

Gas Specific Purifiers and Contaminant Traps

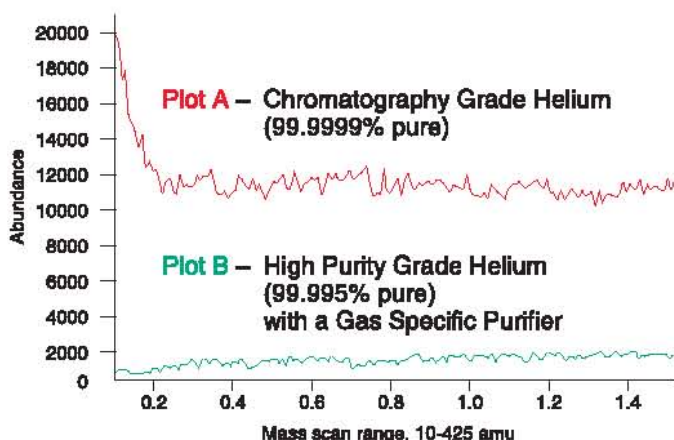
- Reduce gas impurities from high PPM to low PPB levels
- Decrease baseline noise and increase GC/MS sensitivity
- Replace three traps with one purifier



Description

Several types of contaminants are detrimental to GC performance – notably moisture, hydrocarbons, and oxygen. VICI Metronics gas-specific purifier modules are designed to be placed in-line with the GC carrier or detector gas supply to remove these contaminants from the analytical gases prior to entering the GC. The modules dramatically reduce contaminant levels and absorb a greater variety of contaminants than other products.

Our successive bed format achieves the highest purity gas commercially available



Two very high capacity hydrocarbon and moisture sorbents at the inlet for effective contaminant removal

Unique proprietary broad spectrum sorbent material for multiple contaminant removal

Two oxygen scavenging materials for both high capacity and high efficiency O₂ removal

Multiple bed format to allow several step reduction in contaminants

Removal of H₂O, O₂, halocarbons, hydrocarbons, CO, CO₂, H₂, and sulfur containing compounds with a single purifier

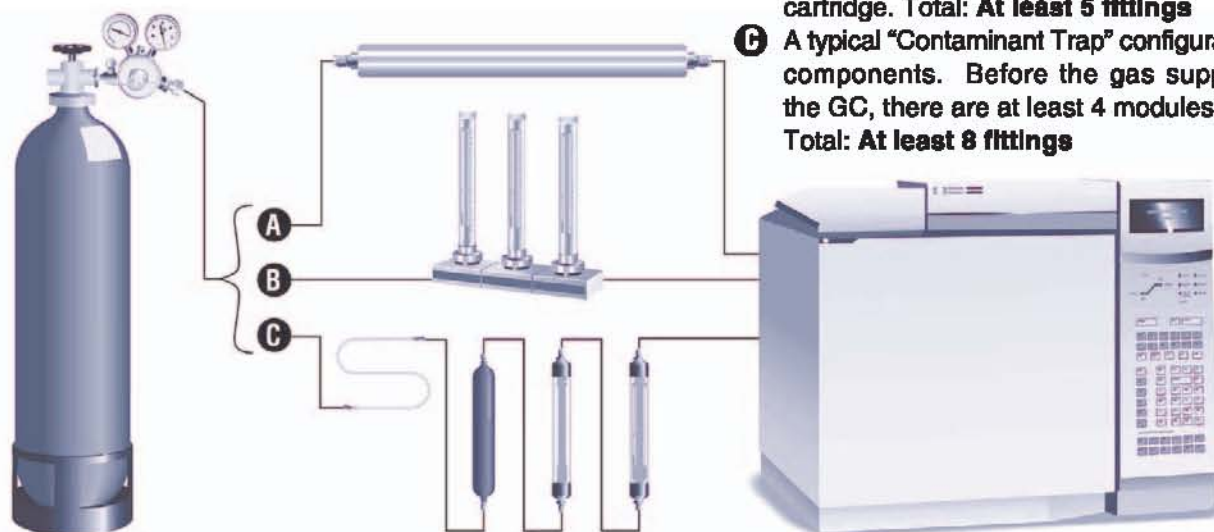
Very high efficiency sorbents at the outlet for trace contaminant removal



Performance is optimized by a multiple bed format. Each bed functions at a lower contaminant concentration, resulting in a series of contaminant concentration gradients across the length of the module. Advanced materials and design features guarantee that the modules will produce gases that are at least a factor of ten higher than a 99.9999% "chromatography grade" cylinder of gas when the purifier is supplied by a 99.995% cylinder. The cost difference between the two grades of gas will pay for the cost of the purifier several times over during its operating life.

Fittings: the Fewer the Better

Every connection in your gas delivery system has the potential for leaks; the more fittings you have, the greater the potential. In the illustration below, several gas purification options are depicted:



- A** The VICI Metronics Gas Specific Purifier minimizes the number of fittings. Total: **2 fittings**
- B** The "Manifold System" has two compression fittings for the system and one organic O-ring seal for each cartridge. Total: **At least 5 fittings**
- C** A typical "Contaminant Trap" configuration has several components. Before the gas supply even enters the GC, there are at least 4 modules. Total: **At least 8 fittings**

Specifications

Length 52.3 cm (21")
 Diameter 3.8 cm (1.5")
 Maximum Inlet pressure 6895 kPa (1000 psi)
 Maximum recommended flow 500 ml/min

Pressure drop, 827 kPa (120 psi) inlet,
 at a flow of 0 to 500 ml/min < 0.20 psi
 Compression end fittings 1/8" or 1/4"
 Shipping weight 1,300 g (3.04 lb)

Selection Guide and Ordering Information

Product Description	Product no.	Fitting	PPB at outlet, based on 50 PPM nominal inlet concentration level					
			CO	CO ₂	O ₂	H ₂ O	Sulfur compounds	NMHC*
Helium purifier	P-100-1	1/8"	<1	<1	<1	<1	<1	<3
	P-100-2	1/4"	<1	<1	<1	<1	<1	<3
Hydrogen purifier	P-200-1	1/8"	<1	<1	<1	<1	<1	<3
	P-200-2	1/4"	<1	<1	<1	<1	<1	<3
Nitrogen purifier	P-300-1	1/8"	<1	<1	<1	<1	<1	<3
	P-300-2	1/4"	<1	<1	<1	<1	<1	<3
Nitrogen purifier for LC/MS apps	P-310-1	1/8"				<25	<25	<25
	P-310-2	1/4"				<25	<25	<25
Purifier for nitrogen generators	P-350-1	1/8"				<25	<25	<25
	P-350-2	1/4"				<25	<25	<25
Air purifier	P-400-1	1/8"				<1		<3
	P-400-2	1/4"				<1		<3
Moisture trap	T-100-1	1/8"				<1		
	T-100-2	1/4"				<1		
Hydrocarbon trap	T-200-1	1/8"						<3
	T-200-2	1/4"						<3
Oxygen trap	T-300-1	1/8"			<1	<1		
	T-300-2	1/4"			<1	<1		
Sulfur trap	T-400-1	1/8"				<1	<1	
Methane purifier	P-500-1	1/8"	<1	<1	<1	<1	<1	<3

*NMHC = non-methane hydrocarbons

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 (877) 737-1887**

GAS PURIFICATION

Overview

Overview

Gas specific purifiers

Specialized purifiers

Contaminant traps

Gas purity is essential in any application requiring extreme sensitivity. Contaminant traps and gas purifiers for specific gases dramatically reduce the levels of contaminants, enhance the purity of lower grade helium, and help ensure instrument stability, reproducibility, and lower maintenance costs.

Purifiers for specific gases

Purifiers from VICI Metronics are designed to go in-line with the carrier or detector gas supply. These include models which were original equipment gas purifiers for the Agilent Mass Spec and LC Mass Spec.

Also available are VICI Valco heated helium and nitrogen purifiers, for peak purification performance.

Air
Carbon dioxide
Helium
Hydrogen
Methane
Nitrogen



Specialized purifiers

We also offer purifiers for special applications, such as chemical ionization MS, and nitrogen for LC/MS or from a nitrogen generator. Our liquid carbon dioxide purification technology can result in significant cost savings.

For nitrogen for LC/MS
For nitrogen generators
For chemical ionization MS
For liquid carbon dioxide
Heated helium purifiers
Heated nitrogen purifiers

Contaminant traps

For applications with a single contaminant of interest, high capacity contaminant specific traps are your best option, since they generally have four times as much capacity for the specific contaminant as a gas specific purifier.

Hydrocarbon traps
Mercury traps
Moisture traps
Oxygen traps
Sulfur traps

SEE ALSO

- [More products for GC](#)

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GAS PURIFICATION

Gas Specific Purifiers from VICI Metronics

Overview

Gas specific purifiers

- Air
- Carbon dioxide
 - Standard
 - Heated
- Hydrogen
 - Standard
 - Heated
- Methane
 - Standard
 - Heated
- Nitrogen
 - Standard
 - Heated

Specialized purifiers

Contaminant traps

- Original equipment in Agilent® Mass Spec and LC Mass Spec
- Provide point-of-use gas purification of helium, hydrogen, methane, nitrogen, carbon dioxide, or air
- Reduce gas impurities from high PPM to low PPB levels
- Decrease baseline noise and increase GC/MS sensitivity
- Replace three traps with one purifier



Gas purification is critical to GC performance. Several types of contaminants are detrimental – notably moisture, hydrocarbons, and oxygen. VICI Metronics gas purifier modules are designed to be placed in-line with the GC carrier or detector gas supply to remove these contaminants from the analytical gases prior to their entering the GC.

Gas purification is optimized by a multiple bed format. Each bed functions at a lower contaminant concentration, resulting in a series of contaminant concentration gradients across the length of the gas purifier.

See illustration. >

VICI Metronics gas purifiers dramatically reduce contaminant levels and absorb a greater variety of contaminants than other gas purification products. Advanced materials and design features guarantee that the modules will produce gases that are at least a factor of ten higher than a 99.9999% "chromatography grade" cylinder of gas when the purifier is supplied by a 99.995% cylinder. See chart. >

The cost difference between the two grades of gas will pay for the cost of the gas purifier several times over during its operating life.

Gas	Fitting size	Product No.
Helium	1/8"	P100-1*
	1/4"	P100-2
Hydrogen	1/8"	P200-1
	1/4"	P200-2
Nitrogen	1/8"	P300-1
	1/4"	P300-2*
Air	1/8"	P400-1
	1/4"	P400-2
Methane	1/8"	P500-1
	1/4"	P500-2
Carbon dioxide	1/8"	P600-1
	1/4"	P600-2

* Original equipment for Agilent Mass Spec and LC Mass Spec (Agilent part# 5182-3467)

** Original equipment for Agilent Mass Spec and LC Mass Spec (Agilent part# G1946-80047)

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MORE INFORMATION

- Contact us to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purify
- Table of PPB at outlet for six typical contaminants
- Printable data sheet

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

SAFETY NOTE

Not to be used for purification of oxygen

SEE ALSO

- Valco heated helium purifiers and nitrogen purifiers
- Liquid carbon dioxide purifiers
- Nitrogen purifier for LC/MS
- Purifier for nitrogen from a nitrogen generator
- Purifier for CI/MS

GAS PURIFICATION

Specialized Purifiers

Overview

Gas specific purifiers

Specialized purifiers

- For nitrogen for LC/MS
- For nitrogen generators
- For chemical ionization MS
- For liquid carbon dioxide
- Heated helium purifiers
- Heated nitrogen purifiers

Contaminant traps

For nitrogen for LC/MS

VICI Metronics nitrogen purifiers are optimized for the high flow nitrogen gas supply used on LC/MS instruments. A nitrogen purifier module placed in line with the nitrogen gas delivery system removes moisture, hydrocarbons, halocarbons, and oxygen, retaining them for the operating life of the purifier.

[Product information](#)

For nitrogen generators

The purifier for nitrogen generators reduces most contaminant levels from many parts per million to levels that are below the lower limit of analytical detection, and absorbs a larger number and a greater variety of contaminants than other commonly used adsorptive materials.

[Product information](#)

For chemical ionization MS

In response to the increase in commercial availability of instrumentation for Chemical Ionization Mass Spectroscopy, VICI Metronics has developed a purifier designed specifically for the unique demands of the field.

[Product information](#)

For liquid carbon dioxide

VICI Metronics has developed a CO₂ purification technology which can take Coleman grade CO₂ and produce SFC/SFE grade CO₂ at the point of use, resulting in significant cost savings.

[Product information](#)

Heated helium and nitrogen purifiers

The purification substrate in VICI Valco gas purifiers is a non-evaporable heat-activated gettering alloy. This stable alloy is contained in a welded assembly, so the purifiers can be used safely in industrial applications with minimal precautions. The miniature version of each purifier is designed to be installed in a GC's flow path immediately upstream of the injector.

[Helium purifiers](#)
[Nitrogen purifiers](#)

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GAS PURIFICATION

Contaminant Traps from VICI Metronics

Overview

Gas specific purifiers

Specialized purifiers

Contaminant traps

- Hydrocarbons

- Mercury

- Moisture

- Oxygen

- Sulfur

- Ultra-high capacity for the contaminant of interest
- Application specific, gas independent
- Capable of higher flow rates than our gas specific purifiers

For applications with a single contaminant of interest, high capacity contaminant specific traps are your best option, since they generally have four times as much capacity for the specific contaminant as a purifier. This translates to a capacity that exceeds twelve standard type "A" tanks of gas or the equivalent of over 300,000 liters of gas at standard temperature and pressure.



Trapped contaminant	Fitting size	Length	Product No.
Hydrocarbons	1/8"	22.5"	T200-1
	1/4"	22.5"	T200-2
Mercury	1/8"	12"	T700-1
	1/4"	12"	T700-2
Moisture	1/8"	22.5"	T100-1
	1/4"	22.5"	T100-2
Oxygen	1/8"	22.5"	T300-1
	1/4"	22.5"	T300-2
Sulfur	1/8"	12"	T400-1
		22.5"	T401-1
	1/4"	12"	T400-2
		22.5"	T401-2

MORE INFORMATION

- Contact us to find out more about VICI Metronics contaminant traps. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purky
- Printable data sheet
- MSDS
 - T-100
 - T-200
 - T-300
 - T-400
 - T-700

SPECIFICATIONS

Max Inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

GAS PURIFICATION

Gas Specific Purifiers from VICI Metronics

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium
 - Standard
 - Heated
- Hydrogen
- Methane
- Nitrogen
 - Standard
 - Heated

Specialized purifiers

Contaminant traps

- Original equipment in Agilent® Mass Spec and LC Mass Spec
- Provide point-of-use gas purification of helium, hydrogen, methane, nitrogen, carbon dioxide, or air
- Reduce gas impurities from high PPM to low PPB levels
- Decrease baseline noise and increase GC/MS sensitivity
- Replace three traps with one purifier



Gas purification is critical to GC performance. Several types of contaminants are detrimental – notably moisture, hydrocarbons, and oxygen. VICI Metronics gas purifier modules are designed to be placed in-line with the GC carrier or detector gas supply to remove these contaminants from the analytical gases prior to their entering the GC.

Gas purification is optimized by a multiple bed format. Each bed functions at a lower contaminant concentration, resulting in a series of contaminant concentration gradients across the length of the gas purifier.

See illustration. >

VICI Metronics gas purifiers dramatically reduce contaminant levels and absorb a greater variety of contaminants than other gas purification products. Advanced materials and design features guarantee that the modules will produce gases that are at least a factor of ten higher than a 99.9999% "chromatography grade" cylinder of gas when the purifier is supplied by a 99.995% cylinder. See chart. > The cost difference between the two grades of gas will pay for the cost of the gas purifier several times over during its operating life.

Gas	Fitting size	Product No.
Helium	1/8"	P100-1*
	1/4"	P100-2
Hydrogen	1/8"	P200-1
	1/4"	P200-2
Nitrogen	1/8"	P300-1
	1/4"	P300-2*
Air	1/8"	P400-1
	1/4"	P400-2
Methane	1/8"	P500-1
	1/4"	P500-2
Carbon dioxide	1/8"	P600-1
	1/4"	P600-2

* Original equipment for Agilent Mass Spec and LC Mass Spec (Agilent part# 5182-3467)

** Original equipment for Agilent Mass Spec and LC Mass Spec (Agilent part# G1946-80047)

MORE INFORMATION

- Contact us to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purky
- Table of PPB at outlet for six typical contaminants
- Printable data sheet

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

SAFETY NOTE

Not to be used for purification of oxygen

SEE ALSO

- Valco heated helium purifiers and nitrogen purifiers
- Liquid carbon dioxide purifiers
- Nitrogen purifier for LC/MS
- Purifier for nitrogen from a nitrogen generator
- Purifier for CI/MS

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GAS PURIFICATION

Carbon Dioxide Gas Purifier for High Purity Applications

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium

Standard

Heated

- Hydrogen

- Methane

- Nitrogen

Standard

Heated

Specialized purifiers

Contaminant traps

- Outperforms carbon-based hydrocarbon traps
- Larger number and variety of contaminants removed
- Optimized for the high flows of process equipment

These modules, designed to be placed in-line with the CO₂ gas supply, use patented adsorptive materials to capture and retain a broad spectrum of hydrocarbons, halocarbons, and other contaminants that can be present in your CO₂ gas delivery system. The contaminants are retained for the operating life of the purifier, which is typically good for four tanks of CO₂.

Performance is optimized by incorporating a multiple bed format so that each successive bed functions at a lower contaminant concentration. The result is a series of contaminant concentration gradients across the length of the module. See illustration. >



Fitting size	Length	Product No.
1/8"	22.5"	P600-1
1/4"	22.5"	P600-2

MORE INFORMATION

- **Contact us** to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- **Fittings and gas purify**
- **Printable data sheet**

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

SEE ALSO

- **Liquid carbon dioxide purifiers**

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GAS PURIFICATION

Helium Purifiers

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium

Standard

Heated

- Hydrogen
- Methane
- Nitrogen

Standard

Heated

Specialized purifiers

Contaminant traps

Helium purifier modules from VICI Metronics

Purifiers from VICI Metronics are designed to go in-line with the carrier or detector gas supply. These include models which were original equipment gas purifiers for the Agilent Mass Spec and LC Mass Spec.

Product Information



Heated helium purifiers from VICI Valco Instruments

Also available in a compact miniature version, these heated helium purifiers are unsurpassed at removing nitrogen. For applications which can tolerate slightly more nitrogen, unheated Metronics helium purifiers offer an economical gas purification option.

Product Information



GAS PURIFICATION

Helium Purifiers from VICI Metronics

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium

Standard

Heated

- Hydrogen
- Methane
- Nitrogen

Standard

Heated

Specialized purifiers

Contaminant traps

- Original equipment in Agilent® Mass Spec and LC Mass Spec
- Reduce gas impurities from high PPM to low PPB levels
- Decrease baseline noise and increase GC/MS sensitivity
- Replace three traps with one purifier



Gas purification is critical to GC performance. Several types of contaminants are detrimental – notably moisture, hydrocarbons, and oxygen. VICI Metronics gas purifier modules are designed to be placed in-line with the GC carrier or detector gas supply to remove these contaminants from the analytical gases prior to their entering the GC.

Gas purification is optimized by a multiple bed format. Each bed functions at a lower contaminant concentration, resulting in a series of contaminant concentration gradients across the length of the gas purifier.

See Illustration. >

VICI Metronics gas purifiers dramatically reduce contaminant levels and absorb a greater variety of contaminants than other gas purification products. Advanced materials and design features guarantee that the modules will produce gases that are at least a factor of ten higher than a 99.9999% "chromatography grade" cylinder of gas when the purifier is supplied by a 99.995% cylinder. See chart. > The cost difference between the two grades of gas will pay for the cost of the gas purifier several times over during its operating life.

Fitting size	Length	Product No.
1/8"	22.5"	P100-1*
1/4"	22.5"	P100-2

* Original equipment for Agilent Mass Spec and LC Mass Spec (Agilent part# 5182-3467)

MORE INFORMATION

- Contact us to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purky
- Table of PPB at outlet for six typical contaminants
- Printable data sheet
- MSDS

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

SEE ALSO

- Heated helium purifiers from VICI Valco Instruments

SAFETY NOTE

Not to be used for purification of oxygen

GAS PURIFICATION

Heated Helium Purifiers from VICI Valco Instruments

Overview

Gas specific purifiers

Specialized purifiers

- For nitrogen for LC/MS
- For nitrogen generators
- For chemical ionization MS
- For liquid carbon dioxide
- Heated helium purifiers
- Heated nitrogen purifiers

Contaminant traps

Note: These heated helium purifiers are unsurpassed at removing nitrogen. For applications which can tolerate slightly more nitrogen, unheated Metronics helium purifiers offer an economical option.

Carrier gas purity is essential in any application requiring extreme sensitivity. Impurities limit detector sensitivity and can even destroy capillary columns. The Valco helium purifier (HP2) provides "point-of-use" gas purification of helium or other noble gases, such as Ar, Ne, Kr, and Xe, to sub-ppm levels of reactive gaseous impurities.

Based on 10 ppm total inlet impurities, outlet impurities are less than 10 ppb for H₂O, H₂, O₂, N₂, NO, NH₃, CO, CO₂, and CH₄. Other impurities removed include CF₄, CCl₄, SiH₄, and light hydrocarbons.

The purification substrate is a non-evaporable heat-activated gettering alloy. This stable alloy is contained in a welded assembly, so the purifiers can be used safely in industrial applications with minimal precautions. When the getter is heated, the oxide film on the particle surface is eliminated, allowing helium to diffuse into the bulk of the getter particles. The purifier features a self-regulating design which maintains the getter material at the optimum temperature and eliminates the possibility of thermal runaway.

The miniature version is designed to be installed in a gas chromatograph's flow path immediately upstream of the injector. The HPM will remove any contaminants introduced by flow controllers, elastomeric tube seals, pressure regulators, crude traps, or other system components that are not completely clean and leak-tight.



MORE INFORMATION

- Declaration of CE compliance
- User manual
- User manual for miniature version

MAX OPERATING PRESSURE
1000 psig

DISPOSING OF SPENT GETTER CARTRIDGES
Contact VICI to obtain a return authorization number. The packaged getter cartridge should be clearly marked "Traps for Disposal".

SEE ALSO

- VICI Metronics unheated helium purifier modules

Purifiers include a universal power supply.

Description	Voltage	Product No.
HEATED HELIUM PURIFIERS		
Standard size	110 VAC	HP2
	230 VAC	HP2-220
Miniature	110 VAC	HPM
	230 VAC	HPM-220
REPLACEMENT POWER SUPPLY		
For standard and miniature purifiers	110 VAC	PS24VDC-CE
	230 VAC	PS24VDC-CE-220
REPLACEMENT GETTER ASSEMBLY		
For standard purifier only		I-23572HP2

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GAS PURIFICATION

Hydrogen Purifiers from VICI Metronics

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium
 - Standard
 - Heated
- Hydrogen
 - Standard
 - Heated
- Methane
- Nitrogen

Standard

Heated

Specialized purifiers

Contaminant traps

- Reduce gas impurities from high PPM to low PPB levels
- Decrease baseline noise and increase GC/MS sensitivity
- Replace three traps with one purifier

Gas purification is critical to GC performance. Several types of contaminants are detrimental – notably moisture, hydrocarbons, and oxygen. VICI Metronics gas purifier modules are designed to be placed in-line with the GC carrier or detector gas supply to remove these contaminants from the analytical gases prior to their entering the GC.

VICI Metronics gas purifiers dramatically reduce contaminant levels and absorb a greater variety of contaminants than other gas purification products. Gas purification is optimized by a multiple bed format. Each bed functions at a lower contaminant concentration, resulting in a series of contaminant concentration gradients across the length of the gas purifier.

See Illustration. >



Fitting size	Length	Product No.
1/8"	22.5"	P200-1
1/4"	22.5"	P200-2

MORE INFORMATION

- Contact us to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purify
- Table of PPB at outlet for six typical contaminants
- Printable data sheet
- MSDS

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

SAFETY NOTE

Not to be used for purification of oxygen

GAS PURIFICATION

Methane Purifiers from VICI Metronics

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium
- Standard
- Heated
- Hydrogen
- Methane
- Nitrogen

Standard

Heated

Specialized purifiers

Contaminant traps

- Reduce gas impurities from high PPM to low PPB levels
- Decrease baseline noise and increase GC/MS sensitivity
- Replace three traps with one purifier

Gas purification is critical to GC performance. Several types of contaminants are detrimental – notably moisture, hydrocarbons, and oxygen. VICI Metronics gas purifier modules are designed to be placed in-line with the GC carrier or detector gas supply to remove these contaminants from the analytical gases prior to their entering the GC.

VICI Metronics gas purifiers dramatically reduce contaminant levels and absorb a greater variety of contaminants than other gas purification products. Gas purification is optimized by a multiple bed format. Each bed functions at a lower contaminant concentration, resulting in a series of contaminant concentration gradients across the length of the gas purifier.

See Illustration. >



Fitting size	Length	Product No.
1/8"	22.5"	P500-1
1/4"	22.5"	P500-2

MORE INFORMATION

- Contact us to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purify
- Table of PPB at outlet for six typical contaminants
- Printable data sheet
- MSDS

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

SAFETY NOTE

Not to be used for purification of oxygen

SEE ALSO

- Purifier for CI/MS

GAS PURIFICATION

Nitrogen Purifiers

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium
- Standard
- Heated
- Hydrogen
- Methane
- Nitrogen

Standard

Heated

Specialized purifiers

Contaminant traps

Nitrogen purifier modules from VICI Metronics

Purifiers from VICI Metronics are designed to go in-line with the carrier or detector gas supply. These include models which were **original equipment gas purifiers** for the Agilent Mass Spec and LC Mass Spec.

Product Information



Heated nitrogen purifiers from VICI Valco Instruments

Also available in a compact miniature version, these **heated nitrogen purifiers** are the only ones which remove methane. For applications which can tolerate methane, unheated **Metronics nitrogen purifiers** offer an economical gas purification option.

Product Information



GAS PURIFICATION

Nitrogen Purifiers from VICI Metronics

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium
- Hydrogen
- Methane
- Nitrogen

Standard

Heated

Specialized purifiers

Contaminant traps

- Original equipment in Agilent® Mass Spec and LC Mass Spec
- Reduce gas impurities from high PPM to low PPB levels
- Decrease baseline noise and increase GC/MS sensitivity
- Replace three traps with one purifier

Gas purification is critical to GC performance. Several types of contaminants are detrimental – notably moisture, hydrocarbons, and oxygen. VICI Metronics gas purifier modules are designed to be placed in-line with the GC carrier or detector gas supply to remove these contaminants from the analytical gases prior to their entering the GC.

VICI Metronics gas purifiers dramatically reduce contaminant levels and absorb a greater variety of contaminants than other gas purification products. Gas purification is optimized by a multiple bed format. Each bed functions at a lower contaminant concentration, resulting in a series of contaminant concentration gradients across the length of the gas purifier.

See illustration. >

Fitting size	Length	Product No.
1/8"	22.5"	P300-1
1/4"	22.5"	P300-2*

* Original equipment for Agilent Mass Spec and LC Mass Spec (Agilent part# G1946-80047)



MORE INFORMATION

- Contact us to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purky
- Table of PPB at outlet for six typical contaminants
- Printable data sheet
- MSDS

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

SAFETY NOTE

Not to be used for purification of oxygen

SEE ALSO

- Valco heated nitrogen purifiers
- Nitrogen purifier for LC/MS
- Purifier for nitrogen from a nitrogen generator

GAS PURIFICATION

Heated Nitrogen Purifiers from VICI Valco Instruments

Overview

Gas specific purifiers

Specialized purifiers

- For nitrogen for LC/MS
- For nitrogen generators
- For chemical ionization MS
- For liquid carbon dioxide
- Heated helium purifiers
- Heated nitrogen purifiers

Contaminant traps

Note: These heated nitrogen purifiers are the only ones which remove methane. For applications which can tolerate methane, unheated Metronics nitrogen purifiers offer an economical option.

Carrier gas purity is essential in any application requiring extreme sensitivity. Impurities limit detector sensitivity and can even destroy capillary columns. The Valco nitrogen purifier provides "point-of-use" purification to sub-ppm levels of reactive gaseous impurities.

Based on 10 ppm total inlet impurities, outlet impurities are less than 10 ppb for H₂O, H₂, O₂, NO, NH₃, CO, CO₂, and CH₄. Other impurities removed include CF₄, CCl₄, SiH₄, and light hydrocarbons. He, Ne, Ar, Kr, Xe, and Rn are not removed.

The purification substrate is a non-evaporable heat-activated gettering alloy. This stable alloy is contained in a welded assembly, so the purifiers can be used safely in industrial applications with minimal precautions. When the getter is heated, the oxide film on the particle surface is eliminated, allowing nitrogen to diffuse into the bulk of the getter particles. The purifier features a self-regulating design which maintains the getter material at the optimum temperature and eliminates the possibility of thermal runaway.

The miniature version is designed to be installed in a gas chromatograph's flow path immediately upstream of the injector. The NPM will remove any contaminants introduced by flow controllers, elastomeric tube seals, pressure regulators, crude traps, or other system components that are not completely clean and leak-tight.



Purifiers include a universal power supply.

Description	Voltage	Product No.
HEATED NITROGEN PURIFIERS		
Standard size	110 VAC	NP2
	230 VAC	NP2-220
Miniature	110 VAC	NPM
	230 VAC	NPM-220
REPLACEMENT POWER SUPPLY		
For standard and miniature purifiers	110 VAC	PS24VDC-CE
	230 VAC	PS24VDC-CE-220
REPLACEMENT GETTER ASSEMBLY		
For standard purifier only		I-23572NP2

MORE INFORMATION

- Declaration of CE compliance
- User manual
- User manual for miniature version

MAX OPERATING PRESSURE
1000 psig

DISPOSING OF SPENT GETTER CARTRIDGES
Contact VICI to obtain a return authorization number. The packaged getter cartridge should be clearly marked "Traps for Disposal".

SEE ALSO

- VICI Metronics unheated nitrogen purifier modules

Top

GAS PURIFICATION

Specialized Purifiers

Overview

Gas specific purifiers

Specialized purifiers

- For nitrogen for LC/MS
- For nitrogen generators
- For chemical ionization MS
- For liquid carbon dioxide
- Heated helium purifiers
- Heated nitrogen purifiers

Contaminant traps

For nitrogen for LC/MS

VICI Metronics nitrogen purifiers are optimized for the high flow nitrogen gas supply used on LC/MS instruments. A nitrogen purifier module placed in line with the nitrogen gas delivery system removes moisture, hydrocarbons, halocarbons, and oxygen, retaining them for the operating life of the purifier.

[Product information](#)

For nitrogen generators

The purifier for nitrogen generators reduces most contaminant levels from many parts per million to levels that are below the lower limit of analytical detection, and absorbs a larger number and a greater variety of contaminants than other commonly used adsorptive materials.

[Product information](#)

For chemical ionization MS

In response to the increase in commercial availability of instrumentation for Chemical Ionization Mass Spectroscopy, VICI Metronics has developed a purifier designed specifically for the unique demands of the field.

[Product information](#)

For liquid carbon dioxide

VICI Metronics has developed a CO₂ purification technology which can take Coleman grade CO₂ and produce SFC/SFE grade CO₂ at the point of use, resulting in significant cost savings.

[Product information](#)

Heated helium and nitrogen purifiers

The purification substrate in VICI Valco gas purifiers is a non-evaporable heat-activated gettering alloy. This stable alloy is contained in a welded assembly, so the purifiers can be used safely in industrial applications with minimal precautions. The miniature version of each purifier is designed to be installed in a GC's flow path immediately upstream of the injector.

[Helium purifiers](#)
[Nitrogen purifiers](#)

[Top ▲](#)

GAS PURIFICATION

Nitrogen Purifier for LC/MS Applications from VICI Metronics

Overview

Gas specific purifiers

Specialized purifiers

- For nitrogen for LC/MS

- For nitrogen generators

- For chemical ionization MS

- For liquid carbon dioxide

- Heated helium purifiers

- Heated nitrogen purifiers

Contaminant traps

- Designed to purify nitrogen gas produced from liquid nitrogen
- Decrease baseline noise and increase GC/MS sensitivity
- Reduce background noise and ghost peaks

VICI Metronics nitrogen purifiers are optimized for the high flow nitrogen gas supply used on LC/MS instruments. Several types of contaminants are detrimental to LC/MS performance – notably moisture, hydrocarbons, and halocarbons. A Metronics nitrogen purifier module placed in line with the nitrogen gas delivery system removes these contaminants, retaining them for the operating life of the purifier.

The purifier reduces most contaminant levels from many parts per million to levels that are below the lower limit of analytical detection, and absorbs a larger number and a greater variety of contaminants than other commonly used adsorptive materials. In particular, the Metronics nitrogen purifier has been shown to out perform the carbon-based hydrocarbon traps previously used for this application.

Fitting size	Length	Product No.
1/8"	22.5"	P310-1
1/4"	22.5"	P310-2



MORE INFORMATION

- **Contact us** to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- **Fittings and gas purify**
- **Printable data sheet**
- **MSDS**

SPECIFICATIONS

Max inlet pressure:

1000 psi;

Max flow:

12 L/min

SAFETY NOTE

This purifier is designed to be used with nitrogen gas produced from liquid nitrogen, or with nitrogen gas containing less than 500 ppm of oxygen. If this product is used on a stream with a high oxygen content, it may get hot enough to cause injury. Use our Purifier for Nitrogen Generators to purify high oxygen content nitrogen.

GAS PURIFICATION

Purifier for Nitrogen Produced by Nitrogen Generators

Overview

Gas specific purifiers

Specialized purifiers

- For nitrogen for LC/MS
- For nitrogen generators
- For chemical ionization MS
- For liquid carbon dioxide
- Heated helium purifiers
- Heated nitrogen purifiers

Contaminant traps

- Specifically designed to purify nitrogen produced from nitrogen generators
- Decrease baseline noise and increase GC/MS sensitivity
- Reduce background noise and ghost peaks

VICI Metronics nitrogen purifiers are optimized for the high flow nitrogen gas supply used on LC/MS instruments. Several types of contaminants are detrimental to LC/MS performance – notably moisture, hydrocarbons, and halocarbons. A Metronics nitrogen purifier module placed in line with the nitrogen gas delivery system removes these contaminants, retaining them for the operating life of the purifier.

The purifier reduces most contaminant levels from many parts per million to levels that are below the lower limit of analytical detection, and absorbs a larger number and a greater variety of contaminants than other commonly used adsorptive materials. In particular, the Metronics nitrogen purifier has been shown to outperform the carbon-based hydrocarbon traps previously used for this application.

Fitting size	Length	Product No.
1/8"	22.5"	P350-1
1/4"	22.5"	P350-2



MORE INFORMATION

- **Contact us** to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- **Fittings and gas purify**
- **Printable data sheet**
- **MSDS**

SPECIFICATIONS

Max inlet pressure:
1000 psi; Max flow:
12L/min

GAS PURIFICATION

Purifier for CI/MS Applications from VICI Metronics

Overview

Gas specific purifiers

Specialized purifiers

- For nitrogen for LC/MS
- For nitrogen generators
- For chemical ionization MS
- For liquid carbon dioxide
- Heated helium purifiers
- Heated nitrogen purifiers

Contaminant traps

- 1/8" compression fittings
- 1000 psig pressure rating
- Compatible with most CI gases
- Welded stainless steel body

The use of Chemical Ionization Mass Spectroscopy has increased in recent years, with instrumentation to perform this sensitive analytical technique now available commercially. In response to this growth, VICI Metronics has developed a gas purifier designed specifically for the unique demands of chemical ionization.

Several types of contaminants are detrimental to CI performance – notably moisture, heavy hydrocarbons, halocarbons, and oxygen. A Metronics CI purifier module placed in line with the gas delivery system removes these contaminants, reducing levels from many parts per million to levels that are below the lower limit of analytical detection, and retains them for the operating life of the purifier. (Recommended replacement is after three bottles of gas, or if detector baseline drift and noise become apparent.)

A very high capacity has been engineered into the gas purifier by using several different materials for gross contaminant removal and additional materials for the removal of trace amounts of the contaminants. Three separate adsorption chemistries are incorporated into the operating design of the gas purifier to ensure the optimal capacity and efficiency. This successive bed format insures high capacity as well as a very high efficiency for the removal of contaminants that can be present in even high purity methane.

See illustration. >



MORE INFORMATION

- Contact us to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purifier
- Printable data sheet

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Max recommended flow:
500 mL/min

Fitting size	Length	Product No.
1/8"	22.5"	P500-1

GAS PURIFICATION

Liquid Carbon Dioxide Purifier from VICI Metronics

Overview

Gas specific purifiers

Specialized purifiers

- For nitrogen for LC/MS
- For nitrogen generators
- For chemical ionization MS
- For liquid carbon dioxide
- Heated helium purifiers
- Heated nitrogen purifiers

Contaminant traps

- Produce SFC/SFE grade CO₂ from Coleman grade CO₂
- Remove oxygen, moisture, sulfur compounds, halocarbons, and most hydrocarbons

In applications such as environmental testing, food analysis, and pigment analysis, the unique solvating properties of CO₂ at its triple point (super-critical stage) are exploited in the extraction of compounds from difficult matrices. Since any contaminants that may be present in the CO₂ will be concentrated in the sample, only ultra-pure CO₂ is acceptable for this type of work.

VICI Metronics has developed a new CO₂ purification technology (patent pending) which can take Coleman grade CO₂ and produce SFC/SFE grade CO₂ at the point of use, resulting in significant cost savings. Removal of oxygen, moisture, sulfur compounds, halocarbons, and most hydrocarbons are all accomplished with this unified CO₂ purification technology.

Fitting size	Length	Product No.
1/8"	22.5"	P700-1
1/4"	22.5"	P700-2

MORE INFORMATION

- **Contact us** to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.
- **MSDS**

SEE ALSO

- Carbon dioxide gas purifiers

Top ▲

GAS PURIFICATION

Contaminant Traps from VICI Metronics

Overview

Gas specific purifiers

Specialized purifiers

Contaminant traps

- Hydrocarbons

- Mercury

- Moisture

- Oxygen

- Sulfur

- Ultra-high capacity for the contaminant of interest
- Application specific, gas independent
- Capable of higher flow rates than our gas specific purifiers

For applications with a single contaminant of interest, high capacity contaminant specific traps are your best option, since they generally have four times as much capacity for the specific contaminant as a purifier. This translates to a capacity that exceeds twelve standard type "A" tanks of gas or the equivalent of over 300,000 liters of gas at standard temperature and pressure.



Trapped contaminant	Fitting size	Length	Product No.
Hydrocarbons	1/8"	22.5"	T200-1
	1/4"	22.5"	T200-2
Mercury	1/8"	12"	T700-1
	1/4"	12"	T700-2
Moisture	1/8"	22.5"	T100-1
	1/4"	22.5"	T100-2
Oxygen	1/8"	22.5"	T300-1
	1/4"	22.5"	T300-2
Sulfur	1/8"	12"	T400-1
		22.5"	T401-1
	1/4"	12"	T400-2
		22.5"	T401-2

MORE INFORMATION

- Contact us to find out more about VICI Metronics contaminant traps. North American customers can call toll-free (877) 737-1887.
- Fittings and gas purky
- Printable data sheet
- MSDS
 - T-100
 - T-200
 - T-300
 - T-400
 - T-700

SPECIFICATIONS

Max Inlet pressure:
1000 psi;
Recommended flow:
500 mL/min

GAS PURIFICATION

Hydrocarbon Traps from VICI Metronics

Overview

Gas specific purifiers

Specialized purifiers

Contaminant traps

- Hydrocarbons
- Mercury
- Moisture
- Oxygen
- Sulfur

- Removes non-methane hydrocarbons from any non-reactive gas
- Also removes halocarbons

The proprietary sorbent materials used in our high capacity hydrocarbon trap far out-perform the standard materials used for this application. The sorbent is extremely hydrophobic, so no capacity is lost in a moist gas stream. Studies have shown that this material is the most efficient and has the highest capacity for non-methane hydrocarbons of any sorbent material commercially available.



Fitting size	Length	Product No.
1/8"	22.5"	T200-1
1/4"	22.5"	T200-2

MORE INFORMATION

- **Contact us** to find out more about VICI Metronics contaminant traps. North American customers can call toll-free (877) 737-1887.
- **Fittings and gas purify**
- **Printable data sheet**
- **MSDS**

SPECIFICATIONS

Max inlet pressure:
1000 psi;
Recommended flow:
500 mL/min





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GAS PURIFICATION

Fittings and Gas Purity

Overview

Gas specific purifiers

- Air
- Carbon dioxide
- Helium
- Hydrogen
- Methane
- Nitrogen

Specialized purifiers

Contaminant traps

Basically, the point to remember is "the fewer the better". Every connection in your gas delivery system has the potential for leaks; the more fittings you have, the greater the potential. In the illustration below, several gas purification options are depicted:

- A. The Metronics gas specific purifier minimizes the number of fittings. Total fittings: 2
- B. The "Manifold System" has two compression fittings for the system and one organic O-ring seal for each cartridge. Total fittings: at least 5
- C. A typical "Contaminant Trap" configuration has several components. Before the gas supply even enters the GC there are at least 4 modules. Total fittings: at least 8



MORE INFORMATION

- Contact Metronics to find out more about VICI Metronics gas purifiers. North American customers can call toll-free (877) 737-1887.