

# GC ACCESSORIES

## GAS PURIFICATION ESSENTIALS

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What's  
**NEW?**  
look for this  
circle



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**ECH**nology Pty Ltd

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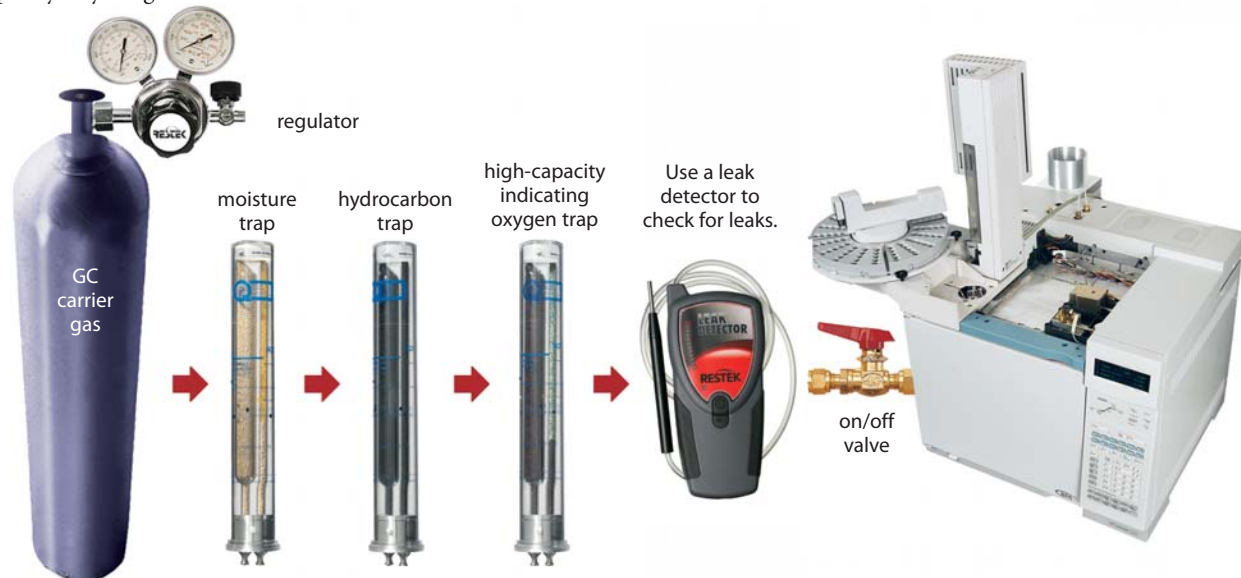
Australian Distributors  
Importers & Manufacturers  
[www.chromtech.net.au](http://www.chromtech.net.au)

11/12

**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, ext. 4 or support@restek.com) 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 1 ppm 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. 299).

**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. 299).

**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. 299) 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 <1 ppm oxygen. This can be monitored by continually leak checking all gas system connections using Restek's Electronic Leak Detector (cat.# 22839, page 296).

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.



www.restek.com **295**

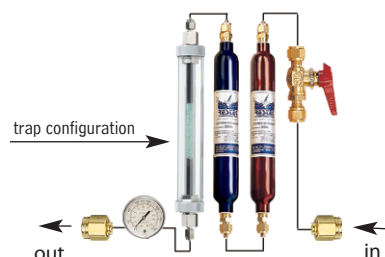
### Restek Gas Management System

- 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.

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.



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 10 ppb), hydrocarbons (to 0.1 ppm), and oxygen (to less than 0.1 ppm) with three traps housed in one unit.

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

### Restek Electronic Leak Detector

Don't let a small leak turn into a costly repair—protect your instrument 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.



22839



#### 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, Ex, Japan
Compliance:	WEEE, RoHS

Description	qty.	cat.#	price
Leak Detector with Hard-Sided Carrying Case and Universal Charger Set (US, UK, European, Australian)	ea.	22839	
Leak Detector Routine Maintenance Review**	ea.	22839-R	
Soft-Side 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.

\*\*Routine maintenance includes inspection of the probe tip, internal/external tubing and a battery replacement.



22658

### **i** tech tip

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

### for more info

See **page 273** for more information on the Restek Electronic Leak Detector.



Dimensions: 9 1/4" 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, 100 psi (689 kPa) operating pressure.
- Built-in frit traps microparticles.
- Outlet gas purity:
  - $O_2 < 0.1$  ppm when inlet does not exceed 15 ppm.
  - $H_2O < 0.5$  ppm when inlet does not exceed 10 ppm.
- Maximum operating pressure: 150 psi (1,034 kPa).
- Maximum flow: 16.5 L/min.

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



Dimensions: 10" x 1 1/4" (25.4 x 3.2 cm)

### Indicating Oxygen Trap

- Indicator changes from light green to grey as oxygen is trapped.
- Heavy-walled glass body, protected by polycarbonate sleeve, prevents oxygen & water infusion.
- Prepurged for fast stabilization.
- 100 psi (689 kPa) maximum operating pressure.
- Reduces oxygen to 0.1 ppm.
- 10  $\mu$ m frits at inlet and outlet.

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



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

### High-Capacity Oxygen Trap

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

Description	Fittings	qty.	cat.#	price
High-Capacity Oxygen Trap	1/8" Nickel-Plated Brass	ea.	20601	
High-Capacity Oxygen Trap	1/4" Nickel-Plated Brass	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 1 ppm.
- Fits in GC oven for easy thermal recharging.
- Maximum flow: 1 L/min.



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

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



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

### High-Capacity Moisture Trap

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

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



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

### Indicating Moisture Trap

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

Description	Fittings	qty.	cat.#	price
Indicating Moisture Trap	1/8" Brass	ea.	22014	
Indicating Moisture Trap	1/4" Brass	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 0.1 ppm (assuming 100 ppm input).
- Maximum operating pressure: 250 psi (1,724 kPa).

Description	Fittings	qty.	cat.#	price
Capillary-Grade Hydrocarbon Trap	1/8" Nickel-Plated Brass	ea.	21991	
Capillary-Grade Hydrocarbon Trap	1/4" Nickel-Plated Brass	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 0.1 ppm (assuming 100 ppm input).
- 60 µm frit prevents gas contamination by purifier particles.
- Good for purge & trap systems.
- Refillable and rechargeable.
- Maximum operating pressure: 125 psig (862 kPa).
- Maximum flow: 5 L/min.

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

**Hydrocarbon S-Trap**

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



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

Description	Fittings	qty.	cat.#	price
Hydrocarbon S-Trap	1/8" Brass	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	Fittings	qty.	cat.#	price
Indicating Hydrocarbon Trap for Air Compressors	1/8" Brass	ea.	20637	
Indicating Hydrocarbon Trap for Air Compressors	1/4" Brass	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.
- Includes connecting lines and mounting kit.

Description	Fittings	qty.	cat.#	price
High-Capacity Split Vent Trap	1/8"	ea.	20698	
High-Capacity Split Vent Trap	1/8"	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	Fittings	qty.	cat.#	price
ECD Vent Trap	1/8"	ea.	22017	

**Carrier Gas Purity**

Carrier gas should contain less than 1 ppm 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 2 L/min.).
- “Quick connect” fittings for easy, leak-tight cartridge changes.
- Glass inside to prevent diffusion; polycarbonate housing outside for safety.
- All traps measure 10<sup>5</sup>/<sub>8</sub>" x 1<sup>3</sup>/<sub>4</sub>" (27 x 4.4 cm).
- Each base plate unit measures 4" x 4" x 1<sup>7</sup>/<sub>8</sub>" (10.2 x 10.2 x 4.8 cm).

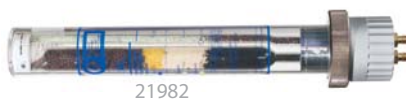
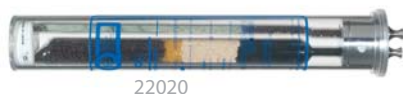
**Table I** Each Super-Clean gas filter provides high-purity outlet gas.

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

<sup>1</sup>Removes hydrocarbons, moisture.<sup>2</sup>Removes hydrocarbons, moisture, oxygen.<sup>3</sup>As *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	
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	

**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.



22026



22025



22027

### 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.
- End fittings available in brass or stainless steel.
- Base plates fit all Super-Clean gas filters listed.

Description	qty.	Brass		Stainless Steel	
		cat.#	price	cat.#	price
Filter Base Plate, Single-Position	ea.	22025	\$231	ea. 22344	
Filter Base Plate, 2-Position	ea.	22026	\$425	ea. 22345	
Filter Base Plate, 3-Position	ea.	22027	\$609	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.



21833

Description	qty.	Brass		Stainless Steel	
		cat.#	price	cat.#	price
Tube-End Reducer, 1/8" tube to 1/4"	5-pk.	21833	\$31	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 20 L of hydrocarbon-free nitrogen per minute.
- Filters connected in parallel to handle high flows of LC/MS.



20 L of purified nitrogen per minute!

#### Super-Clean Gas Filters provide high-purity outlet gas

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

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 307**.



## Catch the Buzz

Sign up for Restek's e-newsletter, *The Buzz*

**[www.restek.com/buzz](http://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 <sub>2</sub> O (g)	Capacity O <sub>2</sub> (mL)	Hydrocarbons (g) (n-butane)	Estimated Lifetime (years)
Moisture cat.#22467	>99.9999	11 bar 160 psi	25	Inert carrier gas, helium, air, H <sub>2</sub>	15	NA	NA	>3
Oxygen cat.#22468	>99.9999	11 bar 160 psi	25	Inert carrier gas	NA	2,000	NA	>3
Hydrocarbon cat.#22466	>99.9999	11 bar 160 psi	25	Inert carrier gas, helium, air, H <sub>2</sub>	NA	NA	24	>3
Fuel Gas <sup>1</sup> cat.#22465	>99.9999	11 bar 160 psi	25	Inert carrier gas, helium, air, H <sub>2</sub>	7	NA	12	>2
Triple <sup>2</sup> cat.#22464	>99.9999	11 bar 160 psi	25	Inert carrier gas	4	1,000	8	>2

<sup>1</sup>Removes hydrocarbons, moisture.

<sup>2</sup>Removes 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 3.2 cm)

**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
<b>Carrier Gas Purification Kit</b>			
Includes: (2) 1/8" SS connectors and (1) oxygen/moisture/hydrocarbon triple trap	kit	22456	
Includes: (2) 1/8" brass connectors and (1) oxygen/moisture/hydrocarbon triple trap	kit	22457	
Includes: (2) 1/4" SS connectors and (1) oxygen/moisture/hydrocarbon triple trap	kit	22458	
Includes: (2) 1/4" brass connectors and (1) oxygen/moisture/hydrocarbon triple trap	kit	22459	
<b>Fuel Gas Purification Kit</b>			
Includes: (4) 1/8" SS connectors and (2) hydrocarbon/moisture traps	kit	22460	
Includes: (4) 1/8" brass connectors and (2) hydrocarbon/moisture traps	kit	22461	
Includes: (4) 1/4" SS connectors and (2) hydrocarbon/moisture traps	kit	22462	
Includes: (4) 1/4" brass connectors and (2) hydrocarbon/moisture traps	kit	22463	



To prevent settling of dessicant, mount vertically, not horizontally.





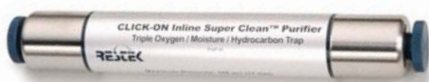
### Click-On Inline Super-Clean Indicator

- Oxygen: green to grey
- Moisture: beige to clear

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

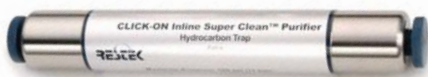


Install an indicator after the Click-On inline gas filter so there is no confusion about when to replace the traps.



### Click-On Inline Super-Clean Replacement Gas Traps

Description	qty.	cat.#	price
Triple Trap (removes oxygen, moisture and hydrocarbons)	ea.	22464	
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	

### Click-On Inline Super-Clean Connectors

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

Each connector is 2<sup>3</sup>/<sub>8</sub>" (6 cm) in length.



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

### Click-On Inline Super-Clean Double Connector

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

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



Description	qty.	cat.#	price
Click-On Inline Super-Clean Double Connector, Stainless Steel	ea.	22479	\$215



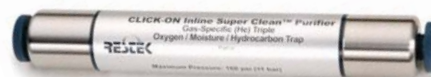
### Accessories

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	

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

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



### 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.

### 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% (50 ppm) 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:

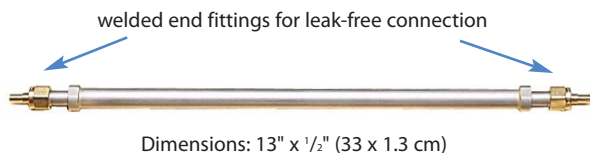
Length	21" (53.3 cm)
Diameter	1.5" (3.8 cm)
Maximum Inlet Pressure	1,000 psi (6895 kPa)
Maximum Recommended Flow	500 mL/min.
Pressure Drop from 120 psi (827 kPa) inlet at 0-500mL/min.:	<0.20 psi (1.4 kPa)
End Fittings	compression, 1/8" or 1/4", stainless steel
Shipping Weight	3.04 lb. (1,300 g)

#### Gas-Specific Purifier Module

#### Compression Tube Fittings

	qty.	1/4-inch		qty.	1/8-inch	
		cat.#	price		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 500 ppm of oxygen. If the oxygen level in the stream exceeds 500 ppm, 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 12 L oxygen and 35 L 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.

Change tube when gas pressure drops.

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	

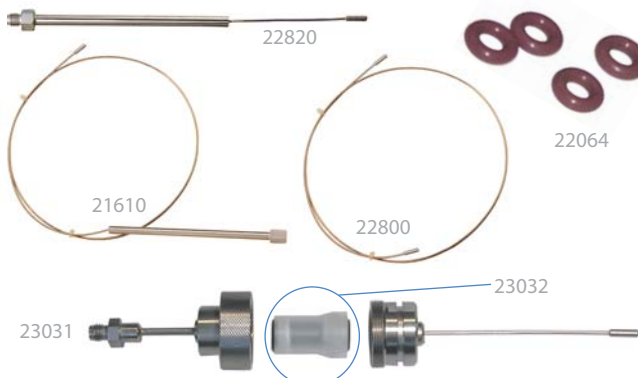
Replacement getter tubes must be used with a Thermal Gas Purifier housing unit.

### 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 (0-689 kPa) gauge.



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



### Replacement Chemical Traps

- 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 (32-inch) for Agilent GCs				
Includes: all installation hardware	19251-80525	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!



### Parker Balston® PEM Hydrogen Generators

- Proton Exchange Membrane (PEM) cell eliminates the need for liquid electrolytes.
- Reliably generate 99.9995% pure hydrogen—for better chromatography.
- Eliminates high-pressure cylinders—greater convenience and improved lab safety.
- Compact unit, requiring only one square foot of bench space.
- Quick and easy to service and maintain; unique display lighting changes color for easy status checks and water level indication.
- Comes with a set of universal power adapters for US, European, and Asian plug types.



Fuel-grade high purity hydrogen generators are safer alternatives to high-pressure gas cylinders. The new Proton Exchange Membrane (PEM) cell eliminates the use of liquid electrolytes with hydrogen generators. Deionized water is all that is required to generate hydrogen for weeks of continuous operation. With an output capacity of up to 510 cc/minute, one generator can supply 99.9995% pure hydrogen for up to several FIDs. Based on cylinder gas savings alone, a hydrogen generator pays for itself in one or two years.

Produced and supported by an ISO 9001 registered organization, Parker Balston® hydrogen generators are the first built to meet the toughest laboratory standards in the world: CSA, UL, cUL, and CE Mark. A great safety feature is the built-in sensing circuit, which shuts the generator down if a hydrogen leak is detected.

#### Specifications

Purity:	99.9995% pure hydrogen
Delivery Pressure:	10-100 psig $\pm$ 1 psig (69-689 kPa $\pm$ 7 kPa)
Outlet Port:	$1/8$ " compression
Electrical Requirements:	100-230 VAC/50-60 Hz
Physical Dimensions:	17.12"h x 13.46"w x 17.95"d (43.48 x 34.19 x 45.6 cm)
Shipping Weight:	40 lbs. (18 kg) dry



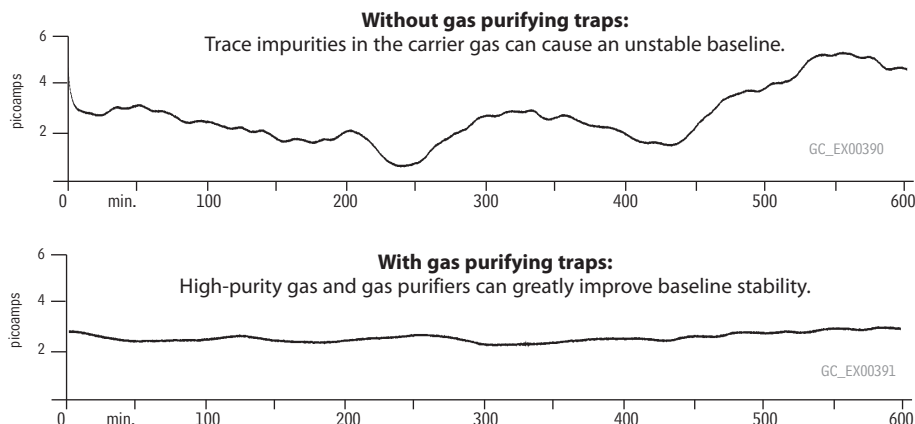
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#### Parker Balston® Hydrogen Generators

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lit. cat.# 580053A

Description	Model #	Capacity	qty.	cat.#	price
Hydrogen Generator	H2PEM-100	100cc/min.	ea.	23065	
Hydrogen Generator	H2PEM-165	165cc/min.	ea.	23066	
Hydrogen Generator	H2PEM-260	260cc/min.	ea.	23067	
Hydrogen Generator	H2PEM-510	510cc/min.	ea.	23068	
<b>Replacement and Maintenance Components for Hydrogen Generators (for all models listed above)</b>					
Replacement Desiccant Cartridge for H2PEM Generators			ea.	23069	
6-Month Maintenance Kit for H2PEM Generators					
Includes: 1 deionizer cartridge, 1 water filter, 3 environmental filters			kit	23070	
24-Month Maintenance Kit for H2PEM Generators					
Includes: 1 deionizer cartridge, 1 water filter, 3 environmental filters, 1 water level sensor, 1 water pump, and 1 desiccant cartridge			kit	23071	

**The combination of high-purity gas and gas purifying traps can save analytical time in the long run.**



Using purifying gas  
traps in combination  
with a gas generator  
can improve chro-  
matography tremen-  
dously and improve  
column lifetime.

## Parker Balston® Model FID-1000 and FID-2500 Gas Stations

- Single unit produces UHP zero air from house compressed air and 99.9995% pure hydrogen from deionized water.
- Ideal for supplying up to 5-6 FIDs.
- Eliminates inconvenient and dangerous gas cylinders.
- Silent operation, minimal operator attention required.

Parker Balston® Gas Stations provide both UHP grade hydrogen gas and zero grade air for flame ionization detectors. The system is specifically designed to supply gas to FIDs and to support flame thermionic and flame photometric detectors. The units produce zero air by purifying compressed air to a total hydrocarbon concentration of 0.1 ppm or less (measured as methane).

The hydrogen generators produce hydrogen gas from deionized water, using the principle of electrolytic dissociation of water and hydrogen proton conduction through a proton exchange membrane cell.



Produce zero air and pure hydrogen from one unit!

### Specifications

Hydrogen Purity:	99.9995%	Power:	120 VAC/amp, 60 Hz, 400 watts
Zero Air Purity:	FID-1000:	Hydrogen Outlet Pressure:	60 psig (414 kPa)
	< 0.1 ppm total hydrocarbons as methane	Zero Air Outlet Pressure:	40-125 psig* (276-862 kPa)
	FID-2500:	Inlet Connection:	1/4" NPT (female)
	< 0.05 ppm total hydrocarbons as methane	Outlet:	1/8" compression
Max. Hydrogen Flow Rate:	FID-1000: 90 cc/min.	Dimensions:	16.5"h x 10.5"w x 17"d
	FID-2500: 250 cc/min.		(42 cm x 27 cm x 43 cm)
Max. Zero Air Flow Rate:	FID-1000: 1000 cc/min.	Weight:	53 lbs. (24kg)
	FID-2500: 2500 cc/min.		

\*Zero air inlet requires minimum of 40 psig (276 kPa) compressed air pressure.

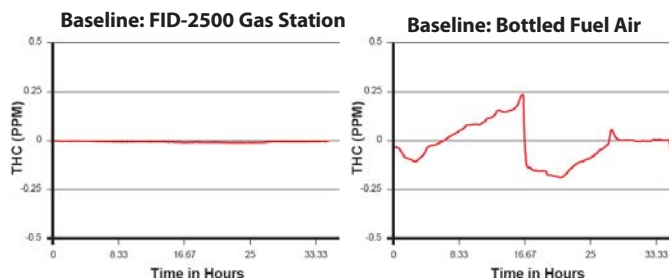


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### FID Gas Stations

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lit. cat.# 580051

Compare baselines produced by a Parker Balston® FID Gas Station and bottled fuel air. The baseline produced by the Parker Balston® Generator is flat, with no fluctuations or peaks; the chromatogram from the bottled air fuel supply has many peaks ranging from 0.25 ppm to -0.25 ppm total hydrocarbons.



Description	Model #	qty.	cat. #	price
Gas Station	Model FID-1000 (ideal for 1-2 FIDs)	ea.	20177	
Gas Station	Model FID-2500 (ideal for 5-6 FIDs)	ea.	24913	
<b>Replacement Components for FID Gas Stations</b>				
Resin Bed Cartridge for Hydrogen Generators in FID-1000 and FID-2500 Gas Stations		ea.	24914	
Replacement Desiccant Cartridge		ea.	21671	
FID Gas Station Maintenance Kit				
Includes: 1 desiccant cartridge, 1 resin bed cartridge, 1 filter cartridge		ea.	24915	

## International Power Cord Sets

Just add the proper suffix to the catalog number for the gas generator you are ordering.

Location	qty.	cat.# suffix	price
United Kingdom (230VAC, 50/50Hz)	ea.	-550	
European (230VAC, 50/60Hz)	ea.	-551	
IEC Connector Only (230VAC, 50/60Hz)	ea.	-552	
Japanese (200VAC, 50/60Hz)	ea.	-556	
Japanese for Zero Air (100VAC, 50/60Hz)	ea.	-553	
Japanese for Hydrogen (100VAC, 50/60Hz)	ea.	-554	
Japanese for Nitrogen (100VAC, 50/60Hz)	ea.	-555	

## ordering note

For **international orders**, please add the appropriate power cord suffix from the table below.

Select the power cord you need.



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21654



### Parker Balston® Nitrogen Gas Generators

- Produces ultra-pure nitrogen (up to 99.9995%).
- Flows from 1 to 75+ lpm.
- Require only a compressed air source and 110 volt AC power.
- Typical applications include GC carrier gas, make-up gas, and low flow sample concentrators.
- Maintenance kits include replacement filters.

#### Specifications

	Model HPN2-1100 or UHPN2-1100	Model HPN2-2000
Maximum Nitrogen Flow Rate:	See Flow Table	2 lpm
Nitrogen Purity:	99.9999%	99.99%
Minimum/Maximum Inlet Pressure:	60 psig/125 psig (414/862kPa)	75 psig/120 psig (517/827kPa)
Electrical Requirements:	120 VAC/60 Hz	120 VAC/60 Hz
Dimensions:	35"h x 12"w x 16"d (89cm x 30cm x 41cm)	35"h x 12"w x 16"d (89cm x 30cm x 41cm)
Shipping Weight:	115 lbs. (52 kg)	115 lbs. (52 kg)

#### Note:

Models HPN2-1100 and HPN2-2000 do not remove hydrocarbons.

\*Power consumption is:

Model HPN2-1100

= 25 Watts

Model UHPN2-1100

= 700 Watts

Model HPN2-2000

= 25 Watts

#### Flow Table for Models HPN2-2000, HPN2-1100, and UHPN2-1100

Inlet Air Pressure	Maximum Outlet Flow (cc/min.)	Maximum Outlet Pressure
Models HPN2-1100 and UHPN2-1100		
125 psig (862kPa)	1100	85 psig (586kPa)
110 psig (758kPa)	1000	75 psig (517kPa)
100 psig (689kPa)	900	65 psig (448kPa)
90 psig (621kPa)	800	60 psig (414kPa)
80 psig (552kPa)	700	50 psig (345kPa)
70 psig (483kPa)	600	45 psig (310kPa)
60 psig (414kPa)	500	35 psig (241kPa)
Model HPN2-2000		
75-120 psig (517-827kPa)	2000	90 psig (621kPa)



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#### Nitrogen Generators

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lit. cat.# 580052

### ordering note

For **international orders**, please add the appropriate power cord suffix from the table below.

Nitrogen Generators	Model #	qty.	cat.#	price
Nitrogen Generator	HPN2-2000 (high purity)	ea.	21654	
Nitrogen Generator	HPN2-1100 (ultra-high purity)	ea.	21653	
Nitrogen Generator	HPN2-1100 with European Cord Set	ea.	21653-551	
Nitrogen Generator	HPN2-1100 with IEC Connector Only	ea.	21653-552	
Nitrogen Generator	UHPN2-1100 (ultra-high purity zero grade)	ea.	20697	
Maintenance Kits	Model #	qty.	cat.#	price
Maintenance Kit	for HPN2-1100, HPN2-2000, 76-96, 76-92	kit	21649	
Maintenance Kit	for UHPN2-1100, 76-94	kit	21655	

### International Power Cord Sets

Just add the proper suffix to the catalog number for the gas generator you are ordering.

Location	qty.	cat.# suffix	price
United Kingdom (230VAC, 50/50Hz)	ea.	-550	
European (230VAC, 50/60Hz)	ea.	-551	
IEC Connector Only (230VAC, 50/60Hz)	ea.	-552	
Japanese (200VAC, 50/60Hz)	ea.	-556	
Japanese for Zero Air (100VAC, 50/60Hz)	ea.	-553	
Japanese for Hydrogen (100VAC, 50/60Hz)	ea.	-554	
Japanese for Nitrogen (100VAC, 50/60Hz)	ea.	-555	

Select the power cord you need.

**Parker Balston® Nitrogen Gas Generators for LC/MS**

- Turn compressed air into ultra-pure nitrogen (up to 99.5%).
- Flows from 1 to 44 lpm.
- Models N2-04, N2-14, N2-22, and N2-35 require no electricity.
- Safe, reliable, low maintenance.
- Maintenance kits include replacement filters.



22130



22129



Specifications	NitroFlow Lab	N2-04	N2-14 or N2-14A	N2-22 or N2-22A	N2-35 or N2-35A
Maximum Nitrogen Flow Rate:	32 lpm	8 lpm	78scfh at 95% purity	N2-22: 44 lpm N2-22A: 29 lpm	44 lpm
Nitrogen Purity:	99.50%	99%	95.0%–99.5%	99%	99%
Min/Max Inlet Pressure:	N/A	60 psig/145 psig	60 psig/145 psig	60 psig/145 psig	60 psig/145 psig
Electrical Requirements:	120VAC/60Hz	None	N2-14: None N2-14A: 120VAC/60Hz	N2-22: None N2-22A: 120VAC/60Hz	N2-35: None N2-35A: 120VAC/60Hz
Dimensions:	27.6" h x 35.4" w x 12.2" d (70cm x 90cm x 31cm)	11" h x 13" w x 16" d (27cm x 34cm x 41cm)	50" h x 16" w x 16" d (127cm x 41cm x 41cm)	50" h x 16" w x 16" d (127cm x 41cm x 41cm)	50" h x 16" w x 16" d (127cm x 41cm x 41cm)
Shipping Weight:	205 lbs. (93 kg)	43 lbs. (20 kg)	N2-14: 75 lbs. (34 kg) N2-14A: 80 lbs. (36 kg)	N2-22: 101 lbs. (46 kg) N2-22A: 106 lbs. (48 kg)	N2-35: 115 lbs. (52 kg) N2-35A: 119 lbs. (54 kg)

Nitrogen Generators for LC/MS	Model #	qty.	cat.#	price
Nitrogen Generator for LC/MS	NitroFlow Lab Model, 32 lpm max. flow	ea.	22129	
Nitrogen Generator for LC/MS	N2-04 Model for ELSD, 8 lpm max. flow	ea.	22130	
Nitrogen Generator for LC/MS	N2-14 (general purpose) 78 scfh max. flow at 95% purity	ea.	20677	
Nitrogen Generator for LC/MS	N2-14 with European Power Cord	ea.	20677-551	
Nitrogen Generator for LC/MS	N2-14A (general purpose w/oxygen analyzer) 78 scfh max. flow at 95% purity	ea.	21652	
Nitrogen Generator for LC/MS	N2-22 Model, 44 lpm max. flow	ea.	22131	
Nitrogen Generator for LC/MS	N2-22A Model, 29 lpm max. flow	ea.	22132	
Nitrogen Generator for LC/MS	N2-35 Model, 44 lpm max. flow	ea.	22133	
Nitrogen Generator for LC/MS	N2-35A Model, 44 lpm max. flow	ea.	22134	
Maintenance Kits	Model #	qty.	cat.#	price
Maintenance Kit	for N2-14, N2-14A, 75-72, 75-720NA	kit	21648	
Maintenance Kit with Carbon Filter	for N2-14, N2-14A, 75-72, 75-720NA	ea.	22135	

### ordering note

For **international orders**, please add the appropriate power cord suffix from the table on the previous page.

## Restek Electronic Leak Detector...



Go to [www.restek.com/leakdetector](http://www.restek.com/leakdetector) for details.

## ...and Introducing the **NEW** Restek ProFLOW 6000 Electronic Flowmeter



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### Parker Balston® Zero Air Generators

- Turn in-house compressed air into ultra-pure air (<0.1 ppm total hydrocarbons).
- Remove hydrocarbons to less than 0.1 ppm by catalytic oxidation.
- Operate at 40 to 125 psi (276-862 kPa).
- Typical payback is less than one year, based on cylinder costs.
- Install easily and take up little bench space.
- Maintenance kits include a one year supply of prefilters and final filter.



CE

Model	Number of FIDs*
75-83NA	Up to 3
HPZA-3500	Up to 11
HPZA-7000	Up to 23
HPZA-18000	Up to 60
HPZA-30000	Up to 100

\*based on a 300 cc/min. fuel air rate

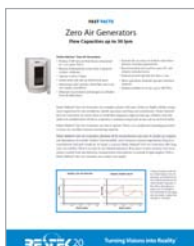
#### Specifications

Maximum Zero Air Flow Rate:	75-83NA	1 lpm
	HPZA-3500	3.5 lpm
	HPZA-7000	7 lpm
	HPZA-18000	18 lpm
	HPZA-30000	30 lpm
Outlet Hydrocarbon Concentration (as methane):	75-83NA	< 0.1 ppm
	HPZA-30000	< 0.1 ppm
	Other Models	< .05 ppm
Minimum/Maximum Inlet Air Pressure:	40 psig/125 psig (276/862 kPa)	
Maximum Inlet Hydrocarbon Concentration (as methane):	100 ppm	
Pressure Drop at Maximum Flow Rate:	4 psi (28 kPa) differential	
Maximum Inlet Air Temperature:	78°F (25°C)	
Inlet/Outlet Ports:	1/4" NPT (female)	
Start-up Time to Specified Hydrocarbon Concentration:	45 minutes	
Electrical Requirements:	75-83NA	120 VAC/60 Hz, 0.5 amps
	Other Models	120 VAC/60 Hz, 3.5 amps
Dimensions:	75-83NA	12"h x 10"w x 3"d (30 cm x 25 cm x 8 cm)
	Other Models	16"h x 11"w x 13"d (42 cm x 27 cm x 3 cm)
Shipping Weight:	75-83NA	7 lbs. (3 kg)
	Other Models	41 lbs. (19 kg)

### ordering note

For **international orders**, please add the appropriate power cord suffix from the table below.

Zero Air Generator	Model #	Capacity	qty.	cat. #	price
Zero Air Generator	75-83NA	1000cc/min.	ea.	20684	
Zero Air Generator	75-83NA with United Kingdom Power Cord	1000cc/min.	ea.	20684-550	
Zero Air Generator	HPZA-3500	3500cc/min.	ea.	20680	
Zero Air Generator	HPZA-3500 with European Power Cord	3500cc/min.	ea.	20680-551	
Zero Air Generator	HPZA-7000	7000cc/min.	ea.	20681	
Zero Air Generator	HPZA-18000	18,000cc/min.	ea.	20682	
Zero Air Generator	HPZA-30000	30,000cc/min.	ea.	20683	
<b>Maintenance Kits (includes a one-year supply of prefilters and final filter)</b>				<b>qty.</b>	<b>cat. #</b>
Maintenance Kit	for 75-83NA		kit	21646	<b>price</b>
Maintenance Kit	for HPZA-3500, HPZA-7000, HPZA-18000, HPZA-30000		kit	21647	
Replacement Catalyst Towers	Model #	Capacity	qty.	cat. #	price
Replacement Catalyst Tower	for 75-83NA	1000cc/min.	ea.	22005	
Replacement Catalyst Tower	for HPZA-3500	3500cc/min.	ea.	22004	
Replacement Catalyst Tower	for HPZA-7000	7000cc/min.	ea.	22006	
Replacement Catalyst Tower	for HPZA-18000	18,000cc/min.	ea.	22007	
Replacement Catalyst Tower	for HPZA-30000	30,000cc/min.	ea.	22008	



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#### Zero Air Generators

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lit. cat.# 580050

### International Power Cord Sets

Just add the proper suffix to the catalog number for the gas generator you are ordering.

Location	qty.	cat.# suffix	price
United Kingdom (230VAC, 50/50Hz)	ea.	-550	
European (230VAC, 50/60Hz)	ea.	-551	
IEC Connector Only (230VAC, 50/60Hz)	ea.	-552	
Japanese (200VAC, 50/60Hz)	ea.	-556	
Japanese for Zero Air (100VAC, 50/60Hz)	ea.	-553	
Japanese for Hydrogen (100VAC, 50/60Hz)	ea.	-554	
Japanese for Nitrogen (100VAC, 50/60Hz)	ea.	-555	

**Silcosteel® Regulators**

Single and dual stage regulators are now available with Silcosteel® surface treatment. This proprietary passivation process, developed by SilcoTek™, provides excellent inertness for sulfur and mercury calibration standards and improved corrosion resistance over bare 316L stainless steel or other more expensive alloys.

Silcosteel® treated sampling and transfer systems allow oil and gas exploration, chemical and petrochemical plants, and refineries to obtain accurate sulfur and mercury data the first time, every time, with no delay, sample errors, or false readings, down to part-per-billion (ppb) levels. Analysts charged with monitoring sulfur and mercury levels in process streams can save thousands of dollars in improved yields, better test cycle times, and improved system reliability.

**Applications:**

- CEM Continuous Emission Monitoring
- Environmental Stack and Gas Emission Standards
- Low level sulfur and mercury analysis
- Reactive or corrosive gases
- Off-shore platform systems
- Corrosive and salt water exposure

Outlet pressure: 0 to 100 psig  
 Outlet gauge: 30" – 0 to 200 psig  
 Inlet gauge: 0 to 4000 psig  
 Outlet assembly: diaphragm valve, 1/4" tube fitting

Description	qty.	cat.#	price
<b>Single-Stage Regulator</b>			
CGA 330 (H <sub>2</sub> S and other reduced sulfurs)	ea.	21361-5	
CGA 350 (H <sub>2</sub> , P <sub>2</sub> )	ea.	21361-6	
CGA 660 (NO, NO <sub>2</sub> , SO <sub>2</sub> )	ea.	21361-11	
<b>Dual-Stage Regulator</b>			
CGA 330 (H <sub>2</sub> S and other reduced sulfurs)	ea.	21360-2	
CGA 350 (H <sub>2</sub> , P <sub>2</sub> )	ea.	21360-7	
CGA 660 (NO, NO <sub>2</sub> , SO <sub>2</sub> )	ea.	21360-12	

For other CGA fittings, please contact your local Restek representative.



**also available**

Regulators for use  
with gas standards.  
See **pages 433-434**.

