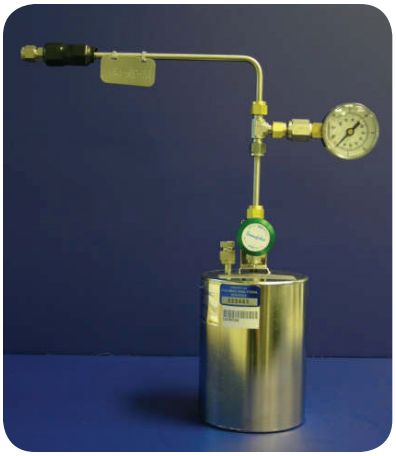
Canister Sampling Instructions

There are two primary modes of sampling: "GRAB" sampling and "TIME INTEGRATED" sampling. For GRAB sampling, the canister valve is simply opened and the vacuum inside the canister draws in a sample within a matter of seconds. GRAB sampling is most often used for discrete odor events, or for static concentration sample streams. TIME-INTEGRATED samples require an additional piece of laboratory calibrated equipment (flow controller or critical orifice) to be placed in line with the canister. Flow controllers/critical orifice assemblies are equipped with fine particulate filters and are set for any user-defined duration (or flow rate) from 5 minutes up to 24 hours.

Equipment

- Summa or Silco canister – cleaned and certified by Columbia Analytical, and leak checked prior to shipment. Canisters are available in several sizes, including 6L and 1L.



1L size canister with analog gauge and critical orifice assembly

- Flow controller (a.k.a. "regulator") – Used to collect a time-integrated indoor air or ambient air sample. Flow controllers are precisely calibrated by the laboratory for your project specific requirements. Do not adjust any of the settings or knobs on the flow controller.
- Critical Orifice Assembly (COA) – Used to collect a time-integrated soil gas, sub-slab, SVE system, or other vapor sample. COAs are precisely calibrated by the laboratory for your project specific requirements. Do not disassemble any parts on the critical orifice assembly.
- Analog gauge – Gauge on Swagelok ¼" Tee fitting, to monitor pressure during sampling. Note that these gauges are for general reference purposes only. Canister vacuum is checked prior to shipping and upon receipt at the laboratory after sampling using a NIST certified digital gauge. Clients are encouraged to purchase their own digital gauges for use in the field.

Procedure

1. Ensure that the canister valve is fully closed (the green knob should be turned completely clockwise).
2. Using a 9/16" wrench, remove the brass cap from the valve on the top of the Summa canister.
3. If collecting a GRAB sample, simply open the canister valve, turning the green knob counterclockwise until there is no resistance. This is approximately 1¼ turns. Then turn back clockwise slightly until resistance is detected. You will hear a hissing noise as the vacuum dissipates and draws air in. Then skip to step #7. If collecting a TIME-INTEGRATED sample, proceed to steps 4-6.
4. If desired, attach the analog gauge (on a Swagelok Tee) to the valve on the top of the canister. Tighten down with your fingers first, then tighten gently with 9/16" wrench.
5. Attach the flow controller or critical orifice assembly to either the analog gauge (if using) or directly to the valve on the top of the canister. Tighten down with your fingers first, then tighten gently with 9/16" wrench.

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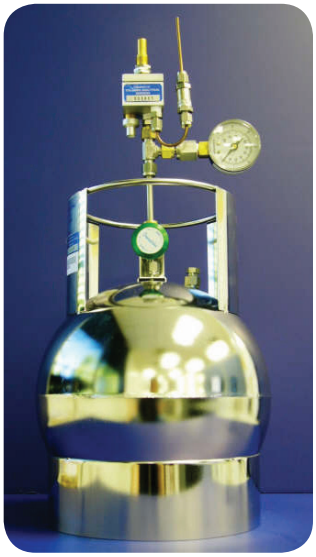
6. To open the canister valve, turn the green knob counterclockwise until there is no resistance. This is approximately 1 ¼ turns. Then turn back clockwise slightly until resistance is detected. Since the flow controller restricts the airflow, you will NOT hear a hissing noise as the vacuum dissipates and draws air in.
7. At the end of the sampling period, close the canister valve by turning the green knob clockwise. Do not over-tighten.
8. Remove the flow controller/critical orifice assembly and/or analog gauge (used for time-integrated sampling only). Wrap both separately in bubble wrap for shipment.
9. Replace the brass cap on the canister valve. Tighten it with a 9/16" wrench.
10. Label the sample with the tag provided, then attach the tag to the canister with the plastic tie.
11. Complete a chain of custody form. Note the canister ID number on the COC. For time-integrated sampling, note the flow controller or critical orifice assembly identification number with the corresponding canister.
12. Place the chain of custody form, the bubble-wrapped flow controller, and the canister back into the original boxes in which they were shipped to you.



6L size canister with analog gauge and flow controller

Important Notes

- Care must be used with the canister valves. DO NOT OVER-TIGHTEN THE VALVES. Hand tighten only, do not use tools.
- Flow controllers must be securely wrapped in bubble wrap for shipping.
- The canister valve fitting is a ¼" male Swagelok fitting.
- The inlet side of the flow controller is a ⅛" outer diameter.
- The inlet side of the critical orifice assembly is ¼" outer diameter. A stainless steel ¼" nut with rubber ferrule will be provided to attach sample point tubing to critical orifice assembly.
- Do not remove the bar code or serial number labels from the canisters.
- Do not make any markings directly on the canister or affix any labels.
- 6L size canisters will be tagged as either "AMBIENT" (blue tag) or "SOURCE" (orange tag). AMBIENT canisters should be used for indoor or ambient air sampling. SOURCE canisters should be used for sub-slab, soil vapor, SVE system monitoring, landfill gas, source testing, or other types of samples. Please call the laboratory with any questions regarding the segregation of canisters.
- Flow controllers are calibrated such that some residual vacuum should remain after sampling. Please call the laboratory with any questions regarding pressures of canisters before or after sampling.
- Please call the laboratory with any questions regarding proper shipping of canisters.

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