



# Gas Purifiers

Enhanced gas quality for maximum productivity



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## ORDERING INFORMATION

Orders can be placed by post, phone, email or online



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Gas purifiers are an essential part of your GC analysis as contaminants in the carrier gas can significantly impact the quality of your results. Oxygen, hydrocarbons and moisture can lead to problems such as noisy baselines, moisture entering the GC column, excessive bleed and septa degradation. Even if carrier gas is of the highest quality, contaminants can be picked up from every part of the gas line. Therefore, a gas purifier is essential to ensure that maximum productivity is achieved.

## Cartridge Type Gas Purifiers

Trajan Cartridge Purifiers from Greyhound Chromatography make changing your gas filter simplicity itself. The gas purifier system consists of two key parts: the base connecting unit (base plate) and the filters. The base plate has inlet and outlet connectors for the gas lines, and the system can be wall-mounted or fixed to a bench. Base plates come with a 1, 2 or 4 filter capacity and are available for 1/4" or 1/8" gas lines.

The base plate enables the cartridge to be swapped without allowing oxygen to enter the system. Spring-loaded check valves automatically seal tight when the exhausted filter is removed and open again when the new filter is locked into position. No tools are required to replace the filter cartridge, simply turn the locking collar to secure the filter in place and continue with your analysis.

Each gas filter consists of adsorbent packed into a transparent and virtually unbreakable, heavy-walled polycarbonate housing, with a **maximum working pressure of 15 Bar (219 PSI)**

Trajan Cartridge Type Gas Purifiers are designed to provide fast stabilization times to reduce gas consumption, and provide clean gas to GC and GCMS systems.

The design of the Trajan Cartridge Gas Purifiers and base plates means they directly replace alternative brands of cartridge gas purifiers supplied by Agilent, SGT, Supelco and Restek.



Clean gas

Accurate analysis

Easily installed



## Enhanced gas quality for maximum productivity

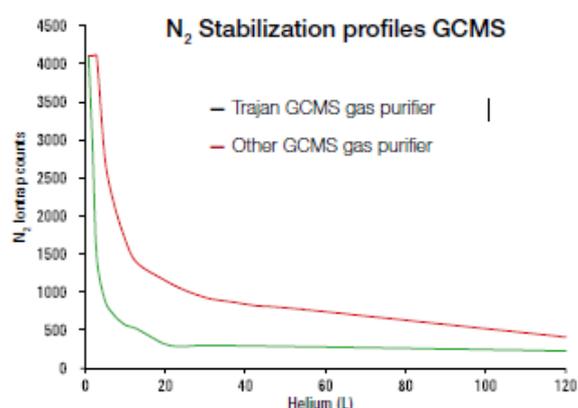


Figure 1 shows the fast stabilization rate (the  $N_2$  mass measured by mass spectrometry) of a GCMS after replacement of the purifier.

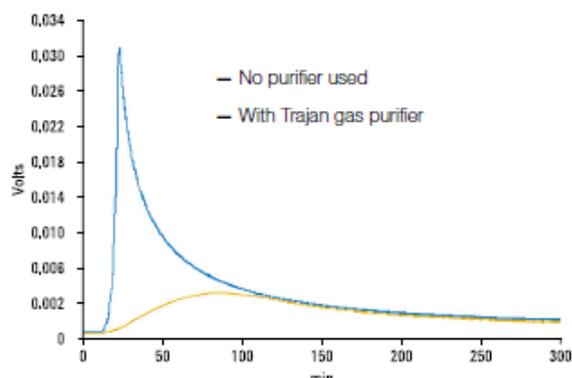


Figure 2 shows the difference in bleed levels of two GC columns due to moisture exposure with and without a purifier when running a temperature program (50°C to 350°C, 20°C/min). When no purifier is used, an extreme rise in the bleed profile is clearly visible due to moisture in the carrier gas. By using gas purifiers, a normal bleed profile is achieved with the removal of all moisture in the carrier gas.

## Gas filter selection guide

Technique	Recommended purifier(s)	Advantages
GCMS	Carrier gas triple filter	High data accuracy, lower maintenance
GC column	Moisture and oxygen	Longer lifetime
Electron capture detectors (GC)	Moisture and oxygen	High sensitivity
Thermal conductivity detectors (GC)	Moisture and oxygen	High sensitivity, lower maintenance
Flame ionization detectors (GC)	Two hydrocarbon	High sensitivity
Photoionization detectors (GC)	Oxygen and hydrocarbon	High sensitivity

## Gas filter technical specifications

	Oxygen Filter	Moisture Filter	Hydrocarbon Filter	Carrier Gas Triple Filter
Function	Removes oxygen as well as traces of sulfur and chlorine compounds from carrier gas	Removes water, oil and other foreign material from carrier gas	Removes organic compounds from gas streams	Single combination purifier; removes water, oxygen and organic compounds
Indicator colour	From green to grey	From green to pale brown	No indicator	<b>Oxygen:</b> from green to grey <b>Moisture:</b> from green to pale brown <b>Hydrocarbons:</b> no indicator
Capacity	150mL oxygen	7.2g water	Approx. 7g depending on impurities	100 mL oxygen 1g water Organics depending on impurities
Outlet concentration at operating flow of 1-10L/min	<50ppb	<0.1ppm	<0.1ppm	Oxygen <50 ppb Moisture <0.1ppm Organics <0.1ppm

## Carrier Gas Triple Filter Kit

Oxygen, hydrocarbons and moisture can lead to problems such as noisy baselines, moisture entering the GC column, excessive bleed and septa degradation. Even if carrier gas is of the highest quality, contaminants can be picked up from every part of the gas line. Therefore, a gas purifier is needed to ensure that maximum productivity is achieved.

The Carrier Gas Triple Filter removes water, oxygen and organic compounds in one convenient filter cartridge and is supplied with a single position base plate, 1/8" or 1/4".

<b>Filter type</b>	<b>Carrier Gas Triple</b>
Part #	TJN-1035158 (One position) 1/8" base plate with filter TJN-1035154 (One position) 1/4" base plate with filter
Function	Removes water, oxygen and organic compounds
Indicator colour change	Oxygen: From green to grey Moisture: From green to pale brown Hydrocarbon: No indicator
Capacity	100mL oxygen, 1g water, organics depending on impurities
Outlet concentration at operating flow of 1-10 L/min	Oxygen: <50ppb Moisture: <0.1ppm Organics <0.1ppm
Use for	Inert gas, Air, AR, He, H2, N2
Replacement for	Agilent Part # CP17976 (1/8"), CP17977 (1/4") Merck / Sigma Part # 28878-U (1/4") Restek Part # 22019 (1/8") SGT Part # SGT-B1010-S8 (1/8"), SGT-B1010-S4 (1/4")



## Carrier Gas Filter Kit

Oxygen, hydrocarbons and moisture can lead to problems such as noisy baselines, moisture entering the GC column, excessive bleed and septa degradation. Even if carrier gas is of the highest quality, contaminants can be picked up from every part of the gas line. Therefore, a gas purifier is essential to ensure that maximum productivity is achieved.

The Carrier Gas Filter Kit efficiently removes oxygen, moisture and hydrocarbons from carrier gases.

The kit consists of 4 gas filters - 2 x hydrocarbon, 1 x oxygen, 1 x moisture - and is supplied complete with a 4 position base plate, 1/8" or 1/4".

<b>Filter type</b>	<b>Carrier Gas Filter Kit</b>
Part #	TJN-1035168 (Four position 1/8") TJN-1035164 (Four position 1/4")
Function	Removes water, oxygen and organic compounds
Indicator colour change	Oxygen: From green to grey Moisture: From green to pale brown Hydrocarbon: No indicator
Capacity	150mL Oxygen, 7.2g Water, approx. 7g Organics depending on impurities
Outlet concentration at operating flow of 1-10 L/min	Oxygen: <50ppb Moisture: <0.1ppm Organics <0.1ppm
Use for	Inert gas, Air, AR, He, H2, N2
Replacement for	Agilent Part # CP736530 (1/8"), CP7995 (1/4") Merck/Sigma Part # SU861043 (1/8") (3 position) Restek Part # 22021 (1/8") (1 position) SGT Part # SGT-B1040-S4 (1/8") SGT-B1040-S4 (1/4")



## Oxygen Filter

The presence of Oxygen, even in minute quantities, can kill your GC column. Even UHP gases can contain oxygen so it is important an oxygen filter is positioned in your gas line just prior to the gas entering the chromatograph.

Filter type	Oxygen
Part #	TJN-1035210
Function	Removes oxygen and traces of sulfur and chlorine compounds
Indicator colour change	From green to grey
Capacity	150 mL oxygen
Outlet concentration at operating flow of 1-10 L/min	<50ppb
Use for	Inert gas, AR, He, H <sub>2</sub> , N <sub>2</sub>
Replacement for	Agilent Part # CP17970 Merck / Sigma Part # SU861022 Restek Part # 22029 SGT Part # SGT-F0102



## Moisture Filter

The presence of moisture in carrier gas will quickly reduce the efficiency of oxygen and hydrocarbon traps and cause an increase in detector noise. It is recommended that a moisture trap is installed before the hydrocarbon and oxygen traps on carrier gas lines

Filter type	Moisture
Part #	TJN-1035220
Function	Removes water, oil and foreign material
Indicator colour change	From green to pale brown
Capacity	7.2g water
Outlet concentration at operating flow of 1-10 L/min	<0.1ppm
Use for	Inert gas, Air, AR, He, H <sub>2</sub> , N <sub>2</sub>
Replacement for	Agilent Part # CP17971 Merck / Sigma Part # SU861021 Restek Part # 22028 SGT Part # SGT-F0101

## Hydrocarbon Filter

The presence of hydrocarbons can cause ghost peaks and rising base lines. It is recommended that a hydrocarbon trap is installed after the moisture trap, to prevent moisture from degrading the hydrocarbon-trapping ability of the activated carbon in the trap.

Filter type	Hydrocarbon
Part #	TJN-1035230
Function	Removes organic compounds
Indicator colour change	No indicator
Capacity	7g depending on impurities
Outlet concentration at operating flow of 1-10 L/min	<0.1ppm
Use for	Inert gas, Air, AR, He, H <sub>2</sub> , N <sub>2</sub>
Replacement for	Agilent Part # CP17972 Merck / Sigma Part # SU861023 Restek Part # 22030 SGT Part # SGT-F0103



## Carrier Gas Triple Filter

Oxygen, hydrocarbons and moisture can lead to problems such as noisy baselines, moisture entering the GC column, excessive bleed and septa degradation. Even if carrier gas is of the highest quality, contaminants can be picked up from every part of the gas line. Therefore, a gas purifier is needed to ensure that maximum productivity is achieved.

The Carrier Gas Triple Filter removes water, oxygen and organic compounds in one convenient filter cartridge.

<b>Filter type</b>	<b>Carrier Gas Triple</b>
Part #	TJN-1035250
Function	Removes water, oxygen and organic compounds
Indicator colour change	Oxygen: From green to grey Moisture: From green to pale brown Hydrocarbon: No indicator
Capacity	100mL oxygen, 1g water, organics depending on Impurities
Outlet concentration at operating flow of 1-10 L/min	Oxygen: <50ppb Moisture: <0.1ppm Organics <0.1ppm
Use for	Inert gas, Air, AR, He, H2, N2
Replacement for	Agilent Part # CP17973 Merck / Sigma Part # SU861026 Restek Part # 22020 SGT Part # SGT-F0301



## Gas Filter Base Units

Base plates fit all cartridge gas purifiers and are available with either 1/8" or 1/4" S/S fittings.

Product	Part #	Replacement for
Gas filter base unit 1/4" S/S (2 position - high flow)	TJN-1035004	Agilent Part # CP17984 SGT Part # SGT-B0021-S4
Gas filter base unit 1/8" S/S (1 position - high flow)	TJN-1035008	Agilent Part # CP17985
Gas filter base unit 1/4" S/S (1 position)	TJN-1035014	Agilent Part # CP7980 SGT Part # SGT-B0010-S4
Gas filter base unit 1/8" S/S (1 position)	TJN-1035018	Agilent Part # CP7988 Merck / Sigma Part # SU861011 Restek Part # 22344 SGT Part # SGT-B0010-S8
Gas filter base unit 1/4" S/S (2 position)	TJN-1035024	Agilent Part # CP738406 SGT Part # SGT-B0020-S4
Gas filter base unit 1/8" S/S (2 position)	TJN-1035028	Agilent Part # CP738407 Merck / Sigma Part # SU861012 Restek Part # 22345 SGT Part # SGT-B0020-S8
Gas filter base unit 1/4" S/S (4 position)	TJN-1035044	Agilent Part # CP7989 SGT Part # SGT-B0040-S4
Gas filter base unit 1/8" S/S (4 position)	TJN-1035048	Agilent Part # CP736520 SGT Part # SGT-B0040-S8



# Big Trap Gas Purifiers

Gas purifiers are an essential part of your GC analysis as contaminants in gases can significantly impact the quality of results. Oxygen, hydrocarbons and moisture can lead to problems such as noisy baselines, moisture entering the GC column, excessive bleed and septa degradation. Even if carrier gas is of the highest quality, contaminants can be picked up from every part of the gas line. Therefore, a gas purifier is needed to ensure that maximum productivity is achieved.

These purifiers are designed for bulk purification applications or where several instruments are plumbed from a single source, a big trap purifier is an ideal solution.

A one-piece heavy walled aluminium tube provides 750cm<sup>3</sup> of capacity and a **maximum working pressure of 17 Bar (250 PSI)**

## Big Trap - Oxygen

The Big Trap Oxygen gas purifier is a 750cm<sup>3</sup> gas purifier designed with a pressure rating up to 250psig, the one-piece, heavy-walled aluminium tube eliminates potential leaks.

### Recommended applications

- ECD (electron capture detectors) and TCD (thermal conductivity detectors) when used with a moisture filter.
- PID (photoionization detectors) when used with a hydrocarbon filter.
- ICP-AES (also referred to as ICP-OES) and ICP-MS when used with a High Flow Connection Unit.

### Features and benefits

- High capacity filters ideal for bulk purification.
- Can be used where several instruments are plumbed from a single gas source.
- Sintered stainless steel frits prevent particulate contamination.



Filter type	Big Trap - Oxygen
Part #	TJN-1035318 (1/8") TJN-1035314 (1/4")
Function	Removes oxygen and traces of sulfur and chlorine compounds from carrier gas
Capacity	3 L
Efficiency	<1 ppb
Use for	Inert gas, AR, He, H2, N2
Replacement for	Agilent Part # BOT-2 (1/8"), BOT-4 (1/4") Restek Part # 20601 (1/8"), 20600 (1/4") SGT Part # SGT-COBT1002-S8 (1/8") SGT-COBT1002-S4 (1/4")

## Big Trap - Moisture

The Big Trap Moisture gas purifier is a 750cm<sup>3</sup> gas purifier designed with a pressure rating up to 250psig, the one-piece, heavy-walled aluminium tube eliminates potential leaks.

### Recommended applications

- ECD (electron capture detectors) and TCD (thermal conductivity detectors) when used with an oxygen filter.
- GC columns when used with an oxygen filter.

### Features and benefits

- High capacity filters ideal for bulk purification.
- Can be used where several instruments are plumbed from a single gas source.
- Sintered stainless steel frits prevent particulate contamination.

Filter type	Big Trap - Moisture
Part #	TJN-1035328 (1/8") TJN-1035324 (1/4")
Function	Removes water, oil and other foreign material from the carrier gas
Capacity	130g
Efficiency	<5 ppb
Replacement for	Agilent Part # BMT-2 (1/8"), BMT-4 (1/4") Merck / Sigma Part # 23991 (1/4") Restek Part # 21997 (1/8"), 20638 (1/4") SGT Part # SGT-COBT1001-S2 (1/8") SGT-COBT1001-S4 (1/4")



## Big Trap - Hydrocarbon

The Big Trap Hydrocarbon gas purifier is a 750cm<sup>3</sup> gas purifier designed with a pressure rating up to 250psig, the one-piece, heavy-walled aluminium tube eliminates potential leaks.

### Recommended applications

- ECD (electron capture detectors) and TCD (thermal conductivity detectors) when used with an oxygen filter.
- GC columns when used with an oxygen filter.

### Features and benefits

- High capacity filters ideal for bulk purification.
- Can be used where several instruments are plumbed from a single gas source.
- Sintered stainless steel frits prevent particulate contamination.

Filter type	Big Trap - Hydrocarbon
Part #	TJN-1035338 (1/8") TJN-1035334 (1/4")
Function	Removes organic compounds from gas streams
Capacity	80g depending on impurities
Efficiency	<15 ppb
Replacement for	Agilent Part # BHT-2 (1/8"), BHT-4 (1/4") Merck / Sigma Part # 24564 (1/4") SGT Part # SGT-COBT1003-S8 (1/8") SGT-COBT1003-S4 (1/4")



## Big Trap - Universal (Oxygen, Moisture, Hydrocarbon)

The Big Trap Universal gas purifier is a 750cm<sup>3</sup> gas purifier designed with a pressure rating up to 250psig, the one-piece, heavy-walled aluminium tube eliminates potential leaks.

### Recommended applications

- GC and GCMS applications where helium is employed
- Suitable for use with Helium, Hydrogen and Nitrogen gas

### Features and benefits

- High capacity filters ideal for bulk purification.
- Can be used where several instruments are plumbed from a single gas source.
- Sintered stainless steel frits prevent particulate contamination.

Filter type	Big Trap - Universal
Part #	TJN-1035348 (1/8") TJN-1035344 (1/4")
Function	Removes oxygen, moisture, hydrocarbons, carbon dioxide and carbon monoxide from helium gas streams
Capacity	A cumulative level of 100 µg/L of oxygen, moisture, hydrocarbons, carbon dioxide and carbon monoxide at a flow rate of 8 L/min
Efficiency	<100 ppb
Replacement for	Agilent Part # RMSH-2 (1/8"), RMSH-4 (1/4") SGT Part # SGT-COBT1005-S8 (1/8") SGT-COBT1005-S4 (1/4")



## Big Trap - Mounting Clips

The Big Trap Mounting Clips are designed to fit comfortably around the Big Traps to facilitate mounting onto a wall or surface of the work bench. pk/2

Product	Big Trap Mounting Clips
Part #	TJN-1035300
Function	For securing Big Traps to wall or bench
Replacement for	Agilent Part # UMC-5-2 SGT Part # CO3003



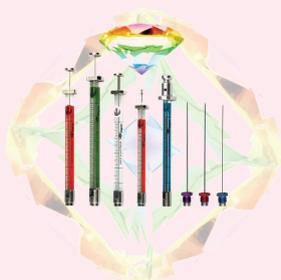
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## Other Trajan / SGE Products available from Greyhound Chromatography



### GC Capillary Columns

The comprehensive range of GC capillary columns from SGE covers almost every chromatographic application, providing the best possible combination of Performance, Robustness, Reproducibility, Low Bleed and Inertness. Advanced technology ensures brilliant results every time.



### Syringes

SGE offers a complete choice in syringes with a range of capacities, termination types and numerous needle sizes for a wide range of applications.



### GC Liners

SGE Inlet Liners are colour coded by geometry to simplify your selection. You can be confident of your analytical results as the certified deactivation process ensures these liners are highly inert and the leading brand on the market today.



### Fittings & Tubing

The extensive variety of tubing and fittings from SGE means you don't have to worry about connecting up your equipment. With the range of S/S unions, finger-tight fittings, in-line filters, injection loops, column couplers, SilTite fittings and Fused Silica, S/S, PEEK, and GLT tubing, Greyhound Chromatography has all the SGE products you need.

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