



## PUR-Gas™ In-Line Purifier Systems



Easy to replace.  
No tools required.  
No contamination.



### Description

The PUR-Gas™ Purifier product line has been expanded to offer a range of high-performance gas purification products in the traditional “In-Line” (trap) design that is commonly utilized for point-of-use purification within the laboratory environment. The “In-Line” purifier configuration allows the purifier to be installed easily into your gas delivery lines\* or mounted on the wall with mounting clips if bench-top space is limited. The unique “End Connectors” allow you to remove the spent purifier without tools and install a replacement in just seconds. During replacement of the purifiers, check valves within the “End Connectors” automatically seal the gas delivery lines to the atmosphere, eliminating diffusion of potential contaminants into the gas stream and maintaining existing gas purity. Similar to the PUR-Gas™ Cartridge Purifier Systems, the PUR-Gas™ “In-Line” Purifiers provide superior contaminant removal to produce 99.9999% purity.

\*most purifier positions require no additional support

### Applications

- Point-of-use purification of all gases utilized with the operation of an FID equipped GC.
- Ideal for purification of carrier gases used with GC/MS, ECD, PID and NPD detectors.
- Removal of hydrocarbons and moisture from FID fuel gases.
- Purification of Nitrogen for LC/MS instruments.

### Design Features/Components

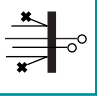
- End Connectors eliminate “tools” typically required to install purifier replacements.
- Replacement purifiers can be installed within seconds, minimizing instrument downtime.
- Check valves integral to “End Connectors” prevent introduction of contaminants into gas delivery lines.
- Removal of hydrocarbons, oxygen and moisture can be performed within a single purifier filter.
- Visual “End Point” Indicator available for Moisture and Oxygen breakthrough optimizes purifier performance and signals time for replacement.

### Specifications

Maximum Operating Pressure:	160 psig
Maximum Flow Rate:	25 L/min
Housing Material:	Stainless Steel (std all models) Glass w/Polycarbonate Casing (Indicating model only)
Dimensions:	<b>Standard Models</b> 1.26" dia x 7.9" L (w/o End Connectors) 1.26" dia x 10" L (with End Connectors)
End Connectors:	1/8" compression, Brass or Stainless Steel 1/4" compression, Brass or Stainless Steel
Weight:	2.65 lbs (Standard Models)

### Purifier Cartridge Capacity

PUR-Gas™ In-Line Model	Gas Purity (outlet)	Carrier Gas	Visual Indicator	H <sub>2</sub> O Capacity (gr.)	O <sub>2</sub> Capacity (ml.)	Hydrocarbon Capacity (gr.)	Estimated Life Span
Moisture Trap	> 6.0	He H <sub>2</sub>	No	21	N.A.	N.A.	> 2 years
Oxygen Trap	> 6.0	He	No	N.A.	3000	N.A.	> 2 years
Hydrocarbon Trap	> 6.0	He H <sub>2</sub> Air	No	N.A.	N.A.	36 (as n-butane)	> 2 years
Triple Indicating Trap (moisture + oxygen + hydrocarbons)	> 6.0	He	Yes	3	400	5 (as n-butane)	> 1 year
Combi Trap (moisture + oxygen + hydrocarbons)	> 6.0	He H <sub>2</sub> Air	No	10	N.A.	18 (as n-butane)	> 2 year
Triple Trap (moisture + oxygen + hydrocarbon)	> 6.0	He	No	6	1000	12 (as n-butane)	> 2 year



# 338 PUR-Gas™ In-Line Purifier Systems (continued)

## In-Line Purifier Selection and Application Configurations (refer to Selection Chart & Application Diagram below)

A clean gas delivered to your analytical instrument supports the ability to produce consistent and reliable results. This also helps to lengthen column life and minimize background detector “noise.” Selecting the proper PUR-Gas™ In-Line Purifiers for your gas application ensures protecting your analytical instruments from exposure to harmful contaminants, which can negatively affect the accuracy of the data and create operating problems. Purifier capacity is a measure of the amount of contaminant a purifier will remove prior to reaching its saturation point; which depends on the adsorbent’s performance and volume within the purifier. Ideally, purifiers need to be replaced before they become fully saturated. Purifier replacements are made by either replacing them at predetermined time intervals or by some form of visual indication if the purifier has this feature.

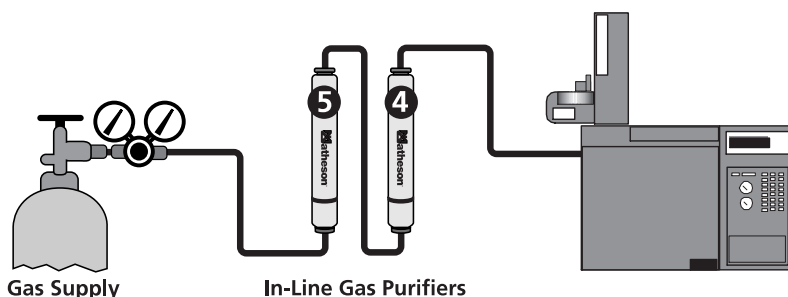
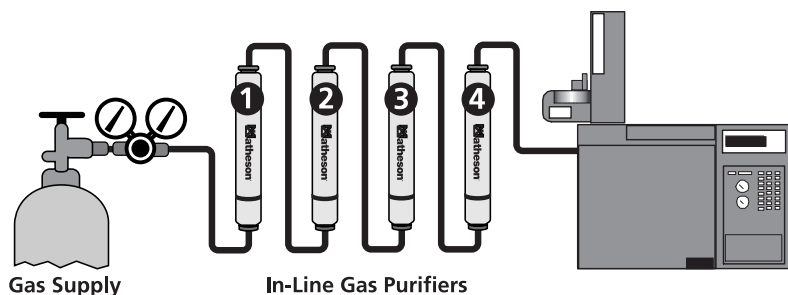
All gas purifiers should be installed in the “vertical” position to optimize contaminant removal and prevent channeling. “Channeling” occurs when a purifier is installed in the horizontal position and there is potential for the adsorbent material to settle within the purifier housing and the gas stream then tends to pass over the adsorbent material rather than through it; thus lowering the contaminant removal efficiency of the purifier.

Matheson Tri-Gas offers several models ideally suited to serve a variety of analytical applications. Use the Selection Chart and Application Diagram below to determine which purifier models are best suited to your application. If you need assistance in selecting a purifier for your application, please call a Matheson Equipment Customer Service Representative at 800-828-4313.

### Gas Purifier Selection Chart

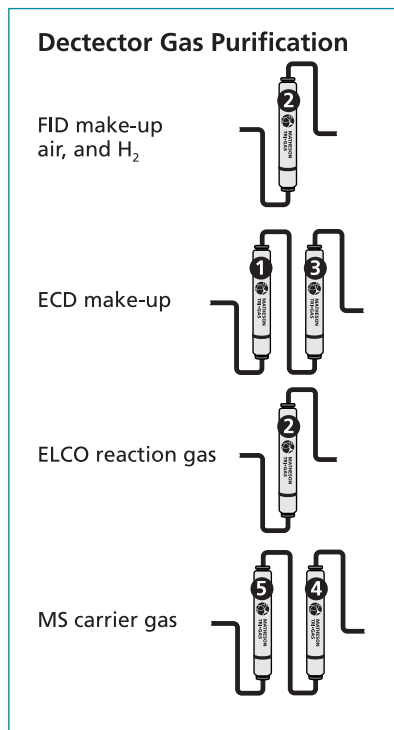
Analytical Instrument/System	Type Detector	Gas Stream	Recommended PUR-Gas™ Purifier
Capillary Column GC	ALL	Carrier Gas	Triple; Moisture, Oxygen and Hydrocarbon
	FID	Make-Up	Hydrocarbon
	FID	Air	Moisture and Hydrocarbon
	FID	Hydrogen	Moisture and Hydrocarbon
	ECD	Make-Up	Triple; Moisture, Oxygen and Hydrocarbon
	ELCD	Reaction Gas	Hydrocarbon
Packed Column GC	ALL	Carrier Gas	Triple; Moisture, Oxygen and Hydrocarbon

## Application Diagram Carrier and FID Gas Purification



### Purifier Selection Key:

- ① = Moisture Trap
- ② = Hydrocarbon Trap
- ③ = Oxygen Trap
- ④ = Indicating Oxygen Trap
- ⑤ = Combination Trap for moisture, oxygen, and hydrocarbon removal



Filters & Purifiers



## PUR-Gas™ In-Line Purifier Systems (continued)

### Install and Replace Traps without Tools and in Seconds!



1  
Align End Connector  
into Purifier



2  
Screw to Tighten

#### Ordering Information

##### STANDARD IN-LINE "TRAP" Models

Model No.	Description
PUR-IL-MT1	PUR-Gas In-Line Moisture (H <sub>2</sub> O) Trap
PUR-IL-OT1	PUR-Gas In-Line Oxygen (O <sub>2</sub> ) Trap
PUR-IL-HT1	PUR-Gas In-Line Hydrocarbon (HC) Trap
PUR-IL-OMT1	PUR-Gas In-Line Combi Oxygen/Moisture Trap
PUR-IL-TRT1	PUR-Gas In-Line Triple Oxygen/Moisture/HC Trap
PUR-IL-ITRT1	PUR-Gas "Breakthrough" In-Line (He filled) Triple Oxygen/Moisture/HC Indicator*
PUR-IL-TRT2	PUR-Gas In-Line Triple Oxygen/Moisture/HC Trap (He filled)

\* "Indicating" Traps provide visual indication for determining the optimum time for replacement and maximizing operating effectiveness. (a) The housing for the "Indicating" In-Line Triple Trap is made from glass encased with a polycarbonate coating; all other in-line trap housings are stainless steel material and are "Non-Indicating." (b) The term "He filled" applies to those specific traps that have been purged and filled internally with helium gas; all remaining trap models are filled with argon gas and should be purged after installation.

##### "END-to-END" Tube Connectors ("1" Set required for each In-Line Purifier purchased)

Model No.	Description
PUR-IL-CBR2	1/8" Brass In-Line Connector (set of 2)
PUR-IL-CBR4	1/4" Brass In-Line Connector (set of 2)
PUR-IL-CSS2	1/8" Stainless Steel In-Line Connector (set of 2)
PUR-IL-CSS4	1/4" Stainless Steel In-Line Connector (set of 2)
PUR-IL-DTCSS4	1/4" Stainless Steel SERIES In-Line Connector (qty 1)**

\*\*The "SERIES" In-Line Connector is a single connector ONLY used for connecting '2' or more traps in a direct END-to-END series installation arrangement where it is desired to have gas flow from one trap immediately (sequentially) into a second (or even third) trap connected in "SERIES" with the first trap.

##### OPTIONAL & REPLACEMENT Parts

Model No.	Description
PUR-IL-WMC4	Wall-Mount Clamp Set (for Standard Models)
PUR-IL-ORS10	Spare O-Ring Set for In-Line Connectors (pkg of 10)

##### PRODUCT APPLICATION RECOMMENDATIONS:

1. END-to-END Connectors are primarily intended for use with stainless steel and brass tubing; connections to plastic tubing can be made; however, it is recommended that a metal insert be utilized at each inlet/outlet connection point where plastic tubing connections are required.
2. The proper installation orientation for all purifiers is in the "vertical" position.
3. Mounting screws for Wall-Mount Clamps are not included.



In-line Purifier with  
Stainless Steel Housing



1/8" or 1/4" Fittings  
on End Connectors



In-Line Triple Purifier  
with Visual Indication



In-Line Purifier with  
Wall-Mount Clips