

GC ACCESSORIES GAS PURIFICATION ESSENTIALS

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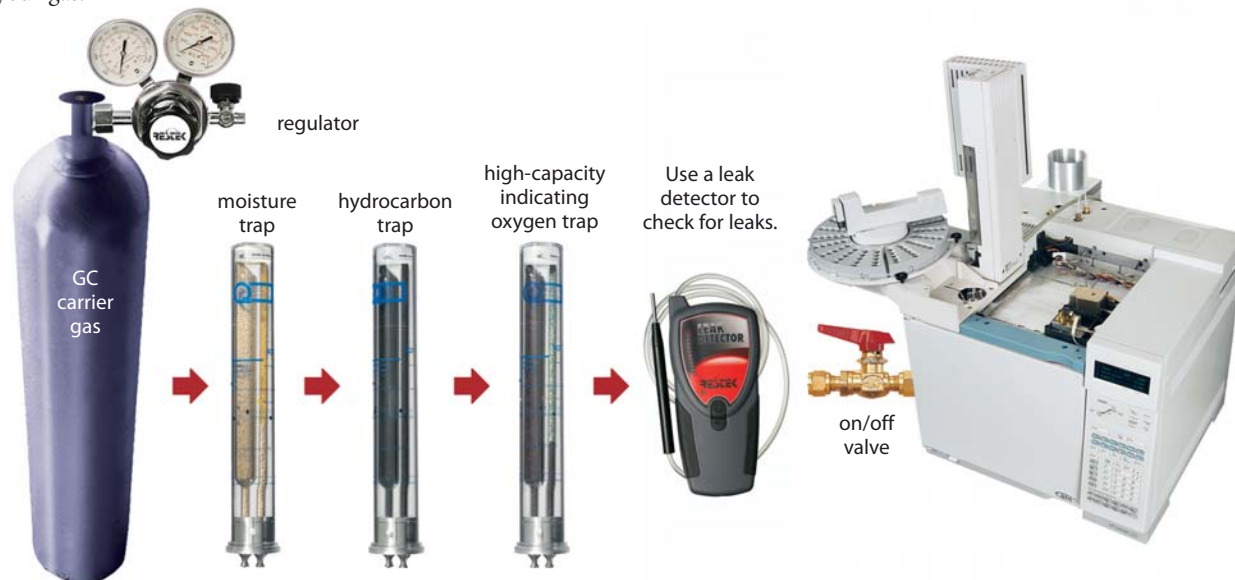
Top: Deb Weaver, Shipping Technician
Bottom: Joe Eckley, Supplier Quality Technician



Restek provides the following total gas system solution:

- Restek gas purifiers provide cost-effective gas purity assurance.
- Restek stainless steel and copper tubing, precleaned and ready to use.
- Swagelok® and Parker A-Lok® tube fittings consistently deliver high-quality performance.
- Extensive line of hand tools to make your work easier and faster, including Restek's Electronic Leak Detector.
- Gas generators for an uninterrupted supply of gas.
- Gas regulators for optimum line pressure control of all your chromatography gases.

Restek's Technical Service Team, 800-356-1688 or 814-353-1300, ext. 4, or your Restek representative, can answer your questions and provide system-design advice. From the gas source to your point of use, we offer the products and services that ensure the purity of your gas.



Why do I need to use traps and where should I install them?

Carrier gas must contain less than 1ppm of oxygen, water vapor, or any other trace contaminant, to prevent column degradation, shortened column lifetime, and increased stationary phase bleed. Contaminants cause ghost peaks to appear during temperature programming and degrade the validity of analytical data. The expense of using high-purity gases in combination with carrier gas purifiers will be offset by longer column lifetime and less instrument maintenance.

Moisture Removal

Moisture in carrier gas lines will prematurely degrade oxygen and hydrocarbon traps and increase detector noise (particularly with ECDs). As a precaution, we highly recommend installing a moisture trap before the hydrocarbon and oxygen traps on all carrier gas lines. Our favorite trap is the Super-Clean Ultra-High Capacity Moisture Filter (cat.# 22028, pg. 225).

Hydrocarbon Removal

Use a hydrocarbon trap if your gas has a potential source of hydrocarbon contaminants (e.g., an oil pump in an air compressor) or if you suspect you are observing carrier gas ghost peaks. Install the hydrocarbon trap after the moisture trap, to prevent moisture from degrading the hydrocarbon-trapping ability of the activated carbon in the hydrocarbon trap. We recommend the Super-Clean Ultra-High Capacity Hydrocarbon Filter (cat.# 22030, pg. 225).

Oxygen Removal

Oxygen is a column killer and can enter the system at any connection which is leaking. It is present even in ultra high purity gases, as minute leaks at fittings allow oxygen to influx against the concentration gradient. There are many choices for oxygen removal—the Super-Clean Ultra-High Capacity Oxygen Filter (cat.# 22029, pg. 225) is popular with Restek chemists. Because oxygen can enter a gas line at any fitting, the oxygen trap should be the last connection before the gas line enters the chromatograph.

Leak Checking

To prevent column degradation, increase column lifetime, and decrease stationary phase bleed, carrier gas should always contain <1ppm oxygen. This can be monitored by continually leak checking all gas system connections using Restek's Electronic Leak Detector (cat.# 22839, page 222).

for **more info**

Questions about which carrier gas purifier to use?

Call 800-356-1688 or 814-353-1300, ext. 4, or contact your Restek representative to discuss your application with our technical service chemists.

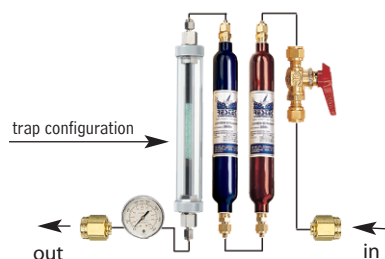
Restek Gas Management System

Restek has put together a convenient unit providing gas purification all in one step. Complete with an indicating trap, your gas purification issues are handled in one central location.

- Removes moisture, hydrocarbons, and oxygen from carrier gas, extending column lifetime.
- Produces high-purity carrier gas for most applications.
- Includes one each: moisture, hydrocarbon, and indicating oxygen trap.
- Replacing traps is safe and easy.
- Maximum flow: 1 liter/minute.



Dimensions:
12" x 14" x 3"
(30.5 x 35.6 x 7.6 cm)

**did you know?**

The Restek Gas Management System removes water vapor (to 10ppb), hydrocarbons (to 0.1ppm), and oxygen (to less than 0.1ppm) with three traps housed in one unit.

Description	qty.	cat.#	price
Restek Gas Management System (includes fittings for 1/8" and 1/4" gas line)	ea.	21999	
Replacement Traps	qty.	cat.#	price
High-Capacity Moisture Trap, 1/8" Nickel-Plated Brass Fittings	ea.	21997	
Capillary-Grade Hydrocarbon Trap, 1/8" Nickel-Plated Brass Fittings	ea.	21991	
Indicating Oxygen Trap, 1/8" Nickel-Plated Brass Fittings	ea.	22010	

**Restek Electronic Leak Detector**

Why have a small leak turn into a costly repair? Protect your data and analytical column by using a Restek Leak Detector.

Backed by a 1-year warranty, the new Restek Leak Detector sets an industry standard for performance and affordability in hand-held leak detectors.

Leak Detector Facts

Detectable gases:	helium, nitrogen, argon, carbon dioxide, hydrogen
Battery:	Rechargeable Ni-MH internal battery pack (6 hours normal operation)
Operating Temperature Range:	32°-120°F (0°-48°C)
Humidity Range:	0-97%
Warranty:	one year
Certifications:	CE, Japan
Compliance:	WEEE, RoHS

Limits of Detection

These gases can be detected with the Restek Electronic Leak Detector at the following leak rates.

Gas	Minimum Detectable Leak Rate (atm cc/sec.)	Indicating LED Light Color
Helium	1.0 X 10 ⁻⁵	Red
Hydrogen*	1.0 X 10 ⁻⁵	Red
Nitrogen	1.4 X 10 ⁻³	Yellow
Argon	1.0 X 10 ⁻⁴	Yellow
Carbon Dioxide	1.0 X 10 ⁻⁴	Yellow

Description	qty.	cat.#	price
Leak Detector with Universal Charger Set (US, UK, European, Australian)	ea.	22839	
Soft-Side Carry/Storage Case	ea.	22657	
Small Probe Adaptor	ea.	22658	

*Caution: The Restek Electronic Leak Detector is designed to detect trace amounts of hydrogen in a noncombustible environment. It is NOT designed for determining leaks in a combustible environment. A combustible gas detector should be used for determining combustible gas leaks under any condition. The Restek Electronic Leak Detector may be used for determining trace amounts of hydrogen in a GC environment only.



22839

CE



22658



Avoid using liquid leak detectors on a GC! Liquids can be drawn into the system.



Dimensions: 9¹/₄" x 2" (23.5 x 5.1 cm)



22081

High-Capacity Indicating Oxygen Trap

- Indicator changes from dark blue to black as oxygen & water are trapped.
- Lasts longer than three smaller traps.
- Use with all carrier gases.
- Ambient operating temperature, 100psi (689kPa) operating pressure.
- Built-in frit traps microparticles.
- Outlet gas purity:
 - $O_2 < 0.1\text{ppm}$ when inlet does not exceed 15ppm.
 - $H_2O < 0.5\text{ppm}$ when inlet does not exceed 10ppm.
- Maximum operating pressure: 150psi (1,034kPa).
- Maximum flow: 16.5L/min.

Description	qty.	cat.#	price
High-Capacity Indicating Oxygen Trap, 1/8" Compression Tube Brass Fittings	ea.	20624	
High-Capacity Indicating Oxygen Trap, 1/4" Compression Tube Brass Fittings	ea.	20623	
Replacement Cartridge (fits 1/4" or 1/8" housing) Replacement O-Rings (5 small O-rings and 5 large O-rings)	ea. kit	20625 22081	



Dimensions: 10" x 1¹/₄" (25.4 x 3.2 cm)

Indicating Oxygen Trap

- Indicator changes from light green to grey as oxygen is trapped.
- Heavy-walled glass body prevents oxygen & water infusion.
- Prepurged for fast stabilization.
- 100psi (689kPa) maximum operating pressure.
- Reduces oxygen to 0.1ppm.

Description	qty.	cat.#	price
Indicating Oxygen Trap, 1/8" Nickel-Plated Brass Fittings	ea.	22010	
Indicating Oxygen Trap, 1/4" Nickel-Plated Brass Fittings	ea.	22011	



Dimensions: 11" x 1¹/₂" (27.9 x 3.8 cm)

High-Capacity Oxygen Trap

- Removes up to 600mg of oxygen or 2g of water.
- Long life—typically purifies more than five 200ft³ cylinders.
- Reduces oxygen to 15ppb.
- Maximum operating pressure: 250psi (1,724kPa).
- Flow: 3L/min. @ 32psi (221kPa).

Description	qty.	cat.#	price
High-Capacity Oxygen Trap, 1/2" Nickel-Plated Brass Fittings	ea.	20601	
High-Capacity Oxygen Trap, 1/4" Nickel-Plated Brass Fittings	ea.	20600	

Rechargeable Molecular Sieve S-Trap

- Traps water vapor; increases column and oxygen trap lifetime.
- Reduces baseline noise from sensitive detectors such as ECDs and mass spectrometers.
- Activated and ready to use.
- Reduces water to less than 1ppm.
- Fits in GC oven for easy thermal recharging.
- Maximum flow: 1L/min.



Dimensions: 6³/₄" x 5⁵/₈"
(17.1 x 14.3 cm)

Description	qty.	cat.#	price
Rechargeable Molecular Sieve S-Trap, 1/8" Brass Fittings	ea.	20686	
Rechargeable Molecular Sieve S-Trap, 1/4" Brass Fittings	ea.	20685	



Dimensions: 11" x 1¹/₂" (27.9 x 3.8 cm)

High-Capacity Moisture Trap

- Purged with ultra-high-purity helium; ready to use.
- Reduces water to less than 15ppb.
- Maximum operating pressure: 250psi (1,724kPa).
- Maximum flow: 1.25L/min.

Description	qty.	cat.#	price
High-Capacity Moisture Trap, 1/8" Nickel-Plated Brass Fittings	ea.	21997	
High-Capacity Moisture Trap, 1/4" Nickel-Plated Brass Fittings	ea.	20638	



Dimensions: 13" x 2" (33 x 5.1 cm)

Indicating Moisture Trap

- Reduces water to less than 10ppb; indicator changes from blue to pink at 5% relative humidity.
- Prepurged for fast stabilization.
- Reduces noise from high-sensitivity detectors.
- Heavy-walled glass body prevents oxygen & water infusion.
- 40µm frit prevents microparticulate damage to needle valves and flow controllers.
- Maximum operating pressure: 100psi (689kPa).

Description	qty.	cat.#	price
Indicating Moisture Trap, 1/8" Nickel-Plated Brass Fittings	ea.	22014	
Indicating Moisture Trap, 1/4" Nickel-Plated Brass Fittings	ea.	22015	

Gas Traps



Dimensions: 11" x 1 1/2" (27.9 x 3.8 cm)

Capillary-Grade Hydrocarbon Trap

- Packed with an extremely high surface area, baked coconut shell-based activated carbon.
- Purged with ultra-high purity helium.
- Reduces organics to 0.1ppm (assuming 100ppm input).
- Maximum operating pressure: 250psi (1,724kPa).

Description	qty.	cat.#	price
Capillary-Grade Hydrocarbon Trap, 1/8" Nickel-Plated Brass Fittings	ea.	21991	
Capillary-Grade Hydrocarbon Trap, 1/4" Nickel-Plated Brass Fittings	ea.	21992	



Dimensions: 9 1/4" x 2 1/4" (23.5 x 5.7 cm)

Refillable Hydrocarbon Trap

- Removes trace impurities from carrier gas.
- Reduces organics to 0.1ppm (assuming 100ppm input).
- 60µm frit prevents gas contamination by purifier particles.
- Good for purge & trap systems.
- Refillable and rechargeable.
- Maximum operating pressure: 125psig (862kPa).
- Maximum flow: 5L/min.

Description	qty.	cat.#	price
Refillable Hydrocarbon Trap, 1/8" Nickel-Plated Brass Fittings	ea.	22012	
Refillable Hydrocarbon Trap, 1/4" Nickel-Plated Brass Fittings	ea.	22013	
Carbon Refill (two recharges)	pint	20626	

Hydrocarbon S-Trap

- Removes hydrocarbons and other contaminants.
- Reduces organics to 0.1ppm (assuming 100ppm input).
- Each individually activated to ensure maximum efficiency.
- Fits in GC oven for easy thermal recharging.
- Maximum operating pressure: 60psi (414kPa).



Dimensions: 6 3/4" x 5 5/8" (17.1 x 14.3 cm)

Description	qty.	cat.#	price
Hydrocarbon S-Trap, 1/8" Brass Fittings	ea.	22016	



Dimensions: 6" x 1 3/4" (15.2 x 4.4 cm)

Indicating Hydrocarbon Trap for Air Compressors

- Pass compressed air from an oil-filled air compressor through this trap, to remove oil vapors and mist.
- Indicator changes from pale pink to deep pink.

Description	qty.	cat.#	price
Indicating Hydrocarbon Trap for Air Compressors, 1/8" Brass Fittings	ea.	20637	
Indicating Hydrocarbon Trap for Air Compressors, 1/4" Brass Fittings	ea.	20636	



Dimensions: 6" x 1" (15.2 x 2.5 cm)

High-Capacity Split Vent Trap

- Reduces the release of hazardous materials from the capillary split vent into the lab.
- Lasts approximately one month or 1,500 injections.
- Includes connecting lines and mounting kit.

Description	qty.	cat.#	price
High-Capacity Split Vent Trap, 1/8" Fittings	ea.	20698	
High-Capacity Split Vent Trap, 1/8" Fittings	5-pk.	20699	



Dimensions: 6" x 1" (15.2 x 2.5 cm)

ECD Vent Trap

- Reduces the release of hazardous materials from the ECD vent into the lab.
- Includes connecting lines and mounting kit.

Description	qty.	cat.#	price
ECD Vent Trap, 1/8" Fittings	ea.	22017	



Carrier Gas Purity

Carrier gas should contain less than 1ppm of oxygen, moisture, or other trace contaminants, to prevent column degradation, increase column lifetime, and decrease stationary phase bleed.

The expense of using high-purity gases in combination with carrier gas line purifiers will be offset by longer column lifetime and less GC maintenance.

Restek Super-Clean Gas Filters

- High-purity output ensures 99.9999% pure gas (at max. flow of 2L/min.).
- “Quick connect” fittings for easy, leak-tight cartridge changes.
- Glass inside to prevent diffusion; polycarbonate housing outside for safety.
- All traps measure 10⁵/₈" x 1³/₄" (27 x 4.4 cm).
- Each base plate unit measures 4" x 4" x 1⁷/₈" (10.2 x 10.2 x 4.8 cm).

Table I Each Super-Clean gas filter provides high-purity outlet gas.

Type of Filter	Outlet Gas Quality (%)	Maximum Pressure/ Maximum Flow Rates	Use for:	Indicator Color Change	Capacity			Estimated Lifetime (years)
					H ₂ O (g)	O ₂ (mL)	Hydrocarbons (g)	
Moisture cat.# 22028	>99.9999	11 bar 159psi/ 7 L/min.	Inert carrier gas Air Hydrogen	Yellow/orange to clear	7.2	—	—	>2
Oxygen cat.# 22029	>99.9999	11 bar 159psi/ 7 L/min.	Inert carrier gas	Green to grey	NA	1,000	—	>2
Hydrocarbons cat.# 22030	>99.9999	11 bar 159psi/ 7L/min.	Inert carrier gas Air Hydrogen	No indicator	NA	—	12 ¹	>2
Fuel Gas ¹ cat.# 22022	>99.9999	11 bar 159psi/ 7L/min.	Inert carrier gas Air Hydrogen	Yellow/orange to clear	3.5	—	24 ³	>1.5
Triple ² cat.# 22020	>99.9999	11 bar 159psi/ 7L/min.	Inert carrier gas	Yellow/orange to clear Green to grey	1.8	500	4 ³	>1
Helium Specific ² cat.# 21982	>99.9999	11 bar 159psi/ 7L/min.	Helium	Yellow/orange to clear Green to grey	1.8	500	—	>1

¹Removes hydrocarbons, moisture.

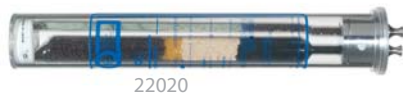
²Removes hydrocarbons, moisture, oxygen.

³As *n*-butane.



did you know?

All Restek Super-Clean gas filter cartridges (except hydrocarbon filter cat.# 22030) feature easy-to-read indicators. The indicator code is shown on every trap so there is no confusion about when to replace it.



Restek Super-Clean Gas Filter Kits and Replacements

Description	qty.	cat.#	price
Carrier Gas Cleaning Kit (includes mounting base plate, 1/8" inlet/outlet fittings, and oxygen/moisture/hydrocarbon Triple Gas Filter)	kit	22019	
Fuel Gas Purification Kit (includes mounting base plate, 1/8" inlet/outlet fittings, and hydrocarbon/moisture Fuel Gas Filter)	kit	22021	enquire
Ultra-High Capacity Hydrocarbon Filter	ea.	22030	
Ultra-High Capacity Moisture Filter	ea.	22028	
Ultra-High Capacity Oxygen Filter	ea.	22029	
Replacement Triple Gas Filter (removes oxygen, moisture and hydrocarbons)	ea.	22020	
Replacement Fuel Gas Filter (removes moisture and hydrocarbons)	ea.	22022	
Helium-Specific Carrier Gas Cleaning Kit (includes mounting base plate, 1/8" inlet/outlet fittings, and oxygen/moisture/hydrocarbon Helium-Specific Filter)	kit	21983	
Replacement Helium-Specific Gas Filter (removes oxygen, moisture and hydrocarbons)	ea.	21982	
Gas Filter Bundle Kit (includes one Triple Gas Filter, cat.#22020 and two Fuel Gas Filters, cat.# 22022)	kit	22031	



tech tip

Oxygen and Moisture Traps

Restek highly recommends oxygen and moisture traps for make-up gas when operating sensitive detectors such as electron capture detectors (ECD). The hydrogen reaction gas for sensitive electrolytic conductivity detectors (ELCD) also requires a hydrocarbon trap, to remove trace impurities.

Super-Clean Gas Filters



Restek Filter Base Plates

- Standard base plate fittings are 1/8". To adapt to 1/4", order 1/8" to 1/4" tube-end unions.
- Base plates fit all Super-Clean gas filters listed on previous page.

Description	qty.	Brass		Stainless Steel		
		cat.#	price	qty.	cat.#	price
Single-Position Filter Base Plate	ea.	22025		ea.	22344	
2-Position Filter Base Plate	ea.	22026		ea.	22345	
3-Position Filter Base Plate	ea.	22027		ea.	22346	

Wall Mounting Bracket

- Base plates can be mounted by using screws and the mounting holes on the base plate, or by using this optional wall mounting bracket.



Description	qty.	cat.#	price
Wall Mounting Bracket for Super-Clean Base Plates	ea.	21984	

Replacement O-Rings for Cartridge Base Plates

- Pack includes 10 large O-rings and 10 small O-rings.



Description	qty.	cat.#	price
Replacement O-Rings for Cartridge Base Plates	20-pk.	22023	

1/8-Inch to 1/4-Inch Tube-End Unions

- To adapt 1/8" Super-Clean base plate fittings to 1/4", use 1/8" to 1/4" tube-end unions.



Description	qty.	Brass		Stainless Steel		
		cat.#	price	qty.	cat.#	price
1/8" to 1/4" Tube-End Unions	5-pk.	21833		2-pk.	21933	

Restek Super-Clean Gas Trapping System for LC/MS

A Super-Clean quick-change cartridge system efficiently removes hydrocarbons from nitrogen!

- Changing filters is quick and easy.
- Up to 20L of hydrocarbon-free nitrogen per minute.
- Filters connected in parallel to handle high flows of LC/MS.



20L of purified nitrogen per minute!

Super-Clean Gas Filters provide high-purity outlet gas

Type of filter:	Hydrocarbon (charcoal)
Max. Flow:	20L/min.
Outlet Gas Quality %:	99.9999%
Maximum Pressure:	11 bar/159psi
Estimated Lifetime:	3 to 6 months

Super-Clean Gas Trapping System for LC/MS

Description	qty.	cat.#	price
Super-Clean Gas-Trapping System (2-position base plate, 2 charcoal filters)	ea.	22062	
Replacement Hydrocarbon (Charcoal) Filters	2-pk.	22061	

also available

Looking for a nitrogen generator for your LC/MS? Restek offers a full line of Parker LC/MS generators. See page 233.



Catch the Buzz

Sign up for Restek's e-newsletter, *The Buzz*
www.restek.com/buzz

Restek Click-On Inline Super-Clean Purification Gas Traps

- 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 Gas Trap is ideal for GC/MS—it contains oxygen, moisture, and hydrocarbon scrubbers in one cartridge.
- Triple Gas Trap is ideal for purifying carrier gas—it contains oxygen, moisture, and hydrocarbon scrubbers in one cartridge.
- Fuel Gas Trap is ideal for purifying flame ionization detector (FID) fuel gases, removing both moisture and hydrocarbons.

Click-On adaptor connectors allow cartridges to be exchanged without introducing oxygen, moisture, and hydrocarbons. Spring-loaded check valves seal when a filter is removed and open only when a new filter has been locked in place.

Filter Type	Gas Quality at Outlet	Maximum Pressure	Maximum Flow (L/min.)	Use For	H ₂ O (g)	Capacity O ₂ (mL)	Hydrocarbons (g) (<i>n</i> -butane)	Estimated Lifetime (years)
Moisture cat.#22467	>99.9999	11 bar 160psi	25	Inert carrier gas, helium, air, H ₂	15	NA	NA	>3
Oxygen cat.#22468	>99.9999	11 bar 160psi	25	Inert carrier gas	NA	2,000	NA	>3
Hydrocarbon cat.#22466	>99.9999	11 bar 160psi	25	Inert carrier gas, helium, air, H ₂	NA	NA	24	>3
Fuel Gas ¹ cat.#22465	>99.9999	11 bar 160psi	25	Inert carrier gas, helium, air, H ₂	7	NA	12	>2
Triple ² cat.#22464	>99.9999	11 bar 160psi	25	Inert carrier gas	4	1,000	8	>2

¹Removes hydrocarbons, moisture.

²Removes hydrocarbons, moisture, oxygen.

NOTE: Super-Clean Gas Filters are recommended for purifying noncorrosive gases with low concentrations of contaminants. The maximum concentration of oxygen in the incoming gas stream for oxygen purifiers is 0.5%.

See next page for more Click-On Inline Super-Clean products.

Click-On Traps measure:
8 1/2" x 1 1/4" (21.6 x 3.2cm)



did you know?

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

Restek Click-On Inline Super-Clean Gas Traps and Connector Kits

Description	qty.	cat.#	price
Carrier Gas Purification Kit, 1/8" Stainless Steel Includes (2) 1/8" SS connectors and (1) oxygen/moisture/hydrocarbon triple trap	kit	22456	
Carrier Gas Purification Kit, 1/8" Brass Includes (2) 1/8" brass connectors and (1) oxygen/moisture/hydrocarbon triple trap	kit	22457	
Carrier Gas Purification Kit, 1/4" Stainless Steel Includes (2) 1/4" SS connectors and (1) oxygen/moisture/hydrocarbon triple trap	kit	22458	
Carrier Gas Purification Kit, 1/4" Brass Includes (2) 1/4" brass connectors and (1) oxygen/moisture/hydrocarbon triple trap	kit	22459	
Fuel Gas Purification Kit, 1/8" Stainless Steel Includes (4) 1/8" SS connectors and (2) hydrocarbon/moisture traps	kit	22460	
Fuel Gas Purification Kit, 1/8" Brass Includes (4) 1/8" brass connectors and (2) hydrocarbon/moisture traps	kit	22461	
Fuel Gas Purification Kit, 1/4" Stainless Steel Includes (4) 1/4" SS connectors and (2) hydrocarbon/moisture traps	kit	22462	
Fuel Gas Purification Kit, 1/4" Brass Includes (4) 1/4" brass connectors and (2) hydrocarbon/moisture traps	kit	22463	



Super-Clean Gas Filters



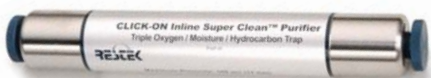
Click-On Inline Super-Clean Indicator

- Oxygen: Green to Grey
- Moisture: Beige to Clear

Description	qty.	cat.#	price
Click-On Inline Super-Clean Indicator (oxygen, moisture)	ea.	22474	

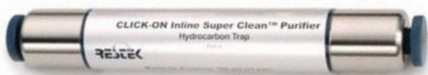
i tech tip

Install an indicator after the Click-On inline gas filter so there is no confusion about when to replace the traps.



Click-On Inline Super-Clean Replacement Gas Traps

Description	qty.	cat.#	price
Click-On Super-Clean Replacement Triple Trap (removes oxygen, moisture and hydrocarbons)	ea.	22464	
Click-On Super-Clean Replacement Fuel Gas Trap (removes moisture and hydrocarbons)	ea.	22465	

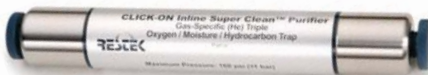


Click-On Inline Super-Clean Ultra-High Capacity Gas Traps

Description	qty.	cat.#	price
Ultra-High Capacity Hydrocarbon Trap	ea.	22466	
Ultra-High Capacity Moisture Trap	ea.	22467	
Ultra-High Capacity Oxygen Trap	ea.	22468	

did you know?

Helium-Specific Click-On Inline Super-Clean Gas Trap and Kits are designed specifically for purification of helium in GC/MS systems.



Helium-Specific Click-On Inline Super-Clean Gas Trap and Connector Kits

Description	qty.	cat.#	price
Kits			
Helium-Specific Carrier Gas Cleaning Kit, 1/8" Stainless Steel Includes (2) 1/8" SS connectors and (1) oxygen/moisture/hydrocarbon helium-specific triple trap	kit	22469	
Helium-Specific Carrier Gas Cleaning Kit, 1/8" Brass Includes (2) 1/8" brass connectors and (1) oxygen/moisture/hydrocarbon helium-specific triple trap	kit	22470	
Helium-Specific Carrier Gas Cleaning Kit, 1/4" Stainless Steel Includes (2) 1/4" SS connectors and (1) oxygen/moisture/hydrocarbon helium-specific triple trap	kit	22471	
Helium-Specific Carrier Gas Cleaning Kit, 1/4" Brass Includes (2) 1/4" brass connectors and (1) oxygen/moisture/hydrocarbon helium-specific triple trap	kit	22472	
Replacement Trap			
Helium-Specific Replacement Triple Trap (removes oxygen, moisture and hydrocarbons)	ea.	22473	



Each connector is 2 3/8" (6cm) in length.

Click-On Inline Super-Clean Connectors

- Click-On connectors allow you to change traps quickly, without introducing oxygen into your system.

Description	qty.	cat.#	price
1/8" Brass Click-On Inline Super-Clean Connectors	2-pk.	22475	
1/8" Stainless Steel Click-On Inline Super-Clean Connectors	2-pk.	22476	
1/4" Brass Click-On Inline Super-Clean Connectors	2-pk.	22477	
1/4" Stainless Steel Click-On Inline Super-Clean Connectors	2-pk.	22478	



Each double connector is 3" (8cm) in length.

Click-On Inline Super-Clean Double Connector

- Connects any Click-On trap to a Click-On indicator.

Description	qty.	cat.#	price
Click-On Inline Super-Clean Double Connector, Stainless Steel	ea.	22479	



Accessories for Inline Super-Clean Gas Traps and Connectors

Description	qty.	cat.#	price
Wall-Mounting Clamps for Click-On Inline Super-Clean Gas Traps	4-pk.	22480	
Replacement O-Rings for Click-On Inline Super-Clean Connectors (includes 10 large and 10 small)	20-pk.	22481	

VICI® Mat/Sen® Gas-Specific Purifier Modules

- Replace separate oxygen, moisture, and hydrocarbon traps with one multiple-bed purifier, specific for purifying helium, hydrogen, nitrogen, or air.
- Reduce gas impurities from ppm to low ppb levels.
- Decrease baseline noise and increase GC/MS sensitivity.
- Prepurged with the specified gas, to shorten downtime.

Performance for these purifiers is optimized by incorporating a multiple-bed format that progressively lowers concentrations of contaminants at each successive bed. VICI® Mat/Sen® purifiers are guaranteed to produce gases that are purer than 99.9999%, when supplied with gas of 99.995% purity, and are prepurged with the specified gas to speed conditioning. Purifier capacity is approximately four tanks of gas at 99.995% (50ppm) purity, and correspondingly longer for purer gases.



Dimensions: 21" x 1 1/2"
(53.3 x 3.8 cm)

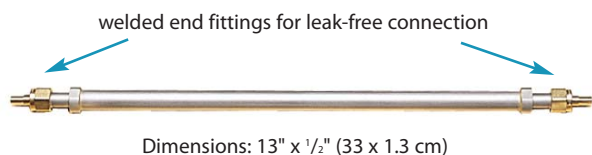
Please Note: We recommend using an indicating oxygen trap (e.g., cat.# 22029, pg. 225) downstream from a VICI® Mat/Sen® purifier to continually ensure gas purity and indicate absolute change-out time.

Specifications:

Length	21" (52.3cm)
Diameter	1.5" (3.8cm)
Maximum Inlet Pressure	1,000psi (6895kPa)
Maximum Recommended Flow	500mL/min.
Pressure Drop from 120psi (827 kPa) inlet at at 0-500mL/min.:	<0.20psi (1.4kPa)
End Fittings	compression, 1/8" or 1/4", stainless steel
Shipping Weight	3.04 lb. (1,300 g)

Gas-Specific Purifier Module	Compression Tube Fittings					
	1/4-inch			1/8-inch		
	qty.	cat.#	price	qty.	cat.#	price
Helium Purifier Module	ea.	22600		ea.	22601	
Hydrogen Purifier Module	ea.	22602		ea.	22603	
Nitrogen Purifier Module*	ea.	22604		ea.	22605	
Air Purifier Module	ea.	22606		ea.	22607	

*Warning: Do not use with nitrogen containing more than 500ppm of oxygen. If the oxygen level in the stream exceeds 500ppm, use an air purifier.



Dimensions: 13" x 1/2" (33 x 1.3 cm)

Thermal Gas High Capacity Purifier Replacement Getter Tube

Each replacement getter tube has 12L oxygen and 35L water vapor capacity at a minimum flow rate of 1 liter/minute and removes oxygen, water, carbon monoxide, carbon dioxide, hydrocarbons (except methane) to ppb levels; pure enough for MS. Typically requires replacement once per year.

Replacement Getter Tubes	qty.	cat.#	price
1/8" Fittings (Similar to Supelco part# 2-2396)	ea.	21661	
1/4" Fittings (Similar to Supelco part# 2-2398)	ea.	21660	

Replacement getter tubes must be used with a Thermal Gas Purifier housing unit.

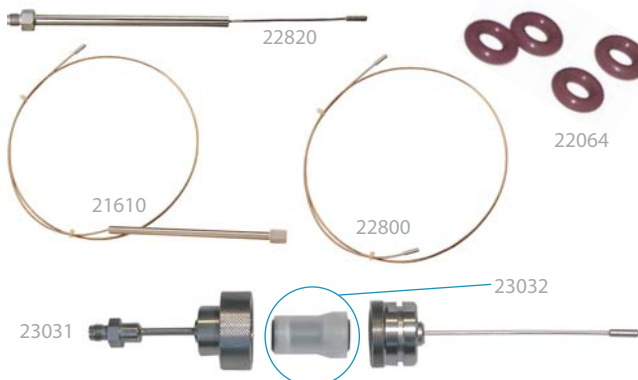
Change tube when gas pressure drops.

Gas Pressure Gauge Kit

- Use an in-line pressure gauge to indicate when a Thermal Gas Purifier getter tube should be replaced.
- Includes 1/8" tee and 0–100 psi (0-689kPa) gauge.



Description	qty.	cat.#	price
In-line Gas Pressure Gauge Kit for Thermal Gas Purifiers	kit	21657	



Replacement Chemical Traps for Agilent GCs

- Easy to install.
- Attach to same fittings as original manufacturer's equipment.
- Built-in frits retain fine particles; adsorbents remove both moisture and hydrocarbons.

Description	Similar to Agilent part #	qty.	cat.#	price
Replacement Split Vent Trap for Agilent 6890/6850 GCs	G1544-80550	ea.	22820	
Replacement Chemical Trap for Agilent 5890 GCs	05890-61260	ea.	21610	
Split Vent Line for Agilent GCs (32-inch) (Includes all installation hardware.)	19251-80525 G1544-20620	2-pk.	22800	
O-rings for Agilent Trap Fittings	5180-4181	25-pk.	22064	
Optional Split Vent Trap Assembly for Agilent 6890/6850 GCs	G1544-60610	kit	23031	
Replacement Traps (2) and O-rings (4)	G1544-80530	kit	23032	



Eliminate ghost peaks—change your chemical trap often!