

# GUARDION™

## NEXT GENERATION PORTABLE GC/MS CHEMICAL IDENTIFIER AND MIXTURE ANALYSIS SYSTEM



### Feature Highlights

- **Utilizes GC/MS technology to identify volatile and semi-volatile organic compounds including CWAs and TICs**
- **Start up and ready to operate in 5 minutes or less**
- **Analysis in 3 minutes or less allows for up to 30 sample runs on a single battery charge**
- **Lightweight, compact and ruggedized for field operation**
- **Universal, broad-based sample collection and injection technique accommodates gas, liquid, and solid sampling**

GUARDION utilizes high speed, high-resolution gas chromatography (GC) and a revolutionary miniaturized toroidal ion trap mass spectrometer (MS) to identify volatile and semi-volatile organic compounds in complex gases, vapors, liquids and solids.

GUARDION is hand-portable and ruggedized for use in a hot zone or extreme environments. Its high speed GC combined with a miniaturized toroidal ion trap mass spectrometer redefines the size, weight, and speed for hand-portable GC/MS technology.

GUARDION is ready to operate within five minutes from a cold start. The CUSTODION™, a solid phase microextraction (SPME) fiber syringe, is used for simple sample collection and injection into the GC/MS system. Advanced low thermal mass GC technology enables rapid heating and cooling of the GC column, allowing 12-15 samples to be analyzed per hour.

GUARDION features both a touch screen and keypad for operation, providing ease-of-use in personal protective gear. All software required for sample identification and reporting is on board the system. It includes chemical warfare agent and toxic industrial chemical libraries as well as a hazards database for rapid decision support. Additionally, the system can operate from a single battery charge for up to 3 hours, depending on the number of samples analyzed.

The GUARDION vacuum system includes a ruggedized, low-maintenance turbomolecular pump that does not need to be replaced. The direct GC to MS interface eliminates the need for bake-out, minimizing logistical burden. Easy-to-use software reduces training time.

GUARDION is backed by first-rate service, training and 24/7/365 ReachBackID™ technical support to ensure optimum product performance.

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## Gas Chromatography/Mass Spectrometry (GC/MS)

GC/MS is considered the "gold standard" for chemical identification. This technique couples gas chromatography and mass spectrometry to identify single or multiple substances within complex samples. Additionally, it can identify trace compounds that can go undetected by other technologies.

## Miniaturized toroidal ion trap

The toroidal trapping space of GUARDION's unique and revolutionary ion trap MS leads to reduced weight and power consumption, as well as use of a rapid, low-maintenance vacuum pumping system. GUARDION's advanced software ensures that its mass spectra can be used in conjunction with the NIST/EPA/NIH mass spectral library.

## Technical Data

### General Specifications

Technology	Gas Chromatography/Mass Spectrometry
Size	39 x 38 x 22 cm (15.5 x 15 x 9 in) excluding handle
Weight	14.6kg (32 lbs.) including battery
Gas chromatograph	Helium carrier gas supply, internal disposable cartridge or external cylinder MXT-5 column, 5-m, 0.1mm i.d., 0.4 µm d <sub>f</sub> Temperature programming up to 300°C, ramp rate 120°C/min Split/splitless injection
Mass spectrometer	Toroidal ion trap
Vacuum system	Turbomolecular vacuum pump with diaphragm roughing pump
Sample collection	Solid-Phase Microextraction (SPME) exposure to environment, head space, Tedlar® bag, liquid, or solution
Environmental features	System is sealed for operation in the hot zone
Decontamination via	Spray/wipe down
Operating ranges	Operational in extreme weather and temperatures ranging from 32°F to 113°F (0°C to 45°C). Humidity 0 to 95% RH
User interface application for use	The embedded GUARDION software is streamlined for rapid identification of substances in complex mixtures. This easy-to-use software is designed for use by non-experts and is optimized for operation in full PPE. Network enabled. Windows® CE operating system, PEAC® chemical hazards database
Controller	Touch-screen embedded system Finger, stylus, or keypad navigation
Power	Removable, rechargeable Li-ion battery (2 – 3 hours run time) External power supply 24-V vehicle power adaptor
External data storage	Full USB support Flash devices
Input/output devices	Mouse and keyboard compatible Ethernet capable

### Available Options

Software	CHROMION™ advanced GC/MS software for PC
Libraries	NIST/EPA/NIH Mass Spectral Library
Wireless capability	Bluetooth™ communications between GUARDION unit and PC
Multiple colors available	



For product information, sales, or service, please go to [www.smithsdetection.com/locations](http://www.smithsdetection.com/locations)

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