

Click-On purifier replacement depends on the quality of the incoming gas. Use the double connector and install an indicating cartridge after a purifier to indicate when the purifier should be replaced.

Inline Super-Clean™ Specifications

Type	Output Quality	Max Pressure	Max Flow	Used For	Capacity	Estimated Lifetime (years)
Moisture	>6.0 (99.9999%)	160 psi (11 bar)	25 L/min	Inert Carrier, Helium, Air, H2	21 g H2O	>3
Oxygen	>6.0 (99.9999%)	160 psi (11 bar)	25 L/min	Inert Carrier	3000 mL	>3
Hydrocarbon	>6.0 (99.9999%)	160 psi (11 bar)	25 L/min	Inert Carrier, Helium, Air, H2	36 g HCs ³	>3
Fuel Gas ¹	>6.0 (99.9999%)	160 psi (11 bar)	25 L/min	Inert Carrier, Helium, Air, H2	10 g H2O; 18 g HCs ³	>2
Triple2	>6.0 (99.9999%)	160 psi (11 bar)	25 L/min	Inert Carrier	6 g H2O; 12 g HCs ³	>2

¹ Removes hydrocarbons, moisture

² Removes hydrocarbons, moisture, oxygen

³ As n-butane.

Note: Super-Clean™ Gas Filters are recommended for purifying non-corrosive gases with low concentration of contaminants. The maximum concentration of O2 in the incoming gas stream for oxygen purifiers is 0.5%.

Click-On Inline Purifier



Cat.No	Description	pK
SG-C01005	Click-On Inline Triple Trap (Oxygen/Moisture/Hydrocarbons) Cartridge - Stainless Steel	1 unit
SG-C01061	Click-On Inline Indicating Triple He Trap (Oxygen/Moisture/Hydrocarbons) Cartridge - Glass	1 unit
SG-C01041	Click-On Inline Indicating Combi (Oxygen/Moisture) Cartridge - Glass	1 unit
SG-C01001	Click-On Inline Moisture Cartridge - Stainless Steel	1 unit
SG-C01002	Click-On Inline Oxygen Cartridge - Stainless Steel	1 unit
SG-C01003	Click-On Inline Hydrocarbon Cartridge - Stainless Steel	1 unit
SG-C01004	Click-On Inline Combi (Oxygen/Moisture) Cartridge - Stainless Steel	1 unit
SG-C01007	Click-On Inline Combi (Hydrocarbons/Moisture) Cartridge - Stainless Steel	1 unit

Click-On Connectors

Cat.No	Description	pK
SG-C02001	Click-On Connectors 1/4" Brass	2 units
SG-C02002	Click-On Connectors 1/8" Brass	2 units
SG-C02010	Click-On Connectors 1/4" SS	2 units
SG-C02011	Click-On Connectors 1/8" SS	2 units
SG-C02020	Click-On Double Connectors to connect SS Trap with indicating trap	1 unit



SB Base Plates

Cat.No	Description	pK
SG-EF-4002-B4	Base Plate for 1 E-Line Filter 1/4" Brass	1 unit
SG-EF-4002-B8	Base Plate for 1 E-Line Filter 1/8" Brass	1 unit

E-Line Cartridges

Cat.No	Description	pK
SG-EF-1001	Indicating Oxygen Filter SS	1 unit
SG-EF-1002	Indicating Moisture Filter SS	1 unit
SG-EF-1003	Indicating Hydrocarb Filter SS	1 unit
SG-EF-1004	Indicating Triple Filter SS	1 unit
SG-EF-1006	Indicating Combi Filter (Hydrocarbon/Moisture/SS)	1 unit



Capillary Survival Kit™

Save 35% over items bought individually.

Each kit includes:

- Magnifier with built-in light
- Slide-Lok tweezers for holding small items; "spacing" the column proper distances into the injection port, etc.
- 15 cm steel ruler
- 3 column scribes, for cleanly-cut columns
- 2 Universal Unions for joining broken capillary columns
- Single-ended pinvise holds drill bits
- 3 Drill Bits 0.4 mm, 0.5 mm and 0.8 mm
- Multipurpose Septum Pick
- Nylon Brushes 1/8", 3/16" and 1/4" od
- Open-end wrench, 1/4" + 5/16"
- High-temperature string (>400°C) 25 ft.
- Ferrule Remover
- Pipecleaners 5 each 1/8" od and 1/4" od

Cat.No	Description
TR-K-205625	Capillary Survival Kit

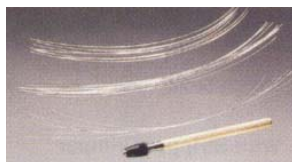
Packed Column Change Kit



This has everything you need for hooking up columns in the GC lab. The Column Change Kit includes three ratchet wrenches, 7/16", 1/2" and 9/16"; one Imp™ Tubing cutter, and one roll of Teflon™ tape, 1/2" x 520". The ratchet wrenches are ideal for tight spaces; the ratchet tips can be opened, then snapped closed around fittings.

Cat.No	Description
TR-K205250	Column Change Kit

Fine Wire Kit



The Fine Wire Kit lets you clean many small items around the lab; also useful for bending into microhooks, other uses. The Kit contains a pin vise, and 30 stainless steel wires, 10 each of the following sizes: 0.006", 0.010" and 0.020".

Cat.No	Description
TR-K205230	Fine Wire Kit

Needle Cleaning Kit



This Kit is specifically designed for cleaning syringes and needles. It includes one bottle of organic, biodegradable cleaning solution, and 10 each of five different diameter

tungsten wires, ranging in diameter from 0.0035" to 0.0121". Suggested cleaning procedures are included. This kit is especially recommended for cleaning Hamilton Syringes.

Cat.No	Description
TR-K76620	Needle Cleaning Kit

FID Cleaning Kit



The Flame Detector Cleaning Kit improves sensibility while reducing noise and spikes. Use it to clean both the jet tip and collector. The FID Cleaning Kit includes everything you'll need: three

jet reamers (0.16", 0.19" and 0.024") with a unique spiral design that can clean without scratching; a mini drill bit (0.0102"), two wire minibrushes, one brass and one stainless steel; and a dual-ended handle for the reamers and brushes.

Cat.No	Description
TR-K205220	FID Cleaning Kit

Injection Port Cleaning Kit

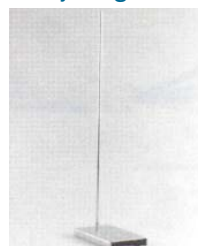


This is designed for cleaning all GC Injection ports, including those in Shimadzu instruments. Included are three stainless steel brushes, 5mm (for

Shimadzu), 1/4" and 3/8", and one scraper for removing septum residue.

Cat.No	Description
TR-K206211	Inj. Port Cleaning Kit

Utility Ring Stand



This nickel-plated ring stand is useful for holding bubble flowmeters, as well as wide variety of standard lab equipment. The support rod is 5/16" od x 20". Clamps are available separately. The plastic-coated jaws hold around glassware from, 3/8" to 1 3/8" in diameter. The small clamp is useful for securing items 3/8" in diameter and less (10 ml and less bubble flowmeters; thermometers). Rotates 360°C. The Ring Stand Clamps are made from zinc-plated steel.

Cat.No	Description
TR-K205570	Utility Ring Stand
TR-K205571	Large Ring Stand Clamp
TR-K205572	Small Ring Stand Clamp

Glass Tubing Cutter



For shortening glass columns or inserts; other applications involving glass tubing. The hardened steel cutting wheel scores tubing as it is turned; cuts tubing up to 1.5".

Cat.No	Description
TR-K205595	Glass Tubing Cutter
TR-K2055969	Spare Cutting Wheels, 5/pk

Stopwatch



This 1/100th second Stopwatch has split/lap and normal time. It displays hours, minutes, seconds, day, date and month. Quartz accuracy. Useful for measuring gas flow with bubble flowmeters. Has alarm feature.

Cat.No	Description
TR-K205200	Stopwatch

Adjustable Wrench



6 inch or 10 inch. The 6" wrench opens to 15/16" for all common Swage-lok connectors. The 10" wrench opens to 15/16" for standard CGA fittings.

Chromomeplated, drop-forged steel.

Cat.No	Description
TR-K205586	Adjustable Wrench 6 inch
TR-K205588	Adjustable Wrench 10 inch

Ratchet Wrench



The jaws of the Ratchet Wrench open, to slip over fittings already in place.

Makes tightening or loosening in cramped areas easy. Three sizes available: 7/16", 1/2" or 9/16"

Cat.No	Description
TR-K205593	Ratchet Wrench 7/16"
TR-K205592	Ratchet Wrench 1/2"
TR-K205591	Ratchet Wrench 9/16"

Goose-neck Flashlight



Illuminates hard-to-reach areas. The Goose-neck flashlight has a flexible neck which can be bent as desired. Includes batteries.

Cat.No	Description
TR-K205628	Goose-neck Flashlight

Jeweler's ScrewDrivers



Six flat-head screwdrivers with convenient swivel-top handles. Blades are from 0.025" to 0.100" in width.

Cat.No	Description
TR-K205676	Jeweler's ScrewDrivers

Allen Wrench Set



Standard or Metric. The standard (USA) Allen wrenches come in a set of 9, from 0.050" to 3/16". The metric Allen wrenches come in a set of 7, from 1.5mm to 6mm.

Cat.No	Description
TR-K205670	Allen Wrench Set Standard
TR-K205671	Allen Wrench Set Metric

Micro Hook



This is a multi-purpose hook used for pulling O-rings, springs, or septum fragments.

Cat.No	Description
TR-K205678	Micro Hook

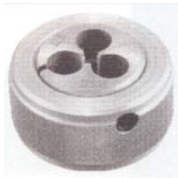
Magnet on a Stick



This is used to pick up small objects such as screws and nuts from instrument cabinets and circuit boards.

Cat.No	Description
TR-K205630	Magnet on a Stick

Threadulator Thread Cutter



Cleans up cross-threaded fittings on columns, etc.; use with welded instrument fittings to avoid expensive replacement. Knurled outer handle for secure gripping; hardless steel cutter. Available in three sizes.

Cat.No	Description
TR-K205638	Threadulator, 1/16"
TR-K205640	Threadulator, 1/8"
TR-K205642	Threadulator, 1/4"

Teflon™ Tape



This is great for leak-proofing fittings; dry-lubricating joints. Do not use over ferrules. Teflon tape comes in rolls of 520 inches, 1/2" wide.

Cat.No	Description
TR-K205117	Teflon Tape

Tk Maintenance Kits & Tools

Capillary/HPLC Wrench Set



This set includes 4 wrenches for use on 1/32", 1/16", or 1/8" nuts. The wrench ends are 3/16", 1/4", 5/16", 3/8" and 7/16".

Cat.No	Description
TR-K205320	Capillary/HPLC Wrench Set

Mirror on a Stick



The Mirror on a Stick lets you peer around corners or tight spaces; also used at the outlet of flame detectors; condensation on the mirror indicates the flame is lit.

Cat.No	Description
TR-K205632	Mirror on a Stick

Open End Wrenches



This set fits most types of fittings. Sizes range from 5/16" to 9/16" in 1/16" increments. Made from

chromeplated steel. 5 wrenches.

Cat.No	Description
TR-K205622	Open End Wrenches



Lighted Magnifier

This is perfect for inspecting capillary end cuts and syringe tips. The 11/4" x 11/4 lens magnifies 4x; small bifocal insert lens measures 8x. Keep one in your desk. Batteries included.

Cat.No	Description
TR-K205648	Lighted Magnifier

Needle-Nose Pliers



These are useful for picking up or clamping small parts. Comes with vinyl grips for sure grip.

Cat.No	Description
TR-K205626	Needle-Nose Pliers

4-in-1 Screwdriver



Comes with two double-ended heads, each with a flat and phillips head. Just flip the end to change the tip.

Cat.No	Description
TR-K205624	4-in-1 Screwdriver

Wire Stripper/Crimper



Useful for cutting or stripping wire, and crimping on connectors. For repairs, maintenance, prototyping.

Cat.No	Description
TR-K205574	Wire Stripper/Crimper