



ENTECH
INSTRUMENTS

See What's Really There™



2022 CATALOG

Solutions for Chemical Monitoring & Analysis

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President's Letter



Entech Instruments is continuing its tradition of providing the most advanced and accurate sample preparations systems available for headspace and gas sample analysis by GC and GCMS. Our new Multi-Capillary Column Trapping Systems (MCCTS) are transforming the way that gas phase sample preconcentration is performed prior to GC injection, all without the use of liquid nitrogen or even electronic cooling systems. These "fan cooled", extremely robust and reliable multi-stage capillary column traps manage water and CO₂ hundreds of times better than any packed trap system. This means much faster release for better chromatography, supporting "faster" GC methods, while also demonstrating far better immunity to contamination when exposed to high concentration

samples. Our MCCTS traps have been implemented in a full cryogen free TO15 solution with much faster GC injections and shorter run times than other TO15 systems on the market. Other applications using this revolutionary capillary trapping technology will also soon be announced.

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Entech's patent pending Sorbent Pen™ technology takes SPME to the next level by providing enhanced sensitivity, improved quantitation, and greater robustness than its fiber-based predecessor. Sorbent Pens utilize a unique flow through cartridge that forms a seal on a vial allowing a vacuum to be created within the vial. This new technique called VASE (Vacuum Assisted Sorbent Extraction) has been demonstrated to cover the entire range of analytes from the lightest volatile compounds (Freon 12/Vinyl Chloride and others) to very heavy 5-6 ring PAH compounds, while remaining in the headspace to avoid actual contact with the sample matrix. With 50-150x higher phase loading and the use of traditional adsorbents with thousands of times more surface area than SPME, the Sorbent Pen™ can fully extract difficult compounds from complex matrices providing superior sensitivity and reproducibility. Sorbent Pens are also available for performing Diffusive and Active air monitoring, making the Sorbent Pen technique extremely versatile. Our newly released SPR40 -Sample Preparation Rail promises to be a game changer for headspace sample preparation and general thermal desorption methods. Rather than desorbing a TD tube into a completely different instrument with separate traps, transfer lines, and rotary valves to have to clean and maintain, the SPR40 allows thermal desorption of Sorbent Pens directly into a GC or GCMS to allow dramatically improved recovery, consistency, and easy of maintenance. Watch for a new wave of applications coming out in 2019-2020 using the SPR40 Robotic inlet.

Our unmatched Silonite™ surface coatings continue to be perfected, resulting in the most consistent, durable, and inert coatings available for GC inlet systems and for mercury vapor handling without surface interactions. Silonite™ surface treatments play a vital role in achieving our ultimate goal; to provide our customers with complete solutions for "analytical grade" VOC and SVOC handling and inlet systems that can sample, store, and recover virtually all GCMS compatible compounds.

Finally, for US EPA Method TO-15 and China HJ-759, Entech is proud to be the only supplier that manufacturers and supports the complete solution for sampling and analysis of airborne contaminants using Silonite™ coated stainless steel canisters. Entech has assembled an extraordinary and talented team of Chemists and Service Engineers with a combined knowledge of over 200 years of laboratory and field experience – to provide our clients with premier customer service and on-site support. To our valued customers we would like to say thank you for your patronage through the years and we look forward to servicing your analytical needs for many years to come.

Sincerely,
Daniel B. Cardin – President



Entech Instruments is a leading developer and manufacturer of analytical instrumentation that supports professionals around the world in the Environmental, Industrial Hygiene, Food & Beverage, Product Testing, Forensics, and Clinical Analysis markets.

To provide solutions for such a diverse set of industry applications, Entech has assembled an extraordinary and talented team – a combined knowledge of over 200 years of laboratory and field experience – to provide our clients with premier customer service and on-site support. We invite you to share your application challenges and requirements so we can create a customized solution just for you.

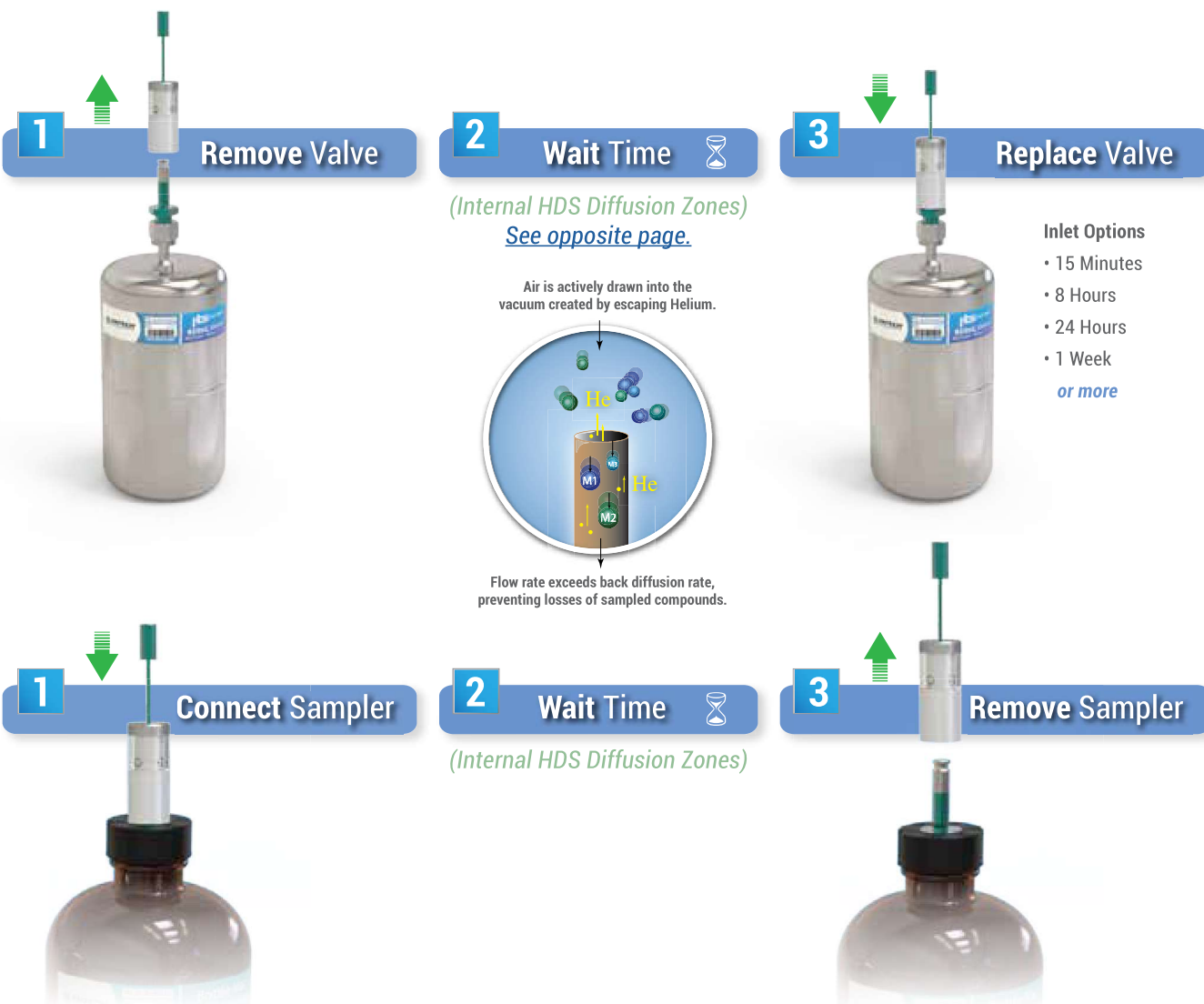
~ The Entech Team

HDS™ HELIUM DIFFUSION SAMPLING

Introducing Entech's breakthrough technology for whole air sample collection – **Helium Diffusion Sampling (HDS™)**. We now offer HDS™ active sampling solutions for indoor air monitoring that simplify the collection of airborne chemicals for GC and GC/MS analysis. Rather than performing a traditional vacuum sampling event, Bottle-Vacs™ are initially filled with helium, or helium with a recovery surrogate, and active sampling occurs in response to the controlled exchange of helium with air through a diffusion region. An HDS™ diffusion zone's internal diameter is 20–50 times larger than typical critical orifice samplers, so particulate plugging is virtually impossible. HDS™ eliminates the need for sampler calibration, as relative diffusion rates of Helium and air are virtually constant. And

unlike passive sampling with tubes – **where compounds lighter than Benzene are not recovered quantitatively** – HDS monitoring recovers all compounds heavier than Helium. Some important carcinogenic compounds quantitatively recovered using HDS that are not recoverable using passive tube sampling devices include: Vinyl Chloride, 1,3-Butadiene, and Acrolein. HDS™ Samplers also increase their weight as more air exchanges with Helium, allowing sample collection amounts to be determined gravimetrically in the laboratory for extremely accurate and defensible measurements.

Two indoor air HDS™ sampling versions are available from Entech, 1) Bottle-Vac Samplers (detailed below). Special HDS™ MicroValves that are optimized for standard sampling event durations – **the diffusion zone exists inside of the fitting**. 2) Controlled helium / air exchange with an external HDS™ diffusion zone fitting that is designed to attach directly to Bottle-Vacs™ and MiniCans™ with standard Micro-QT™ valves. Like the HDS™ MicroValves, these external HDS™ fittings feature a specific length or ID of the diffusion zone to provide an ideal sample fill duration and canister volume. It's that easy. HDS™ collects an air sample much slower than vacuum driven controllers, allowing smaller canisters and Bottle-Vacs™ to be used for long term sampling, at a substantially reduced cost. With HDS™, collection of whole air samples has never been this easy, economical, and reliable!





500mL HDS Bottle-Vac™ Sampler
PN 29-BV500AH8



Features

- No Calibration**
Diffusion zones are factory set and remain constant.
- No Sample Volume Guesswork**
Weighing the sampler after collection and again after evacuation determines collected sample volume.
- No Sample Losses**
Ultra-inert and compact sampling surfaces.
- No Sample Contamination**
Verified leak free with gauge prior to sampling.
- No Pumps & No Batteries**
Perfect for whole air sampling.

Bottle-Vac™ – Helium Diffusion Sampling

Description	Unit	Part #
500mL HDS Bottle-Vac™ Sampler (3 Hour)	EA	29-BV500AH3
500mL HDS Bottle-Vac™ Sampler (8 Hour)	EA	29-BV500AH8
500mL HDS Bottle-Vac™ Sampler (24 Hour)	EA	29-BV500AH24
1L HDS Bottle-Vac™ Sampler (8 Hour)	EA	29-BVL1AH8
1L HDS Bottle-Vac™ Sampler (24 Hour)	EA	29-BVL1AH24
1L HDS Bottle-Vac™ Sampler (1 Week)	EA	29-BVL1AH1W

HDS™ Indoor Air Samplers

Using Helium Diffusion Sampling into Silonite™ Canisters and Bottle-Vacs™ for indoor air monitoring has never been so easy and cost effective!

Introducing Entech's low-cost external HDS™ Samplers that allow any Silonite™ Canister or Bottle-Vac™ to be used to perform time integrated sampling both simply and cost-effectively. HDS™ utilizes a simple diffusion zone to control the exchange rate of helium and air, with diameters that are 20–50 times larger than typical critical orifice samplers, making particulate plugging virtually impossible.

HDS™ eliminates the need for sampler calibration, as the relative diffusion rate of Helium to air is virtually a constant. Unlike passive sampling with tubes – where compounds lighter than Benzene are not properly recovered – HDS™ monitors retain all compounds heavier than Helium. This allows even Ethane, Ethylene, and Acetylene to be collected quantitatively.

HDS™ Samplers also increase their weight as more air exchanges with Helium, so collected amounts can be determined in the laboratory gravimetrically for extremely accurate and defensible measurements. Just select the color coded sampler below and the required container size shown in the table to achieve the sampling duration desired. All of these new samplers can also be used to perform quick grab sampling (2–30 seconds) into containers that are shipped to the field under vacuum rather than being filled with helium. For more dusty locations, samplers are available with a built in filter.



*Bottle-Vac™ shown with code 1 (Silver)
HDS™ Indoor Air Sampler fitting. PN 39-HDS-F01*

HDS™ Indoor Air Samplers – Simple, Reliable, and Cost-effective. *It's the right choice!*

*HDS™ Indoor Air Samplers with
sampling range color codes.*



HDS™ MicroValve™ Samplers – Fill Durations*

* Durations shown for listed canisters and Bottle-Vac™ samplers with Micro-QT™ Valves.

HDS™ Code	HDS™ Sampler Part # with Filter	40mL Bottle-Vac™	125mL Bottle-Vac™	250mL Bottle-Vac™	500mL Bottle-Vac™	1L Bottle-Vac™	450mL MiniCan™	1L MiniCan™	1.4L MiniCan™
1 – Silver	39-HDS-F01	–	8 Hours	–	1 Day	–	1 Day	–	–
2 – Red	39-HDS-F02	4 Hours	–	1 Day	–	–	–	–	1 Week
3 – Blue	39-HDS-F03	–	–	–	–	1 Week	–	1 Week	–
4 – Black	39-HDS-F04	1 Day	–	1 Week	2 Weeks	–	–	–	1 Month