TO-Can® Canister & relevant for SilcoCans

cat.#s 24172-79; 22094-97; 22105-22108

Overview

A TO-Can® canister offers several important features. The inside surface is electropolished and passivated for excellent inertness. The unique holder attaches the handle and base to the canister without welds, and it protects the canister, tube stub, and valve. The diaphragm valve has a metal-to-metal seat and a temperature limit of 250°C. We leak check the system with helium, to ensure the canister and valve are leak-tight, then pressurize the canister with contaminant-free nitrogen before we ship it.

Prior to Use

TO-Can® canisters are shipped under pressure!

1. Unpack the TO-Can® canister from its box. Remove the ¼-inch plug nut from the top of the valve.
2. Turn the knob to the open position. Nitrogen should be released. If not, the system is not leak-tight, and should be returned. Please contact Technical Service, or your Restek representative, for a return authorization number. *Please do not return the canister, or any other Restek product, without a return authorization number.*
3. We recommend that you certify your canister clean, according to US EPA Compendium Method TO-12, TO-14A, or TO-15, prior to use.

Cleaning for Reuse*

To clean a TO-Can® canister and valve, we recommend a procedure such as that summarized here. We also recommend performing a blank analysis according to EPA Compendium Method TO-12, TO-14A, or TO-15, after cleaning the canister, to certify the canister clean prior to reuse.

IMPORTANT PRECAUTIONS!

- Only hand tighten knob to close valve. Overtightening will damage the seat, causing leakage.
- Tighten compression fitting on valve inlet only ¼ turn past finger tight. Overtightening will cause leakage.
- Use prefilter during sampling to prevent particulate damage to valve.
- Do not disassemble valve—disassembly will void warranty.
- Protect valve inlet by replacing brass cap when not in use.
- Do not exceed canister maximum pressure of 40psig.

Typical Cleaning Method

1. Connect the canisters to the cleaning system, release any pressure within any of them, and evacuate them. Based on EPA Method TO-15, the ultimate vacuum achieved during cleaning should always be <0.2mm Hg.
2. After the canisters have been under vacuum for approximately 1 hour, pressurize them with humidified air or nitrogen to 5psig (if they will be heated during cleaning) or to 30psig (if they will not be heated). Pressurization will dilute the contaminants and the water vapor will hydrolyze them. When the system has equilibrated at the designated pressure, proceed to step 3 (heating) or step 4 (no heat).
3. Heat the pressurized canisters to the appropriate temperature. A TO-Can® canister fitted with a gauge can be heated to 90°C; a canister without a gauge can be heated to 250°C.**
4. Allow the canisters to equilibrate for at least 1 hour. Evacuate the canisters to remove the impurities, then allow them to equilibrate for 1 hour. Repeat steps 2 - 4 as necessary. The number of cycles will be determined by how dirty the canisters are and how easily they clean. Without heat, the number of cycles required to clean the canisters may be higher.

Optional gauge
- Quickly confirm vacuum or pressure inside canister.
- Monitor pressure changes.
- Fully protected by canister frame.
- Can be heated to 90°C during cleaning.

Enhanced valve and canister bracket
Canister holder and valve bracket protect canister, tube stub, and valve.

¼" tube stub
Allows user to interchange valves.

Serial controlled
For quick, sure identification.

Certifying a Cleaned Canister

We recommend certifying canisters for both cleanliness and analyte stability. To certify a canister clean, pressurize the cleaned canister to 30 psig with humidified, certified ultra-high purity air or nitrogen. Analyze an aliquot of the canister content by GC/MS, GC/FID, or GC/ECD. US EPA Method TO-14A/15 specifies a canister must contain less than 0.2ppbv of any target volatile organic compound; EPA Method TO-12 specifies less than 0.02ppmC, as detected by GC/FID. If a canister does not meet specification, it must be recleaned and retested.

**For detailed information about cleaning, certifying, and using canisters, request A Guide to Passive Air Sampling (lit. cat.# 59977B).*

***To use temperatures above 90°C to clean a TO-Can® canister fitted with a gauge, you must remove the gauge and plug the gauge port prior to cleaning. Our Air Canister Heating Jacket (cat.# 24123) will save time and effort, and minimize potential for contamination, by enabling you to quickly and efficiently clean a canister at 75°C with the gauge in place (at 150°C without gauge).*

Reconditioning Service

Normal wear and tear on a canister may result in valve damage and leakage. We offer a reconditioning service in which we will replace the valve, clean, and leak test the canister for much less than the cost to replace the entire canister. If you would like this service, please follow the instructions below:

1. Contact your Restek representative or Customer Service at 800-356-1688, ext. 3, and place an order for part number 560838 using your company purchase order.
2. Obtain a return authorization number to affix on the outside of the shipping container.
3. Clean canister before shipment to Restek.
4. Return canister intact. Do not remove valves or gauges that were part of the original canister.

Note: If attaching any of Restek's passive sampling kits to a 3L canister, use a Sulfinert® treated (cat.# 563646) or stainless steel (cat.# 563647) connector between the two components.

TO-Can® Canisters

	w/1/4" Valve		w/Gauge, 1/4" Valve		w/No Valve		w/1/4" Swagelok SS4H Bellows-Sealed Valve	
volume	qty.	cat.#	qty.	cat.#	qty.	cat.#	qty.	cat.#
1L	ea.	24172	ea.	24176	ea.	22094	ea.	22105
3L	ea.	24173	ea.	24177	ea.	22095	ea.	22106
6L	ea.	24174	ea.	24178	ea.	22096	ea.	22107
15L	ea.	24175	ea.	24179	ea.	22097	ea.	22108

Replacement Diaphragm Valve	cat.#
2-port	24145
3-port	24147
1/4" Swagelok Bellows Sealed Valve	24148

Air Canister Heating Jacket (cat.# 24123)

The ultimate in controlled heating, for reliably cleaning your air canisters!

- Closely simulates oven environment—heats entire canister and valve.
- Easily fits canister up to 6 liters.
- Prevents sample condensation, for accurate subsampling.
- Lightweight, comfortable to the touch when heated.
- Connect up to five Canister Heating Jackets to one 15 amp circuit.

Whether you made your canister cleaning system or purchased a commercial system, the Restek Canister Heating Jacket will help you clean your canisters faster and more efficiently. The novel design ensures the entire canister, including the valve, is heated during the cleaning cycle, to remove contaminants most effectively. It also can be used to keep the sample heated during aliquot removal. The Canister Heating Jacket incorporates two heat settings—low (75°C) and high (150°C). Connect up to five Canister Heating Jackets to one 15 amp circuit.

RESTEK ISO 9001:2000 cert.# FM80397

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