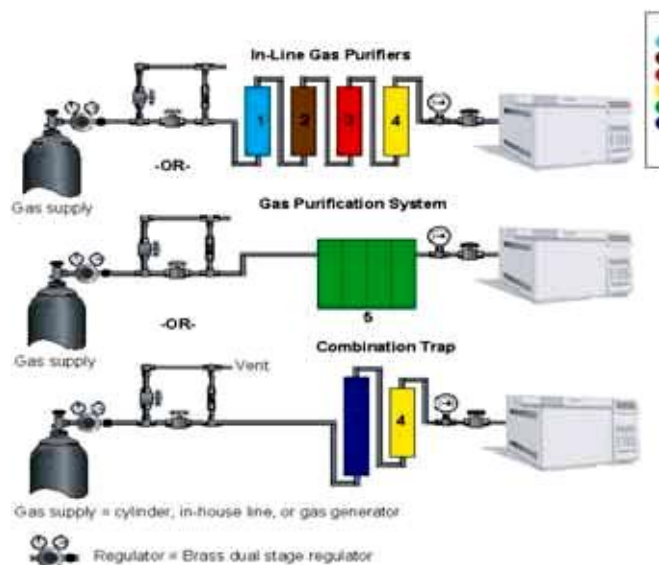


GC Supplies

Gas Management—Moisture Removal Traps

Carrier Gas Purification Chart



Key:

- 1 Moisture Trap
- 2 Hydrocarbon Trap
- 3 Oxygen Trap
- 4 Indicating Oxygen Trap
- 5 Gas Purification System
- 6 Combination Trap for moisture, oxygen, and hydrocarbon removal

Detector Gas Purification

FID make-up, air, and H₂

ECD make-up

ELCD reaction gas

MS carrier gas



Economy Indicating Moisture Traps Continued

Molecular Sieve 13X (MT Series)

The preferred adsorbent for GC gas drying. Blue indicating sieve turns buff at 20% relative humidity.

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (g)	Performance (ppb)	Price
MT120-2	120	1/8	21.6	20	
MT120-4	120	1/4	21.6	20	
MT200-2	200	1/8	36.0	18	
MT200-4	200	1/4	36.0	18	
MT400-2	400	1/8	72.0	14	
MT400-4	400	1/4	72.0	14	

Molecular Sieve 5! (MT-D Series)

High moisture capacity and simultaneously removes hydrogen sulfide and oil. Indicating Drierite changes dramatically from bright blue to pink as the gas stream approaches 40% relative humidity.

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (g)	Performance (ppb)	Price
MT120-2-D	120	1/8	21.6	22	
MT120-4-D	120	1/4	21.6	22	
MT200-2-D	200	1/8	36.0	20	
MT200-4-D	200	1/4	36.0	20	
MT400-2-D	400	1/8	72.0	16	
MT400-4-D	400	1/4	72.0	16	

Silica Gel 40 (MT-S Series)

Highest moisture capacity adsorbent. Adsorbs as much as 40% of its weight in water. High affinity for hydrocarbons. Blue indicating gel turns from a deep blue to pale pink at 40% relative humidity.

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (g)	Performance (ppb)	Price
MT120-2-S	120	1/8	31.5	40	
MT120-4-S	120	1/4	31.5	40	
MT200-2-S	200	1/8	52.5	39	
MT200-4-S	200	1/4	52.5	39	
MT400-2-S	400	1/8	105.0	39	
MT400-4-S	400	1/4	105.0	39	

Adsorbent Refill and Mounting Brackets for Economy Traps

Cat. No.	Description	Price
MSR-1	MT series, adsorbent refill, 1 pint	
MSR-2	MT-D series, adsorbent refill, 1 pint	
SGR	MT-S series, adsorbent refill, 1 pint	
MC-1	Mounting clip for 120 and 200cc traps	
UMC-4	Mounting clip for 400cc traps	

Economy Indicating Moisture Traps

- Three refillable sizes and three different packings •
- Both inlet and outlet connectors are equipped with stainless steel frits to prevent particulates from entering the gas stream
- Mixed packing bed makes improper installation impossible
- Easily refillable
- Tested to 150 psi (helium)

Agilent Indicating Moisture Traps are designed to remove water, oil and organics from gases commonly employed in, but not limited to, gas chromatography. Refillable moisture traps are constructed from Lexan brand polycarbonate tubing. Lightweight, chemically resistant, and of superior strength when compared to traps manufactured of acrylic.

GC Supplies

Moisture Removal Traps

Outlet Gas has less
than 1% inlet
concentration

Polishing Zone
Active Desiccant

Mass Transfer Zone
Gas at this point has less
than 5% of the inlet
concentration

Scrubber Zone
Desiccant is at equilibrium
with inlet gas adsorbent
concentration

Inlet Gas



Glass Indicating Moisture Traps

- Heavy wall borosilicate glass tube—no moisture diffusion
- Molecular Sieve 13X and a band of indicating Molecular Sieve 4!

Molecular sieves differ from all other commercially available adsorbents, as they have an extremely high adsorption capacity for water and polar compounds even at relatively low concentrations. The color change takes place in the middle of the trap bed, giving ample warning. In addition to the inherent qualities of the sieve material, we treat the bed material under high vacuum and heat to ensure maximum scrubbing efficiency and capacity.

Glass Indicating Moisture Traps (GMT and LGMT Series)

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (g)	Performance (ppb)	Price
GMT-2GC-HP	70	1/8	11.4	7	
GMT-4GC-HP	70	1/4	11.4	7	
GMT-2-HP	100	1/8	16.3	6	
GMT-4-HP	100	1/4	16.3	6	
LGMT-2-HP	250	1/8	40.09	6	
LGMT-4-HP	250	1/4	40.09	6	

Adsorbent Refill and Mounting Brackets for Glass Traps

Cat. No.	Description	Price
GMSR	GMT and LGMT adsorbent refill, 250cc	
UMC-3	Mounting clip for 70 and 100cc traps	
UMC-4	Mounting clip for 250cc traps	



Moisture Removal S-Traps

- Contains Molecular Sieve 5A, 40/60 mesh

This trap can be reconditioned by heating at a minimum of 350°C, with flow for 6 hours.

Cat. No.	Description	Price
5060-9084	Moisture "S" trap, metal casing, 1/8" fitting	



Big Moisture Traps

- Ideal when several instruments are plumbed from a single gas source
- One piece of heavy-walled aluminum tube, this one piece design eliminates potential leaks
- Equipped with sintered SS frits to prevent particulate contamination
- Up to 250 psi

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (g)	Performance (ppb)	Price
BMT-2	750	1/8	130	5	
BMT-4	750	1/4	130	5	

Adsorbent Refill and Mounting Bracket for Big Traps

Cat. No.	Description	Price
BMSR-1	Big moisture refill, (enough for 2 refills)	
UMC-5-2	Big mounting clip, 2/pk	

High Pressure SS Moisture Traps

- Molecular Sieve 13X
- Constructed from seamless 316 SS
- Rated to 4,000 psi
- Equipped with sintered SS frits to prevent particulate contamination

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (g)	Performance (ppb)	Price
MT-2-SS	200	1/8	36.0	18	
MT-4-SS	200	1/4	36.0	18	

Adsorbent Refill and Mounting Bracket for High Pressure Traps

Cat. No.	Description	Price
BMSR-1	Big moisture refill, 1500cc	
MC-1	Mounting clip for 200cc traps	

GC Supplies

Oxygen Traps/Hydrocarbon Traps

Indicating Oxygen Trap

- Reduces oxygen to less than 1 ppb
- Environmentally safe



This trap actually removes the oxygen rather than converting it to another form of contamination.

Oxygen and a wide range of oxides react with the activated bed material to

form a manganese oxide. This reaction results in a progressive and dramatic color change, from light green in the adsorbent's active state to deep brown as oxygen saturation occurs. The indicating oxygen trap is designed to be used in conjunction with any of our high capacity, non-indicating oxygen traps. When properly installed downstream from the non-indicating trap, the indicating oxygen trap provides a visual indication of oxygen breakthrough BEFORE contamination reaches sensitive system components.

Unlike adsorbent materials utilized in competitive products, our indicating media can be exposed to air and water in virtually any quantity without resulting in an exothermic reaction. The spent product is nontoxic, nonhazardous, nonflammable, and nonreactive. The high impact Lexan shield prevents "lab catastrophes" if the trap is exposed to pressure beyond its stated pressure limit. Safe for land fill refuse.

Indicating Oxygen Traps (IOT and LIOT Series)

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (mg)	Performance (ppb)	Price
IOT-2-HP	30	1/8	30.0	2	
IOT-4-HP	30	1/4	30.0	2	
LIOT-2	150	1/8	100.0	1	
LIOT-4	150	1/4	100.0	1	

Economy Non-Indicating Oxygen Traps (OT1 Series)

OT1-2	70	1/8
OT1-4	70	1/4

Mounting Brackets for Oxygen Traps

Cat. No.	Description	Price
UMC-2	Mounting clip for IOT traps	
UMC-3	Mounting clip for LIOT traps	
MC-1	Mounting clip for OT1 traps	



Big Oxygen Traps



- Ideal when several instruments are plumbed from a single gas source
- One piece of heavy-walled aluminum tube design eliminates potential leaks
- Equipped with sintered SS frits to prevent particulate contamination
- Up to 250 psi

Big Oxygen Traps (BOT Series)

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (mg)	Performance (ppb)	Price
BOT-2	750	1/8	3400	1	
BOT-4	750	1/4	3400	1	

Mounting Bracket for Big Traps

Cat. No.	Description	Price
UMC-5-2	Big mounting clip, 2/pk	

Big Trap Dimensions:

Length: 17"

Diameter: 2 3/8"

Hydrocarbon Traps

- Remove organics from carrier gases, air and hydrogen •
- Impregnated carbon filter media
- Refillable

Hydrocarbon Traps (HT200 Series)

Cat. No.	Description	Fitting	Price
HT200-2	Hydrocarbon trap, 200cc	1/8"	
HT200-4	Hydrocarbon trap, 200cc	1/4"	

Capillary Grade Hydrocarbon Traps (HT3 Series)

Purged with ultra high purity helium

HT3-2	Hydrocarbon trap, 100cc	1/8"
HT3-4	Hydrocarbon trap, 100cc	1/4"

High Pressure SS Hydrocarbon Traps

Constructed from seamless 316 stainless steel, rated to 4000 psi.

HT-2-SS	SS Hydrocarbon trap, 200cc	1/8"
HT-4-SS	SS Hydrocarbon trap, 200cc	1/4"

Adsorbent Refill and Mounting Bracket for Hydrocarbon Traps

Cat. No.	Description	Price
ACR	Adsorbent refill, 1 pint	
MC-1	Mounting clip for hydrocarbon traps	

GC Supplies

Hydrocarbon Traps/Combination Traps



Big Hydrocarbon Traps

- Ideal when several instruments are plumbed from a single gas source
- One piece of heavy-walled aluminum tube design eliminates potential leaks
- Equipped with sintered SS frits to prevent particulate contamination
- Up to 250 psi

Big Hydrocarbon Traps (BHT Series)

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (g)	Performance (ppb)	Price
BHT-2	750	1/8	80*	15	
BHT-4	750	1/4	80*	15	

*80 grams of medium to heavy molecular weight hydrocarbons.

Adsorbent Refill and Mounting Bracket for Big Traps

Cat. No.	Description	Price
BACR	Adsorbent refill (enough for two refills)	
UMC-5-2	Big mounting clip, 2/pk	

Hydrocarbon Removal S-Traps



- Contains 40/60 mesh activated charcoal

This trap can be reconditioned by heating at a minimum of 350°C, with flow for 6 hours.

Cat. No.	Description	Price
5060-9096	Oxygen "S" trap, metal casing, 1/8" fitting	

Hydrocarbon/Moisture Traps

Our hydrocarbon/moisture traps offer you flexibility: refill your trap and remove extremely low levels of both moisture and hydrocarbons.

Hydrocarbon/Moisture Traps (HMT Series)

Cat. No.	Description	Fitting	Price
HMT200-2	Hydrocarbon/Moisture trap, 200cc	1/8"	
HMT200-4	Hydrocarbon/Moisture trap, 200cc	1/4"	

Adsorbent Refill and Mounting Bracket for HMT Series

Cat. No.	Description	Price
HCRMS	Adsorbent refill, 1 pint (enough for two refills)	
MC-1	Mounting clip for HMT series	

Oxygen/Moisture Traps

- Leak-free, one piece design
- Filter design: prevents channeling, promotes efficient scrubbing

Oxygen/moisture adsorbents team up to give you two functionalities in the same trap. Unlike some oxygen/moisture traps, these traps are disposable.

In addition to inert gases (nitrogen, helium, argon and krypton), the Agilent OT3 Trap treats streams of hydrogen, alkanes, alkenes, aliphatic hydrocarbon gases, low boiling aromatics, carbon dioxide, carbon monoxide, and argon-methane.

Why use Oxygen Traps?

Traces of oxygen in your carrier gas system can destroy a GC column, especially polar phases.

How does it work?

The Agilent OT3 Trap contains a highly active, metal-containing, scrubbing material in an inert, aluminum body. This material removes 500mL oxygen from a gas stream to less than 15ppb. Additionally, up to 2 grams of moisture can be removed by this trap without affecting the oxygen capacity.

Oxygen/Moisture Traps (OT3 Series)

Cat. No.	Size (cc)	Fitting (in.)	Removal Capacity (mg)	Performance (ppb)	Price
OT3-2	100	1/8	500	15	
OT3-4	100	1/4	500	15	

High Pressure SS Oxygen/Moisture Traps

Constructed from seamless 316 Stainless Steel, rated to 4000 psi.

OT-2-SS	200	1/8	20
OT-4-SS	200	1/4	20

Mounting Bracket for Oxygen/Moisture Combination Traps

Cat. No.	Description	Price
MC-1	Mounting clip for OT3 series	

LC/MS Nitrogen Gas Purifier

Can be used up to 15L/min for LC/MS applications

Cat. No.	Description	Fitting	Price
G1946-80047	LC/MS Nitrogen purifier, 100cc	1/8"	

GC Supplies

Combination Traps—Gas Specific



Agilent Big Universal Traps

Big Universal Traps utilize a layered, multi-adsorbent bed packing of the most effective, highest capacity adsorbent materials available today for the removal of oxygen, moisture, hydrocarbons, carbon dioxide and carbon monoxide from helium gas streams. The volume of the various adsorbent materials in the Big Universal Trap was developed through rigorous testing and evaluation in order to assure that breakthrough of the five major contaminant groups occurs as simultaneously as possible as each material achieves complete saturation.

One Big Universal Trap unit will easily purify the contents of 13 “K” size cylinders of 99.997% purity helium to a cumulative level of 100 parts per billion of O₂, H₂O, CO₂, CO and hydrocarbons at a flow rate of up to 8 L/min. All tube fittings are Swagelok brand stainless steel, fitted with 40 micron stainless steel frits for particulate control. Maximum pressure is 500 psi.

Big Universal Traps are ideal for any GC or GC/MS application where helium is employed and assurance of purity is essential. Combining the contents of three individual in-line traps into a single unit reduces the number of potential leaks and the possibility of aspirating contaminants into the gas stream.

Capacity Data:

High Purity Helium—99.997%

		Removal Capacity
O ₂	< 5ppm	1.07L
THC*	< 1ppm	20g
H ₂ O	< 5ppm	46g

* Total Hydrocarbons, analysis limited to 3 contaminate groups.

Effluent Concentration:

Research Helium—99.9999%

Impurities	< 1.0ppm
N ₂	< 0.5ppm
O ₂	< 0.5ppm
THC*	< 0.1ppm
CO+CO ₂	< 0.1ppm
H ₂ O	< 0.2ppm
H ₂	< 0.2ppm
Ar	< 0.1ppm
Ne	< 0.5ppm

*Total Hydrocarbons, analysis limited to 3 contaminate groups.

18" x 2 3/8"

Big Universal Trap (RMS Series) Ordering Information

Cat. No.	Gas Purifier Type	Fitting	Price
RMSHY-2	Hydrogen	1/8"	
RMSHY-4	Hydrogen	1/4"	
RMSH-2	Helium (Ar/Me)+	1/8"	
RMSH-4	Helium (Ar/Me)+	1/4"	
RMSN-2	Nitrogen	1/8"	
RMSN-4	Nitrogen	1/4"	

Mounting Bracket for Big Universal Traps

Cat. No.	Description	Price
UMC-5-2	Big mounting clip, 2/pk	
+ Recommended for GC/MS		

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 oxygen 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



UOP® mat/sen™ Gas Specific Purifiers

- Removes oxygen, moisture, and hydrocarbons •
- Replace 3 traps with 1 purifier!
- Decrease baseline noise
- Increase GC/MS sensitivity

Effluent Concentrations

Outlet levels listed indicate PPB concentration based on 50ppm

nominal inlet concentration level

Purifier	CO	CO ₂	O ₂	H ₂ O	Sulfur	* NMHC ₂
Helium	<1	<1	<1	<1	<1	<3
Hydrogen	<1	<1	<1	<1	<1	<3
Nitrogen	<1	<1	<1	<1	<1	<3
Air				<1		<3

* NMHC stands for non-methane hydrocarbons.

Specifications:

Length: 21"

Diameter: 1.5"

Max inlet pressure: 300 psi

Max flow: 500mL/min

Pressure Drop*: 0.30 psi

* 120 psi @ 0 to 500mL/min

UOP Gas Specific Purifiers Ordering Information

Cat. No.	Gas Purifier Type	Fitting	Price
014-1200	Hydrogen	1/8"	
014-1202	Hydrogen	1/4"	
014-1100	Helium	1/8"	
014-1102	Helium	1/4"	
014-1300	Nitrogen	1/8"	
014-1302	Nitrogen	1/4"	
014-1400	Air	1/8"	
014-1402	Air	1/4"	

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