



# PFAS and Chemical Portable Fast Gas Chromatograph System

Model: PFAS-TA-F

## Features

- Detects PFAS and other Hydrocarbons – C4 to C25
- Portable - Field Ready
- Self Contained
  - » Internal Sample Pump
  - » Integrated Computer
- Quantitative
- Qualitative Analysis
- Locking Sensor Position
- Exceptional Sensitivity
- Analyze Vapors in 30 - 60 Seconds
- Data Storage and Archive
- Computer Interface USB Port
- Display on Laptop
- DC Power with Charger

This field model provides immediate measurement of PFOA and PFOS. Laboratory analysis is expensive and may take a week or more for results.

Rapid, on-the-spot PFAS contamination testing below the EPA's limit and can be configured for either water or air samples.

A proprietary Surface Acoustic Wave (SAW) detector results in a system with previously unattainable sensitivity in a portable low-cost package.

## Description

- » Carrier Gas: Helium, typical 200 - 300 tests per day/charge
- » Analysis Time: 30 – 60 Seconds
- » Display: Windows any version

Utilizing a trap and helium carrier gas, the PFAS-TA-F injects samples into a heated column and separation takes place. Materials sequentially exit the column and are deposited on the SAW detector. The deposit results in a change in the oscillating frequency of the resonator directly proportional to the mass.

## Applications

The PFAS-TA-F Vapor detector and analyzer is a field ready fully integrated system for air or water. With an internal sampler pump and integrated computer, the **PFAS-TA-F identifies vapors as low as 1 PPT (parts-per-trillion) in just 5-60 seconds. EPA's proposed regulation limit for PFOA and PFOS is 4 ppt.**



## TECHNICAL ASSOCIATES OVERHOFF TECHNOLOGY

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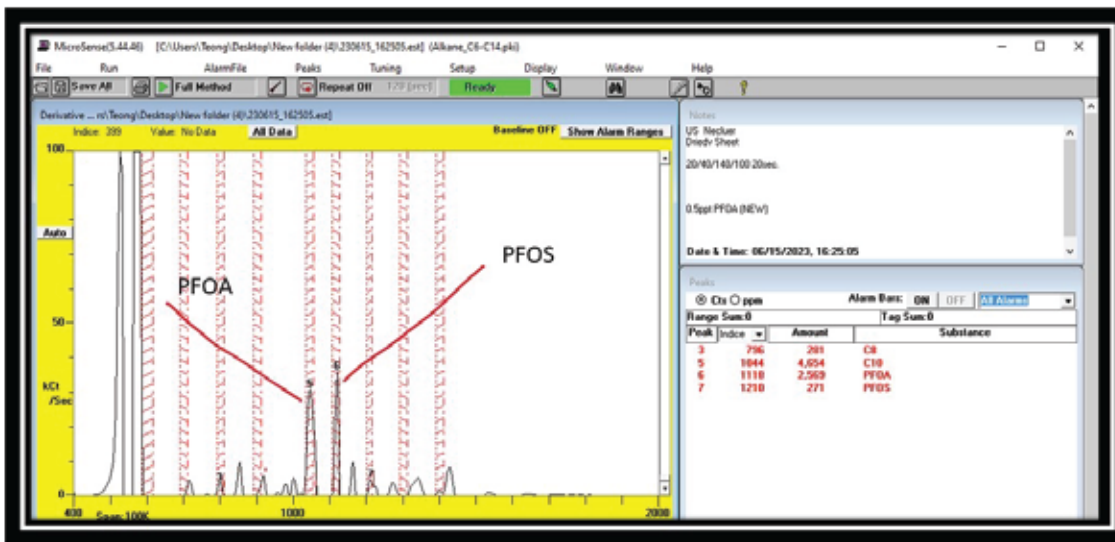
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## The PFAS and Chemical Detection System Explained

Sheet of AEM membrane  
(20.40.140.100 Pump 10sec) Weight 364mg slice



Weight is AEM Membrane: 364mg slice — Heated to 32 degrees C  
The graphic shows that there is PFOA and PFOS present

### Unique Detection

- Recognizes full chemical signature
- Provides a complete chemical profile
- Has an expandable library of 700+ chemical signatures
- Ultra-high-speed chromatography
- Same time pattern recognition and trace detection
- Adapts and learns to recognize threat signatures



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## How It Works

- A Q surface acoustic wave (SAW) interferometer is the key component
- Individual analyte peak half-width is measured in seconds
- Every picogram of material is collected on the surface of the temperature-controlled quartz crystal.
- An image of the chemical pattern is obtained from the frequency of the SAW resonator.
- The SAW interferometer produces a resonance frequency proportional to the amount of column effluent deposited on the quartz surface.
- A complex ambient environment is viewed and recognized via a its image

This unique method and function is a rapid and accurate process for PFAS and other chemical detection. The benchtop model **PFAS-L** and the field model **PFAS-F** provide researchers with a process that stands out from other market methods.

## Specifications

<b>Detector:</b>	Surface Acoustic Wave (SAW) Quartz microbalance
<b>Dynamic Range:</b>	10 <sup>5</sup>
<b>Temperature:</b>	0° C to 150° C, programmable
<b>Detects:</b>	C4 to C25
<b>Sensitivity:</b>	PFAS-F 1 part per trillion in 5-60 seconds. Parts per billion for many compounds in 10 seconds Sensitivity will vary by compound sampling time, matrix, interferences and detector temperature ranges.
<b>Accuracy:</b>	<2% standard deviation
<b>Dynamic Range:</b>	10 <sup>6</sup> ±10%
<b>Recycle Time:</b>	30 sec minimum
<b>Sampling:</b>	
<b>Sample Pump:</b>	Internal
<b>Sample Introduction:</b>	~.5 ml/sec
<b>Sample Time:</b>	1-300 seconds, User Settable
<b>Sample Absorption:</b>	Internal tenax preconcentrator
<b>Carrier Gas:</b>	Helium, (Min 99.999% purity, #6) Replaceable Cylinder 95cc at 17.6MPz (2560 psi) Typical use is 200 - 300 tests per day on one helium charge
<b>Compound Identification:</b>	Automatic with user calibration



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### Column:

Limits: 35°C to 225°C -depending on column

Ramping: 1 – 18° C/sec

Display: 10.8 in Clear Type Full HJD Plus

Resolution: 1920 x 1280

Screen: 10 Point Multi-Touch Surface Pen

### Environment:

Operating Temperature: 32°F to 105° (0°C to 40°C)

Relative Humidity: 0 – 95% non-condensing

Power: Battery Pack: 28V DC, 16 Ahr Lithium Ion (5 hr typical)

Charger Power: 100 – 127 VAC at 3 amps – 50/60 Hz;  
200 - 240 VAC at 1.5 amps – 50/50 Hz

### Inlet Connection / Temperature

Inlet Port: Stainless steel LUER

Temperature: 50°C to 200°C

Data Display, Storage and Transfer: Laptop and USB    USB Port

## Weight and Dimensions

### Display

Weight: 1.4 lbs            (64 g)  
Length: 10.52 in        (26.7 cm)  
Width: 7.4 in            (18.7 cm)  
Thickness: .34 in        (.86 cm)

### Head

Weight: 5.7 lbs            (2.6 kg)  
Length: 15.0 in          (38.1 cm)  
Width: 4.3 in            (10.9 cm)  
Height: 6.8 in            (17.3 cm)

### Support

Weight: 8.7 lbs            (8.5 kg)  
Length: 12.5 in          (31.8 cm)  
Width: 9.7 in            (26.4 cm)  
Height: 5.8 in            (14.5 cm)

### Charger

Weight: 7.7 lbs            (3.5 kg)  
Length: 13.5 in          (34.25 cm)  
Width: 9.7 in            (14 cm)  
Height: 3.7 in            (9.5 cm)



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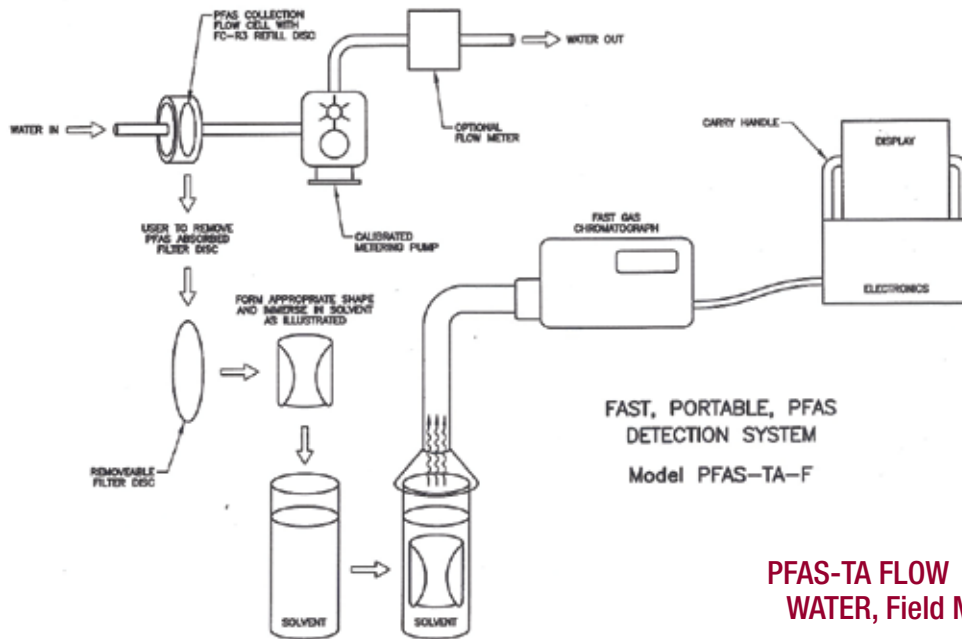


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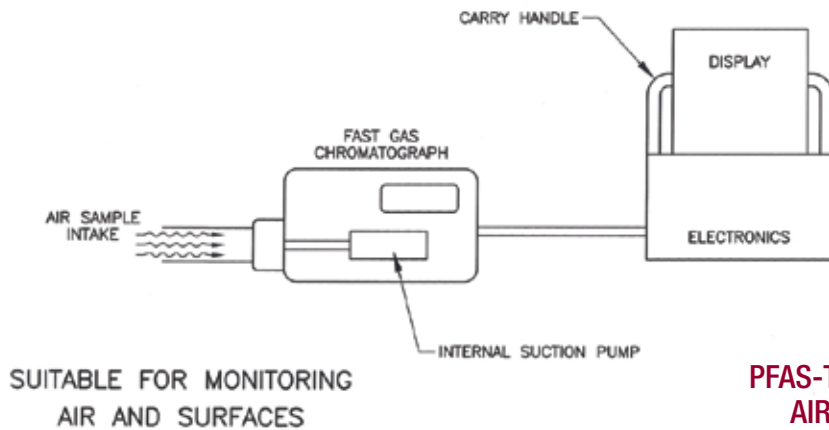
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DETECTION SYSTEM  
Model PFAS-TA-F



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