



**VAPOR
INTRUSION**
Sampling Solutions

The All-In-One Soil Gas Sampling Solution

Solutions for all 4 ZONES

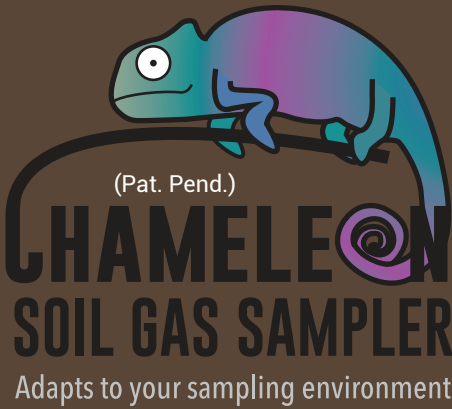
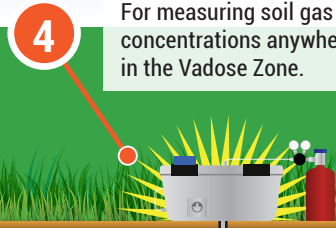


1 **Indoor Air Quality**
Soil gas levels inside structures.

2 **Sub Slab / Vapor Intrusion**
Reveals the soil gas concentrations right below buildings & potential for vapor intrusion over time.

3 **Surface Measurements**
Determine contamination levels at the surface, or rate of emission from the surface into the air.

4 **Monitoring Well**
For measuring soil gas concentrations anywhere in the Vadose Zone.



Vadose Zone

Capillary Zone

Ground Water Table

Advantages of Soil Gas Sampling with Canisters

Sampling soil gas into canisters provides significant advantages over the use of passive adsorbent samplers with regard to both maintaining the integrity of the sample in the field and ensuring that the best analytical technique is used in the laboratory.

Canisters eliminate the need for pumps, batteries, and media selection, and the same sampling approach can be utilized for any gas concentration while being universal for all compounds. Furthermore, humidity and temperature concerns inherent with tube sampling do not affect canister accuracy.

Entech has a long history of engineering turn-key solutions specific to the environments being sampled. Designed with feedback from numerous sampling professionals, the Chameleon provides an all-in-one solution that is changing the way soil gas studies are conducted world-wide.

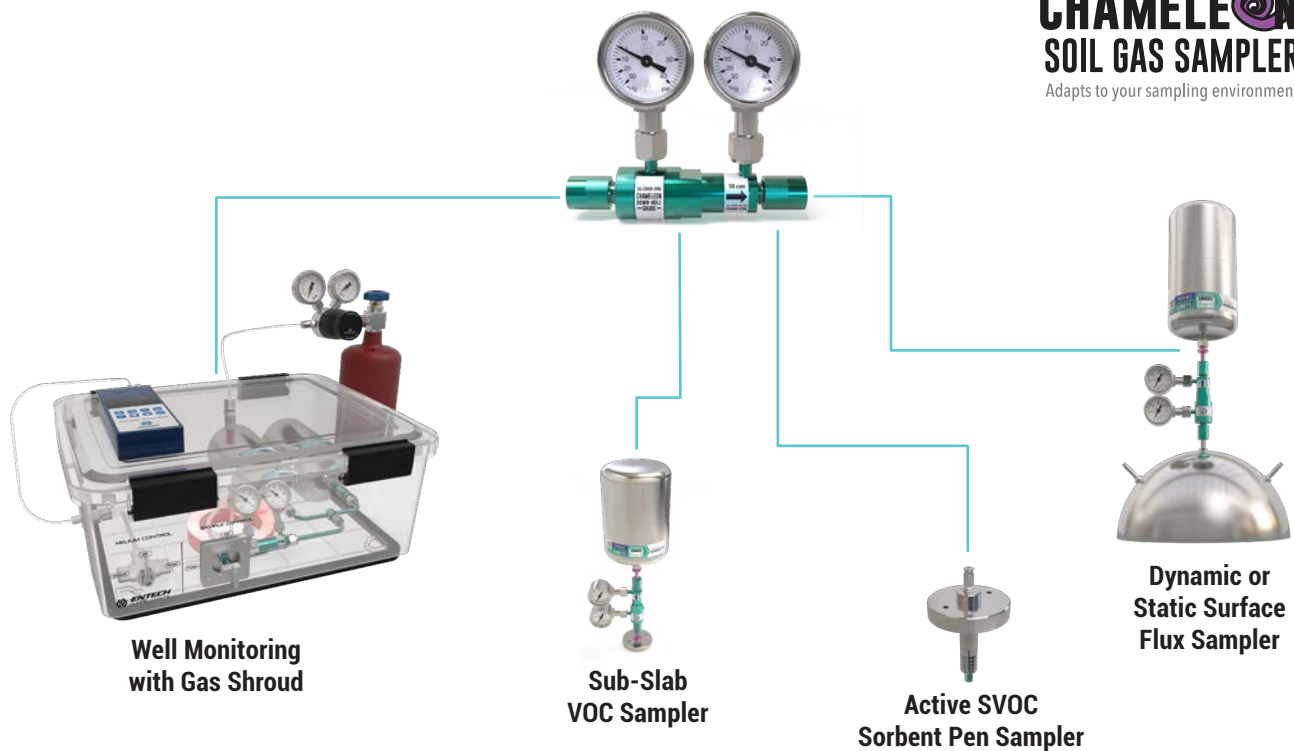
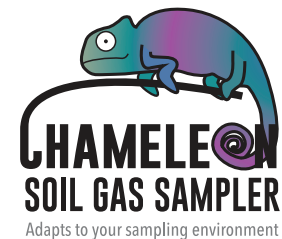
Sampling systems must be considered an extension of the laboratory.

The Chameleon improves the accuracy of soil gas sampling by applying basic principles of gas chromatography. Chameleon maximizes recovery while minimizing carryover to yield the most accurate soil gas sample train available.

- Ensure all surfaces are inert (Entech Silonite™ coated stainless steel).
- Minimize surface area and shorten path lengths to canister.
- Minimize leak prone connections by engineering and machining custom solutions.
- Eliminate absorption (no plastic tubing where possible) .
- Prove system is leak-tight before delivery to field.
- Isolate the flow path from the outside world during transportation.

The Chameleon Soil Gas Sampling Train

One Sample Train for All Soil Gas Sampling Techniques!!



Sub-Slab & Vapor Intrusion Monitoring

No Grout. No Mess. No Contamination. Better Results.

Monitor gases directly under the slab of buildings to determine the potential for intrusion into the indoor environment. A vacuum tight seal is made through the building's foundation, with a unique "triple seal" using two O-rings and a water dam that ensures that only gases from beneath the slab will be drawn into the sample train and canister. After sampling, the slab face sealing fitting is removed allowing a temporary plug to be installed.

Chameleon Soil Gas Sampler shown with Entech Slab-Tight™ Sampler.

Advantages:

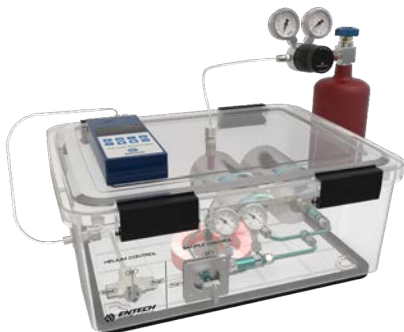
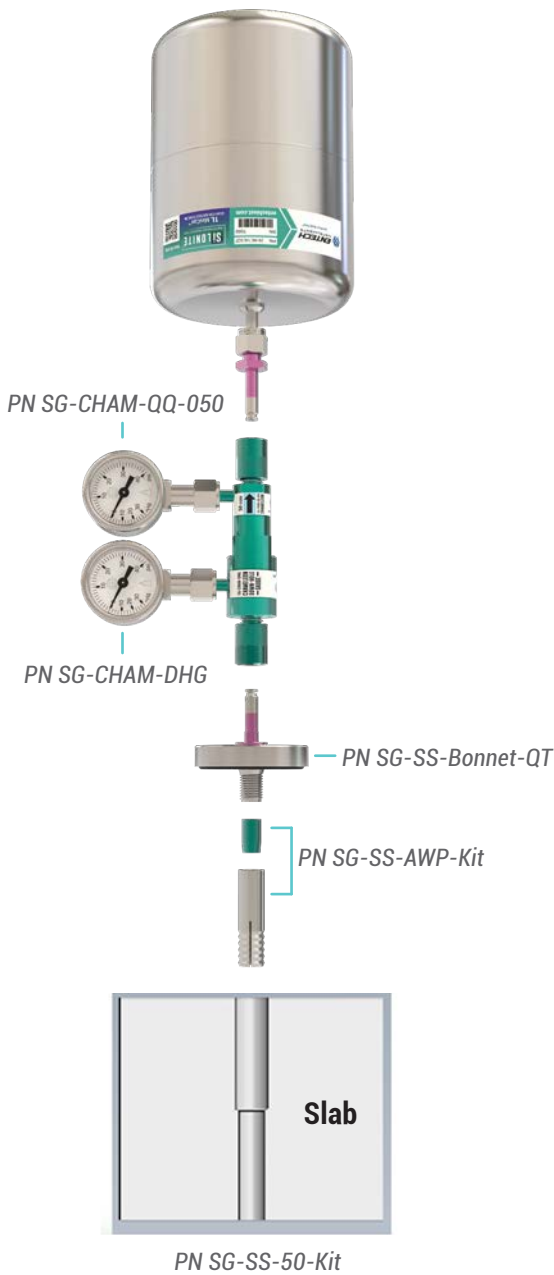
- Most reliable, non-contaminating slab vapor seal on the market.
- Shortest and most inert flow path ensures complete recovery and no sample carryover.
- Chameleon controls the flow rate to avoid disturbing the equilibrium of VOCs between gas, adsorbed soil, and dissolved water phases.
- Avoids the use of contaminating plastic tubing. All surfaces are Silonite™ ceramic lined stainless steel to prevent outgassing of contamination while ensuring maximum compound recovery.
- Compatible with Entech Soil Gas Shroud for "complete flow path" leak testing right up to the canister.



Entech's Slab-Tight™ Sub-Slab Sampler

Complete the Sampling with Chameleon & Silonite™ MiniCan™

- Entech's unique Slab-Tight™ sub-slab sampler eliminates interferences created by grout and other slab sealing materials.
- Grout may contain contaminants that can positively bias the results.
- Added Down-hole moisture from the grout may affect the solid/liquid/gas phase equilibria.
- The Entech Slab-Tight™ sub-slab sampler makes a mechanical connection and seal with no chance of contaminating the collected soil gas.
- Tracer Gas Shroud for butane or helium leak checking is available.

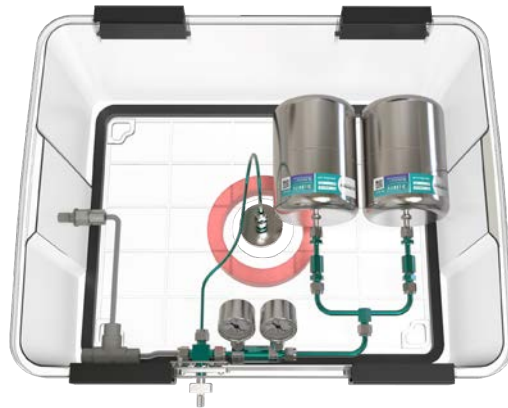
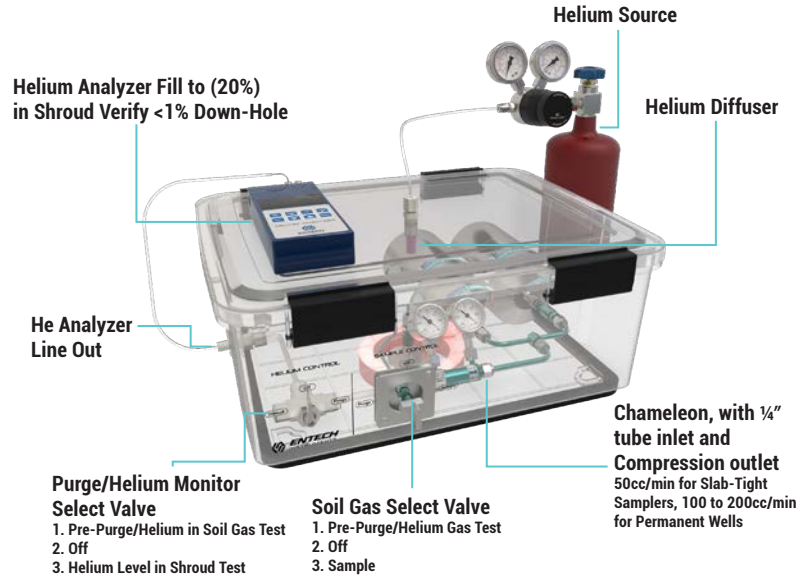


PN SG-SS-SHR-50-Kit

| Description | Unit | Part # |
|--|------|---------------------|
| Sub-Slab Vapor Intrusion Canister Sampling Kit (50cc/min) (600cc, 1L, or 1.4L Cans sold separately) | EA | SG-SS-50-Kit |
| Slab Anchor, Wedge, and Plug Kit | EA | SG-SS-AWP-Kit |
| Tool to expand anchor into the concrete | EA | SG-SS-Expander |
| Face-sealing Bonnet with QT Fitting | EA | SG-SS-Bonnet-QT |
| Bonnet Wrench - Tightens and releases Bonnet to concrete | EA | SG-SS-Bonnet-Wrench |
| 50cc/min Chameleon with FQT on Inlet & Outlet. Includes down-hole gauge for measuring vacuum below ground soil | EA | SG-CHAM-QQ-050 |
| 50cc plastic preflush syringe | EA | 07-20050 |
| 16 Gauge Sub-Slab Dispensing Needle | 5pk | 07-20018 |

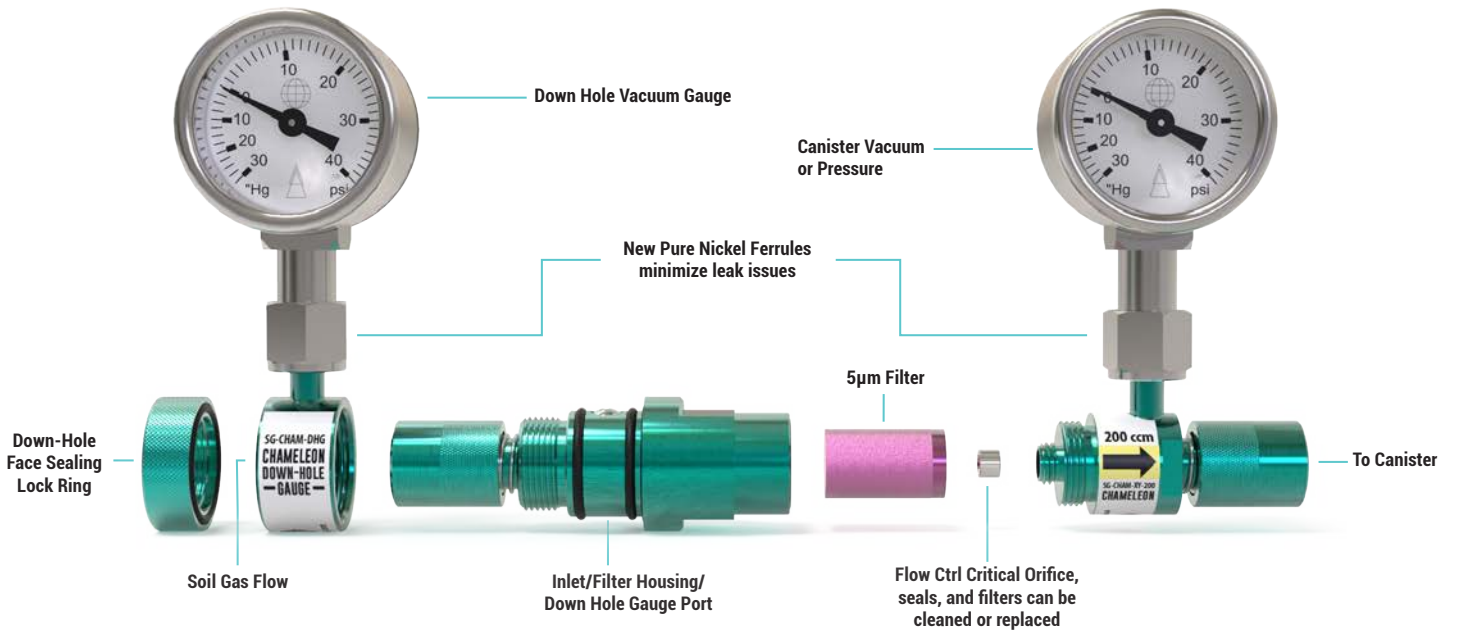
| Individual Parts | Unit | Part # |
|---|------|------------------|
| Slab Anchor & Plug Kit - Not reuseable. One needed per installation | EA | SG-SS-AWP-Kit |
| Shroud Foam Sealing Ring | EA | SG-SHR-RNG |
| Dual Canister Adapter w/ 2 Female Micro-QT™ Valves | EA | 39-99014QT |
| 600mL MiniCan with Micro-QT™ Valve | EA | 29-MC600QT |
| 1L Silonite MiniCan | EA | 29-MC10LQT |
| Helium Analyzer (0.1-100%) | EA | SG-He-Analyzer |
| Soil Gas Drill Bit Kit 1/2" and 3/8" | EA | SG-SS-DRILL-Kit |
| Tracer Gas Shroud for Helium | EA | SG-He-Shroud |
| 16 Gauge Sub-Slab Dispensing Needle | 5pk | 07-20018 |
| 10cc/min Chameleon Shroud Sample Train. Includes 3 way valve, magnetic latch, & down-hole gauge for measuring vacuum below ground soil | EA | SG-CHAM-TC-010-S |
| 50cc/min Chameleon Shroud Sample Train. Includes 3 way valve, magnetic latch, & down-hole gauge for measuring vacuum below ground soil | EA | SG-CHAM-TC-050-S |
| 100cc/min Chameleon Shroud Sample Train. Includes 3 way valve, magnetic latch, & down-hole gauge for measuring vacuum below ground soil | EA | SG-CHAM-TC-100-S |
| 150cc/min Chameleon Shroud Sample Train. Includes 3 way valve, magnetic latch, & down-hole gauge for measuring vacuum below ground soil | EA | SG-CHAM-TC-150-S |
| 200cc/min Chameleon Shroud Sample Train. Includes 3 way valve, magnetic latch, & down-hole gauge for measuring vacuum below ground soil | EA | SG-CHAM-TC-200-S |

Tracer Gas Shroud For Vapor Intrusion



| Description | Unit | Part # |
|--|------|-------------------------|
| Sub-Slab Vapor Intrusion Canister Sampling Kit (50cc/min) w/ Tracer Gas Shroud (600cc, 1L, or 1.4L Cans sold separately) | EA | SG-SS-SHR-50-Kit |
| 50cc/min Chameleon Shroud Sample Train. Includes 3 way valve, magnetic latch, & down-hole gauge for measuring vacuum below ground soil | EA | SG-CHAM-TC-050-S |
| Slab Anchor, Wedge, and Plug Kit | EA | SG-SS-AWP-Kit |
| Tool to expand anchor into the concrete | EA | SG-SS-Expander |
| Face-sealing Bonnet with QT Fitting | EA | SG-SS-Bonnet-QT |
| Bonnet Wrench - Tightens and releases Bonnet to concrete | EA | SG-SS-Bonnet-Wrench |
| 50cc plastic preflush syringe | EA | 07-20050 |
| Tracer Gas Shroud for Helium | EA | SG-He-Shroud |
| 1/8" Silonite Line from Probe to 3-Way, w/ FMQT & 1/8" to 1/4" Tube Adapters | EA | SG-SHR-APVI |
| 16 Gauge Sub-Slab Dispensing Needle | 5pk | 07-20018 |

Easy Maintenance and Replacement of All Components



Create Your Chameleon Part Number. Combine Any Inlet with Any Outlet!

Configure your part # **SG-CHAM - X Y - ZZZ**

Substitute Q,C,T for your inlet (X) and outlet (Y), and append desired flow rate (ZZZ)

EXAMPLE

| Inlet - X | Outlet - Y | Flow - ZZZ |
|-----------|------------|-------------------|
| Q | Q | (zzz) cc/min |
| C | C | 010 cc/min |
| | | 050 cc/min |
| | | 100 cc/min |
| | | 150 cc/min |
| | | 200 cc/min |
| T | T | |

- The Chameleon can be configured to minimize compression fittings based on the probe, line, or fitting to which it connects.
- The inlet and outlet can be configured separately to optimize the sample train.
- The down hole vacuum gauge monitor can be added to any configuration, and verifies that excessive vacuum is not forming in the soil (<7.3" Hg vacuum).
- All configurations can be maintained under vacuum during shipment to the field to perform the shut-in test (leak test) automatically.

Do you need the Optional down-hole gauge?

ADD THIS PART # TO YOUR ORDER

PN **SG-CHAM-DHG**



COMPLETE

SG-CHAM-QC-150

Example: **SG-CHAM-QC-150** plus downhole gauge **SG-CHAM-DHG**



Learn more about us:



entechinst.com



facebook.com/entechinst



twitter.com/entechinst



linkedin.com/company/entech-instruments-inc

Entech Instruments
2207 Agate Court
Simi Valley, CA 93065
Phone: 805-527-5939

Vapor Intrusion Sampling – 190513 – 8.5