



Only Available from Restek: Complete Solutions from Collection to Analysis

- Whole air canisters and thermal desorption tubes for VOCs.
- High purity resin and PUFs for semivolatiles.
- Primary and second source gas standards.
- Rugged, reliable GC columns and accessories.





Reliable VOC Monitoring at ppb Levels

SilcoCan® & TO-Can® Air Monitoring Canisters

- Siltek® deactivation means no change in VOC concentration—guarantees correct representation of sample taken.
- Variety of options available, including SUMMA can equivalent.
- Standard fittings compatible with all instrumentation and accessories.
- Exclusive manufacturer of 1 L spherical canister.
- Repair service available to extend canister life.

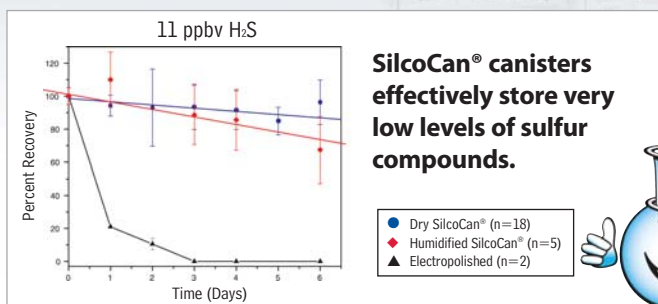


Canister Options

Sizes	1, 3, 6, 15 L
Valves	Parker diaphragm, Swagelok bellows
Interior Coating	Electropolished, Siltek treated
Gauges	3 vacuum/pressure ranges

Applications

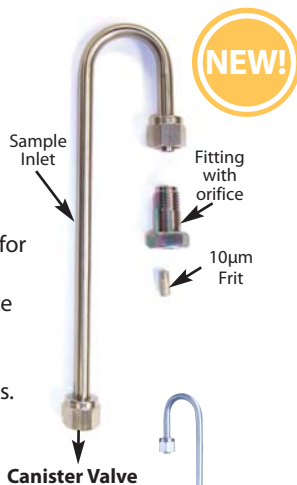
- Ambient Air (US EPA TO-14A, TO-15, ASTM D5466)
- Indoor Air
- Vapor Intrusion
- Emergency Response



Visit www.restek.com/air for a full air canister product listing!

Grab Sampling Kits

- Use with 1, 3, or 6 L canisters, for qualitative grab air sampling.
- Replaceable frit protects orifice and valve from particulates.
- Variety of orifice sizes, for fast sampling from 5 to 60 minutes.



Passive Air Sampling Kits—Grab

Canister Volume/Sampling Time (min.)	Flow (mL/min.)	Orifice Size	Siltek Treated Grab Sampling Kits cat.#
1 L Canister 60	15	0.0018"	26280
3 L Canister 30	20	0.0020"	26281
6 L Canister 15	45	0.0030"	26282
30	80	0.0040"	26283
15	150	0.0055"	26284
15	300	0.0080"	26285
5	390	0.0090"	26286
5	>1,000	0.0130"	26287

Also available in stainless steel. Air sampling canisters sold separately.

Integrated Sampling Kits

- Provide accurate integrated sampling without a sampling pump.
- Siltek® treated components prevent the loss of active compounds.
- Excellent for sampling times from 0.5 hour to 125 hours.

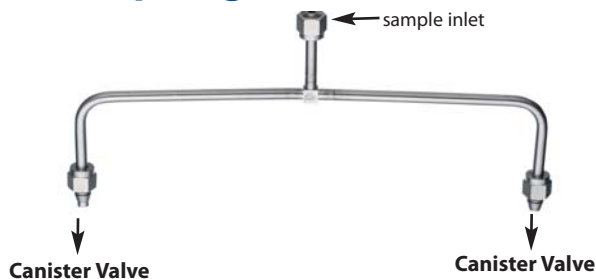


Passive Air Sampling Kits—Integrated

Canister Volume/Sampling Time	Flow (mL/min)	Orifice size	Siltek Treated Sampling Kits
400cc 8 hour	0.5–2	0.0008"	24217
1 Liter 24 hour	2–4	0.0012"	24160
3 Liter 48 hour	4–8	0.0016"	24161
6 Liter 125 hour	8–15	0.0020"	24162
15 Liter 60 hour	15–30	0.0030"	24163
2 hour	30–80	0.0060"	24164
4 hour	80–340	0.0090"	22101

Also available in stainless steel. Air sampling canisters sold separately.

Dual Canister Sampling Manifold



- Duplicate sampling with all size canisters using 1 or 2 flow controllers.
- Precise dimensions (9.5" wide x 3.5" high) provide accurate splitting of sample between two canisters.
- One-piece design means fewer leaks.
- Thick walled stainless steel tubing is rugged enough for field use.
- 1/4" compression connections.

Description	Stainless Steel cat.#	Sulfinit Treated cat.#
Dual Canister Sampling Manifold	24998	24999

Soil Gas Sampler

This unique grab sampler is specifically designed for soil gas sampling and allows the connection of tubing coming from the soil gas sample port. The innovative design minimizes connections and houses a critical orifice in the tee fitting. It also incorporates a vacuum gauge and 2µm frit filter.



Assembled sampler includes:

- Stainless steel tee with orifice.
- 1 1/2" vacuum gauge (-30" Hg to 0" Hg).
- 2 µm frit filter for insertion into 1/4" compression sample inlet.
- 1/4" port connector to canister valve.

Sampling Time for 6 L Canister	Flow	Orifice Size	Siltek Treated	Stainless Steel
			Soil Gas Samper Kit cat.#	Soil Gas Samper Kit cat.#
20 min.	210 mL/min.	0.0065"	22935	22930
30 min.	150 mL/min.	0.0055"	22936	22931
1 hr.	80 mL/min.	0.0040"	22937	22932
4 hr.	19 mL/min.	0.0020"	22938	22933
10 hr.	6 mL/min.	0.0014"	22939	22934

Simplify Air Sampling



Whether you're automated or manual, Restek's Canister Timer has the features you need!

- Program up to 12 timed events!
- Perfect for either grab or time-integrated sampling.
- Long battery life; recharges conveniently using the USB port on any PC.
- All stainless steel sample flow path ensures inertness, improving accuracy.

Description	qty.	cat.#
Canister Air Sampling Timer	ea.	24267

NEW! Air Canister Tripod

For collocated ambient air sampling



- Holds most 1 L, 3 L, and 6 L canisters securely, without any tools.
- Lightweight (9 pounds) and compact, for easy storage and transport.
- Large base provides enhanced stability, without additional supports.

Description	qty.	cat.#
Air Canister Tripod	ea.	24151

*Air sampling canisters sold separately.



TO-Clean Canister Cleaning System

High capacity, fully automated, easy to use canister cleaning oven dramatically increases lab efficiency!

- Twelve 6 L canister capacity; custom-built trays for different canister sizes.
- Method TO-14A/15 compliant.
- Small footprint saves lab space.
- No computer needed—uses embedded touch screen controller.
- Save up to ten user defined methods.
- Automated system leak test.
- Isothermal oven cleans entire can AND valve more completely than band heaters.
- Includes Edwards RV-8 vacuum pump—no turbo pumps!
- One year limited warranty.



Dimensions:
44"H x 48"W x 27"L
Weight: 525 lbs



CE

Description	qty.	cat.#
TO-Clean Oven, 120V, 60Hz	ea.	22916
TO-Clean Oven, 220/230V, 50/60Hz	ea.	22917
Optional Accessories (not included with TO-Clean Oven)	qty.	cat.#
Dewar, glass, 4300mL stainless steel u-tube trap	ea.	22918
Oven Cart, 29"H x 27"W x 49"D, 12 gauge steel, push handle and casters	ea.	22919
1L Option: includes tubing, fittings, and inserts for 24 1L canisters	ea.	22920
Humidification Chamber	ea.	24282

Note: Ovens are built on demand, therefore, a ten week lead time is required on all orders. A limited cancellation and return policy applies to TO-Clean ovens; contact Restek Customer Service for details.
Shipping: FedEx Ground, unless otherwise requested. Costs vary depending on ship-to location.

	Restek	Entech
Capacity	12-6L cans	6-6L cans
Software	Included	Separate

www.restek.com/air

Expand Air Sampling with Mini-Cans & Accessories

- Grab and integrated sampling without sampling pump.
- 8-hr integrated sample possible with 400 cc mini-can.
- Siltek® coating delivers high level of inertness for H₂S & other reactive compounds.
- Versatile enough for many applications:
 - Indoor air
 - Industrial hygiene
 - Soil gas
 - Emergency response



Get Mini! Mini-Can Options

Sizes	400cc, 1000cc
Valves	Quick connect, diaphragm
Interior Coating	Electropolished, Siltek treated
Sample Inlets	Area, personal
Flow ranges	0.5-15 sccm



Which VOC Sampling Technique is Right for You?

Thermal desorption tubes provide a complementary option to canisters for sampling VOCs. Both techniques have advantages and disadvantages, and their features must be evaluated for suitability relative to the sampling environment and analytical capabilities. Table I outlines the similarities and differences between these techniques; use this handy comparison to determine which equipment is best for you.

Similarities Between Thermal Desorption Tubes and Canisters:

- Reusable sampling device.
- Long product lifetime.
- Long-term sample stability.
- Blank certification required prior to sampling.
- Sample concentration required before GC/MS analysis.
- Dry purge helpful to remove moisture before GC injection.
- Ppt sensitivity.
- Method acceptance.
- Collection of wide range of VOCs with single device.
- Useful for screening of unknowns.
- Leak tightness critical to maintaining sample integrity and preventing contamination of a clean device.

Differences Between Thermal Desorption Tubes and Canisters:

	Thermal Desorption Tubes	Canisters
Methods	US EPA TO-17 ASTM D6196 ISO 16017 ISO 16000-6 NIOSH 2549	US EPA TO-14A, TO-15 ASTM D5466 OSHA PV2120 NIOSH Protocol Draft
	World-wide acceptance	Gold standard for US ambient air market
Applications	Ambient air, indoor air, industrial hygiene Material emissions Food & flavor Chemical weapons	Ambient air, indoor air, vapor intrusion, emergency response
	C3 to C30	<C3 to ~C10
Handling	Light weight for personal monitoring and general ease of use	Larger and heavier; more costly to ship
Sampling	Active sampling with sampling pump or diffusive sampling without pump is possible with determined diffusion coefficients for each compound.	Passive sampling, no sampling pump required. Long-term sampling possible without battery to recharge.
	Integrated sampling only	Grab & integrated sampling
	Concentrated sample	Whole air
	Proper sorbent selection recommended in methodology.	N/A
	Must sample below sorbent breakthrough volumes to avoid sample loss and irreversible adsorption on sorbent	N/A
	Large sample volumes >100L	Sample volume is function of canister size, 15L max
Analysis	Tube dimensions are instrument specific	Compatible with all manufacturer sample concentrators
	1 injection, more injections possible for some instrumentation	Multiple sample injections
	Concentration range ppt to ppm	Ppt to ppm
	Some sorbents prone to artifact formation.	Low blanks when properly cleaned.
Storage	Sample storage at 4°C recommended for multi-bed tubes to prevent potential migration of compounds to more retentive sorbent, which maybe difficult to recover.	Room temperature
Cleaning	Analytical process automatically cleans tube for reuse. Cleans as it analyzes. Conditioning/cleaning and analysis incorporated in one thermal desorption unit.	Canister cleaning requires separate equipment as additional step prior to background certification and sampling.
Cost	\$50-130 each	\$200-700 each



free literature

A Guide to Whole Air Canister Sampling: Equipment Needed and Practical Techniques for Collecting Air Samples

Technical Guide
lit. cat.# EVTG1073



Thermal Desorption Tubes: Versatile Air Sampling for a Wide Range of Applications

Flyer
lit. cat.# EVFL1065

Download your copies from www.restek.com.



tech guides

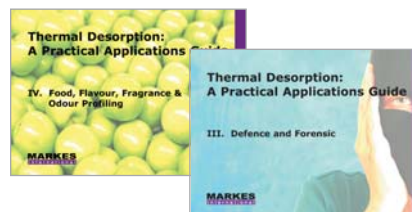
Thermal desorption application guides are available for a broad range of markets. Request your FREE copy today using these part numbers.

Environmental Air Monitoring and Occupational Health & Safety
EVTG1034

Residual Volatiles & Materials Emissions Testing
GNTG1035

Defense & Forensic
CFTG1036

Food, Flavor, Fragrance & Odour Profiling
FFTG1037





Need Gas Sampling Bags? Restek has them!

- Tedlar® and multi-layer foil bags
- Bag sizes 0.5—100 L
- Polypropylene & stainless steel valve options

www.restek.com/air



Vacuum Bag Sampler

Fill Bags without pump contamination!

- Cost-effective alternative for whole air sampling.
- Lightweight and easy to use.
- Vacuum sampler fills bag quickly, without sample passing through pump.

Thermal Desorption Unit (TDU) Tubes



- Variety of sorbents to collect a wide range of VOCs on single device.
- Fits PerkinElmer and Markes thermal desorption instruments.
- Compliant with US EPA, NIOSH, and European methods.
- 10³ times greater sensitivity over solvent desorbed sorbet tubes.
- Reusable tubes may be sampled actively with sampling pump or passively without.

Description	qty.	Unconditioned	
		Stainless Steel cat.#	Glass cat.#
TDU Tubes, Tenax TA	10-pk.	24056	24062
TDU Tubes, Carbopack C/ Carbopack B/Carbosieve SIII	10-pk.	24061	24067

2nd Source TO-14A/TO-15 Gas Calibration Standards

- Standards from TWO manufacturers provide second source standards on one order.
- 12 month stability in transportable cylinders.
- Drop shipped for fast delivery and maximum shelf life.



**A. Spectra/Linde
104L Cylinders**

**B. Scotty/Air Liquide
110L Cylinders
(Pi-marked Cylinders for
EU Regulations)**

NEW!

Naphthalene now added to Mass APH Mix and TO-15 Mix at no extra cost!

Ultra-Clean Resin

XAD-2 Equivalent

- For adsorbing semivolatiles in air.
- Cleaned, GC tested and certified.
- Eliminates the hassle of cleaning.

Although resin is an excellent adsorbent for trapping PAHs, it requires extensive clean-up because many of its impurities are PAH compounds. To enable you to eliminate time-consuming clean-up, we do the cleaning for you! We test each batch by capillary GC/flame ionization detector to ensure cleanliness.



method applications

Method	Applications
EPA 23	Dioxins in stationary source emissions
EPA TO-13A	PAHs in ambient air
ASTM D6209	PAHs in ambient air
EPA Method 0010	Semivolatiles in Stationary Source Emissions

Description	cat.#	Price-per-bottle		
		1-4 bottles	5-9 bottles	10+ bottles
Ultra-Clean Resin, 100 grams	24230	/ea.	/ea.	/ea.

Bulk SDVB Resin

XAD-2 Equivalent

- Styrene/divinylbenzene equivalent to XAD-2 resin.
- Untreated, packaged in 1 kg plastic containers.
- Spherical, 20 to 60 mesh particles.



Description	qty.	cat.#
SDVB Resin	1kg	24053

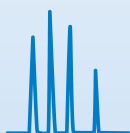
50 kg size available on request.



Restek has supplies for all your air sampling needs!
Visit www.restek.com/air

Complete Solutions for the Revised Mass APH Method

- Air canisters** simplify sampling—tubes are no longer needed for naphthalene!
- Single and second source standards** include all new target compounds.
- Inert GC columns** assure baseline resolution of naphthalene.

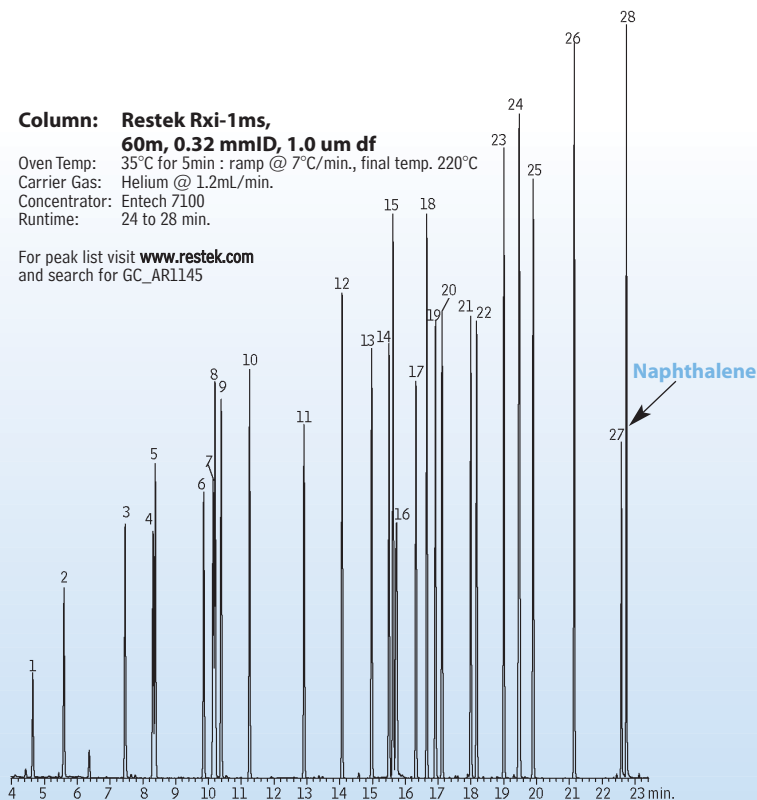


For more applications and product details, visit www.restek.com

Column: Restek Rxi-1ms, 60m, 0.32 mmID, 1.0 um df

Oven Temp: 35°C for 5min : ramp @ 7°C/min., final temp. 220°C
Carrier Gas: Helium @ 1.2mL/min.
Concentrator: Entech 7100
Runtime: 24 to 28 min.

For peak list visit www.restek.com and search for GC_AR1145



Choose the Appropriate Device for Your Sampling Needs



Get More!

A Guide to Whole Air Canister Sampling: Equipment Needed and Practical Techniques for Collecting Air Samples

Request Restek's
Technical Guide
lit. cat.# EVTG1073



	Canister	Gas Sampling Bag	Solvent Desorption Tube
Media Type	whole air	whole air	adsorption
Sensitivity	ppb	ppm	ppm
Technique	passive (no pump)	active	active
Sample Type	grab or integrated	grab	integrated
Analyte	wide range of VOCs	wide range of VOCs & permanent gases	sorbent specific
Applications	ambient, IAQ, emergency response, IH	ambient, IAQ emission	IAQ, IH
Durability	reusable	one time use	one time use
Inertness	excellent	fair	fair
Stability	30 day	48 hrs	varies by analyte
Sample Volume	0.4–6 L	0.5–100 L	varies by analyte
Sampling Time	minutes to days	minutes to hours	minutes to hours



Lit. Cat.# EVFL1310

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Restek U.S. • 110 Benner Circle • Bellefonte, PA 16823 • 814-353-1300 • 800-356-1688 • fax: 814-353-1309 • www.restek.com

Restek France • phone: +33 (0)1 60 78 32 10 • fax: +33 (0)1 60 78 70 90 • e-mail: restek@restekfrance.fr

Restek GmbH • phone: +49 (0)6172 2797 0 • fax: +49 (0)6172 2797 77 • e-mail: info@restekgmbh.de

Restek Ireland • phone: +44 (0)2890 814576 • fax: +44 (0)2890 814576 • e-mail: restekeuropa@aol.com

Restek Japan • phone: +81 (3)6459 0025 • fax: +81 (3)6459 0025 • e-mail: ryosei.kanaguchi@restek.com

Thames Restek U.K. LTD • phone: +44 (0)1494 563377 • fax: +44 (0)1494 564990 • e-mail: sales@thamesrestek.co.uk

