



# Environmental Air Monitoring

Products for HRVOCs and VOCs in Air

*Engineered Solutions, Guaranteed Results.*



WASSON-ECE  
INSTRUMENTATION

# Air Concentration System

## Concentrator Product Features/Data

- EPA Method TO-15 compliant
- Concentration up to 1000x
- Single stage fast trapping
- Samples canisters and Tedlar™ bags
- User defined methods
- Automated internal standard injection
- RSD <5%
- 6-point linearity; R2=0.999
- Handles load volumes 100 to 1,000 mL
- Trapping temperature of 35°C
- Automated leak test
- Touch screen interface
- Heated valve oven (130°C max)

## W500x-II: Ambient Air Concentrator

Wasson-ECE provides a simple, concentration system for air monitoring analyses without the need for cryogenics. Designed for low maintenance and ease of use, this versatile system will work with canisters, Tedlar bags, or direct connection to process streams. The W500x-II includes the following features:

### Single Stage Trapping

Our proprietary single stage trap allows components to be concentrated and desorbed in one step for fast sample throughput without refocusing and without sacrificing peak width or sensitivity.

### Ambient Temperature Trapping (No Cryogenics)

The concentrator utilizes a proprietary trapping technique that eliminates the need for cryogenic cooling. The sorbent material traps volatile organic compounds at 35°C.

## CM500x Control Module

The CM500x Control Module features a user friendly touch-screen interface and allows the concentrator to be controlled without the use of a separate desktop computer. The CM500x main screen displays temperatures, flow rates, and pressures in real-time for easy system monitoring. Additional features include an automated leak test to ensure all connections are leak tight and the ability to choose how many pump-purge cycles are performed prior to sample loading to reduce carryover and cross-contamination.

## AS500x Concentrator Auto-Sampler

The AS500x Concentrator Auto-Sampler can be added to the W500x-II for auto-sampling of 12 canisters or bags. The CM500x control module will automatically detect when the AS500x is connected and allows the user to easily define sequences. The auto-sampling valves are housed in an isothermal heated oven (130°C max) and a heat traced line delivers sample directly to the W500x-II valve oven.



# Tracer Analyzer

## Near Real-time Analysis

Dual trap design allows for samples to be collected and desorbed to the GC for analysis every 100 seconds. By obtaining results more rapidly the user can find leaks with greater accuracy.

## Serviceability

Instrument panels can be removed quickly and easily in confined spaces, such as mobile labs. Serviceable items are mounted on the front of the instrument for routine maintenance.

## Remote Support Capability

Using remote login technology, Wasson-ECE engineers are able to connect to the system to provide support in the field.

## Reliability

Wasson-ECE has over 25 years of experience building chromatography instrumentation. Combine this with an Agilent Technologies GC and the level of reliability and quality is unsurpassed.

The Wasson-ECE Tracer Analyzer System is the industry standard for low level perfluorinated tracer analysis.

Tracer tagging technology has become an increasingly popular method of finding leaks and tracing flow paths in high voltage cables, hazardous waste containers, interstate natural gas pipelines, and oil wells.

Wasson-ECE provides the industry standard in turn-key mobile tracer detection systems. The system comes fully configured with control and data analysis software that is interfaced with GPS mapping software. The mapping software allows the user to see a visual record of where samples were taken and leak status.

The system is tracer specific and configurable to most perfluorinated tracer compounds available. With femtoliter per liter (fL/L) sensitivity, the system automatically calibrates on the background ambient concentration of the tracer, allowing system alarms to be set relative to the background signal. Designed to work efficiently in a mobile lab environment, the system is configured with removable exterior panels for quick and easy access to all critical parts for maintenance.

Fast multi-dimensional chromatography delivers near real time analysis. A sample is collected and delivered continuously to the detector once every 100 seconds. The analyzer software compares the size of the peak to the baseline calibration and reports data status in two ways. A color coded data point is plotted on a GPS interfaced map indicating if the signal is positive or neutral and an audible alarm is sounded if a leak is detected.



# TO-Clean Canister Cleaning System

## Product Features

- EPA Method TO-14A/15 compliant
- Twelve 6L canister capacity
- Embedded touch screen controller
- Automated system leak test
- Electronic valve control
- Custom-built trays for different canister sizes
- Up to 10 user defined methods
- Isothermal oven
- Edwards RV-8 vacuum pump capable of system pressure of 40 mTorr or optional upgrade to dry pump
- Orbital welded stainless steel manifold
- Electronic pressure transducers with digital readout
- Cold trap and humidifier

TO-Clean is a revolutionary canister cleaning system developed by Wasson-ECE Instrumentation.

The TO-Clean Canister Cleaner is a fully automated system designed to take the guesswork out of canister cleaning. This system will increase lab efficiency with features such as a twelve 6-liter canister capacity oven and an easy to use touch screen. The TO-Clean also comes with an automated leak check method and diagnostics screen to ensure optimal system operation. This high performance instrument is easy to use and meets EPA Method TO-14A/15 specifications.

### Screen Captures

The screenshots show the following interface elements:

- Load Method:** A list with 'TOClean' selected, 'Fast Clean Method', 'Test Method', and 'Default'. Buttons for 'Load', 'Cancel', and 'Delete' are present.
- Cycle/Times:** 'Number of Cycles: 3', 'Cycle Number: 1', 'Low Pressure Cycle Time: 1:00 min', and 'High Pressure Cycle Time: 1:00 min'. 'Accept' and 'Cancel' buttons are at the bottom.
- Pressure:** 'Cycle Number: 1', 'Charge to Pressure: 30 PSI', and 'Vacuum Pressure: 200 mTorr'. 'Accept' and 'Cancel' buttons are at the bottom.
- Leak Test:** 'Leak Test Status', 'Pressure: 12.23 PSIG', 'Pressure Change: 0.23 PSIG', and 'Time: 10:00 min'. A 'Cancel' button is at the bottom.



## Embedded Touch-Screen Controller

An on-board touch screen controller makes system operation as easy as pressing start. The controller allows the user to define method parameters including: number of cycles, pressure, and soak times. Up to ten different methods can be saved and are accessible for later use.

# Tedlar™ Bag Auto-Sampler/Tedlar™ Bag Sampler

The Tedlar™ Bag Auto-Sampler provides automated sampling of up to 16 sample bags.

The Wasson-ECE Tedlar™ Bag Auto-Sampler allows the user to sample up to 16 bags. The system comes with a vacuum pump and all of the necessary hardware.

The auto-sampler is controlled using the OpenLAB ChemStation sequence editor, making sample programming simple. Please contact Wasson-ECE if you are using a different data system and we can develop a custom software solution to work with your system.



Wasson-ECE Instrumentation has created a Tedlar™ Bag Sampler that eliminates sample contamination.

The Tedlar™ Bag Sampler is designed to introduce sample into Tedlar™ bags using negative pressure, which eliminates the risk of sample contamination from the pump. The bag sampler will accommodate bags up to 10L. The system includes a water proof case, battery powered programmable pump and ten 10L bags.

## Programmable Vacuum Pump

The programmable vacuum pump allows the user to set sample size by programming the sample duration.

## Product Features

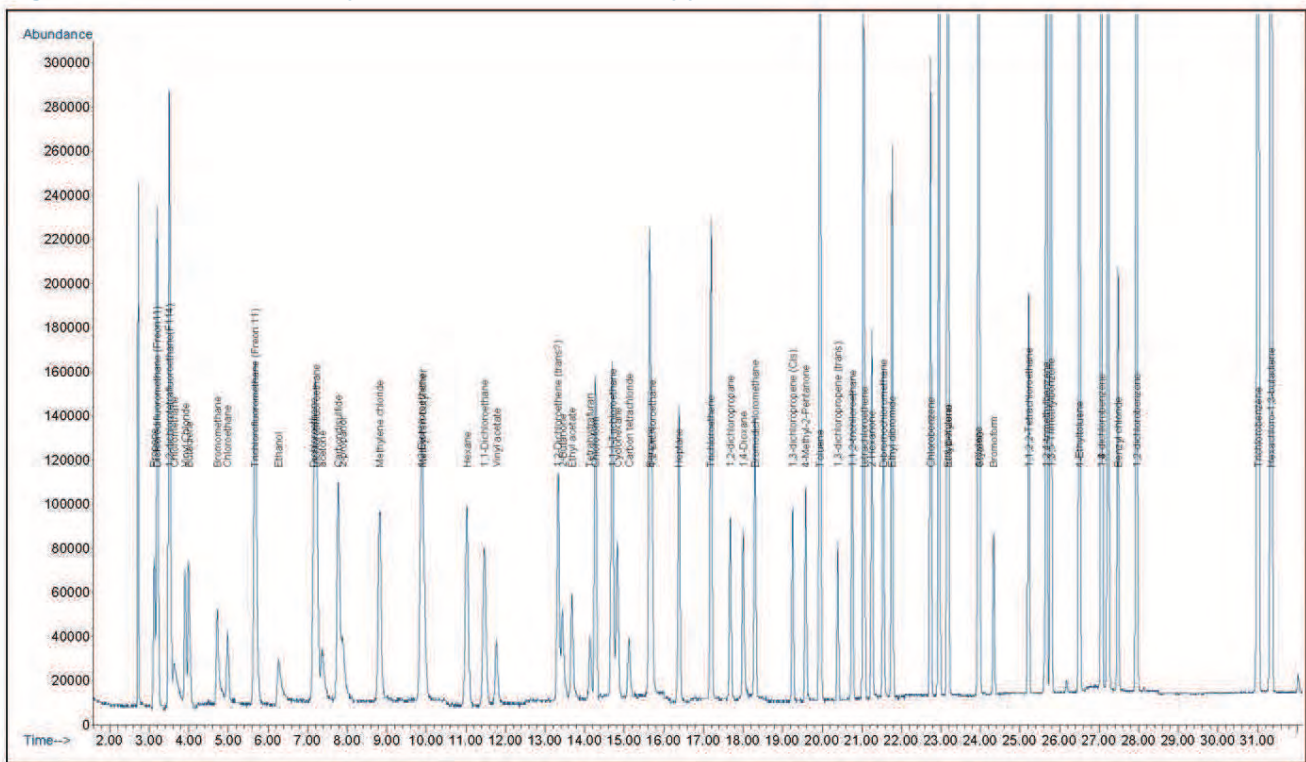
- 16 available sample points
- Agilent OpenLAB ChemStation control
- Increased reproducibility
- Diaphragm vacuum pump
- 1/4" bulkhead connections
- Optional gas sample valve
- Dimensions: W24" X H32" X D12"
- Power requirements defined by the customer

## Analysis of EPA Method TO-15, 62-Component Standard by Ambient Temperature Concentration and GC/MS

The Wasson-ECE Ambient Concentrator allows the user to achieve 999 mL load volumes in accordance with EPA method TO-15 performance criteria without the use of cryogenic cooling or cryogenic refocusing. This provides a system that requires less maintenance and a more cost effective operation. Method detection limits of 0.005 to 0.300 ppb can be achieved with load volumes of 200 mL on a GC/MS.

Technique : Ambient Air Concentrator and GC/MS  
 Column : Capillary column  
 Oven : Multi-level temperature program, 35°C to 200°C  
 Injection : Split/splitless operated in splitless mode  
 Detector : Mass Spec, Selective Ion Mode (SIM)  
 Carrier Gas : Helium  
 Injection Vol : 200 mL, from concentrator  
 Concentrator : Load temp 35°C, Desorb temp 160°C  
 Trap : Wasson-ECE multi-bed carbon trap, WPN#AT001  
 Refocus : None  
 RSD : Area Count 5%, Retention Time 0.1%  
 MDL Range : 0.005 to 0.300 ppb

Figure 1: TO-15, 62 Component Standard, 0.500 ppb, 200 mL Load



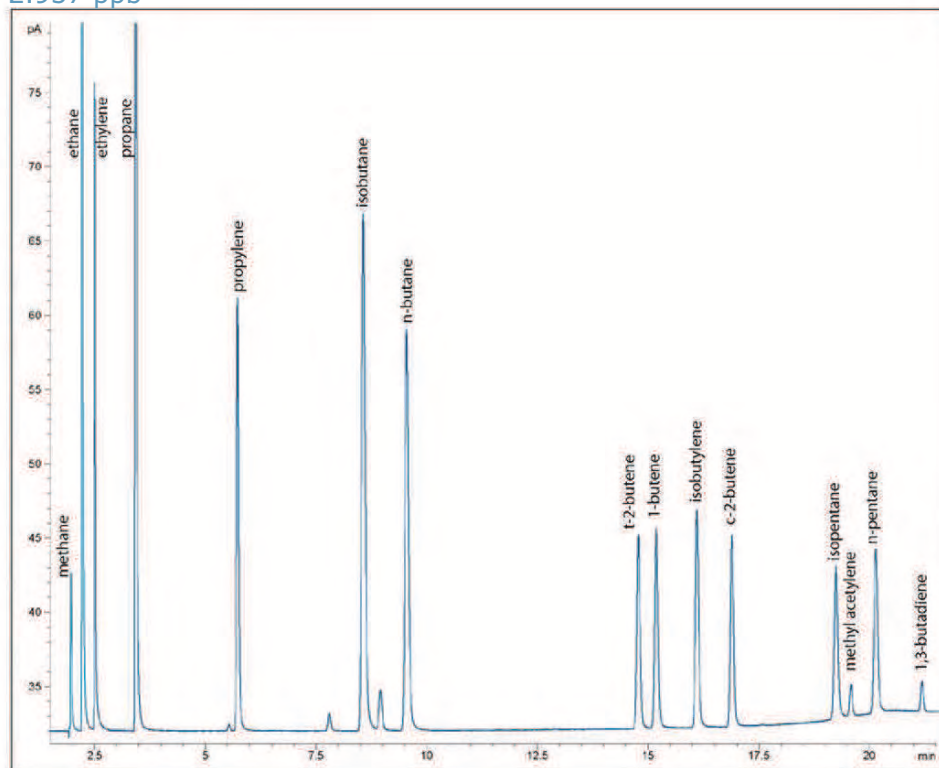
# HRVOCs in Air

## Analysis of Low Level Highly Reactive Volatile Organic Compounds (HRVOCs) by Ambient Concentration and GC/FID

HRVOCs can be analyzed from many sources including sample cylinders, Tedlar™ bags, gases purged from water and even directly from the air using an online concentrator sampling system. This application note shows results of gases stripped from cooling tower water and brought to the instrument in Tedlar™ bags.

Technique : Ambient Concentrator and GC/FID  
Column : Wasson PN# KC5  
Oven : Multi level program  
Injection : Split/splitless inlet operated in split mode  
Detector : FID  
Carrier Gas : Helium  
Injection Vol : 250 mL, from concentrator  
Concentrator : Load temp 35°C, Desorb Temp 180°C  
Trap : Wasson-ECE multi-bed carbon trap, WPN#AT001  
RSD : Area Count 3.107%, Retention Time 0.02%

Figure 2: Wasson-ECE HRVOC Standard 141 to 293 ppb, LDL 0.487 to 2.937 ppb



## Wasson-ECE Instrumentation

Wasson-ECE specializes in configuring and modifying new or existing GC systems exclusively from Agilent Technologies to become guaranteed, turn-key analytical systems. Our customers describe their objectives and their samples: analytes, concentration ranges, phases, temperature, throughput, and any special needs. From this dialog we configure a task specific instrument. We add extra ovens, valves, plumbing, flow control, columns, electronics, software, etc., to yield a complete solution. This saves our clients valuable time and delivers instruments that are state-of-the-art and ready for use upon installation.

The complete analytical method is developed, tested, and documented utilizing our experience working with numerous companies with similar needs and goals. The resulting chromatograms and reports are inspected by our application chemists and you, to ensure system performance and design quality. Our field engineers then install each system and provide training. After installation, and throughout the life of the chromatograph, our support chemists are ready to help. We can assist with application details, questions, training, calibration, maintenance, and on-site service. Wasson-ECE brings experience and efficiency to your project, giving you confidence in the quality of your results.



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