

*Enter the Tiger*

*introducing the ...*



# Enter the Tiger

**During the closing years** of the last millennium, the great, primal gas chromatograph designs came to dominate the industrial landscape. These hard-working brutes served well. But the technical environment changed radically. To fit the requirements of this new environment, the mammoth GC of the past had to evolve into a smaller, faster more agile breed of analyzer.

Enter the Tiger . . . **the microFAST™ GC** from ASI. The **microFAST™ GC** is small but ferociously powerful. Fast yet extraordinarily reliable. Friendly to the user, but tough enough for any application. The **microFAST™ GC** is the next evolutionary and revolutionary achievement in the development of the gas chromatograph.



## The microFAST™ GC is . . .

**Small** – really small – the **microFAST™ GC** is actually about the size of a shoebox with a footprint of approximately one square foot.

**Fast** – really, really fast – speed of analysis is typically 10 times faster than previous technologies. We're talking seconds not minutes.

**Lightweight** – approximately 12 pounds – this gas chromatograph is very light on its feet – a truly transportable GC.

**Tough** – this little GC is no pussycat. The **microFAST™ GC** is built rugged enough for on-line, at-line, lab, and field use.

**Economical** – the **microFAST™ GC** was born with the eye of the tiger, but this bantamweight fighter isn't hungry. Power consumption is less than 300 watts even at start-up. That saves on AC and makes field use with batteries or automobile AC inverters just an ordinary workout.

**Easy to Use** – installation and operation are simple and easy. A desktop or laptop PC is the primary user interface. Chromatograms are accessed in real time and viewed on the PC monitor.





## The Eye of The Tiger

The *microFAST<sup>TM</sup>* GC is a programmed temperature gas chromatograph. Sample acquisition is achieved using a syringe or valve inlets, leading to a flash evaporator. Sample is delivered to an adsorbent trap for concentration. The concentrated sample is simultaneously delivered to dual capillary columns and dual flame ionization detectors (FID).

Gas phase hydrocarbon samples containing measurement targets from high parts per million down to sub part per billion can be measured. Liquid hydrocarbons diluted in a volatile liquid solvent can be measured in the same concentration ranges. Configurations of trap, column and analytical method can be made for virtually any hydrocarbon from ethane to C<sub>24</sub>. Of course, headspace, liquid extract and SP/ME samples will fit within the measurement range.



## The Tale of The Tape

- Wide measurement range - % to ppb
- Quick Turnarounds - 10 times faster
- Fewer analyzers to do the same work
- Reliable - highly repeatable
- Small space required - no big shelters
- Truly portable - lightweight & low-power
- Highly adaptable - in-lab, on-line & at-line
- Reduces costs - boosts productivity

## The Nature of the Breed

The *microFAST<sup>TM</sup>* GC is a highly selective and sensitive specialty gas chromatograph. In the hands of a qualified user it is capable of performing very fast, low level hydrocarbon measurements in laboratory or field environments. With its lightning speed of analysis, small size and light weight, the *microFAST<sup>TM</sup>* GC offers significant cost and productivity advantages over more traditional GC designs.

The *microFAST<sup>TM</sup>* GC's speed of analysis is 10 times faster than competing GC designs. That means very quick turnarounds. In many applications fewer instruments will be required to do the same work. Capital costs can be reduced. Production and revenue can be increased.

The small size of the *microFAST<sup>TM</sup>* GC will result in increased lab bench density and reduced space requirements for GC instrumentation in any application. The *microFAST<sup>TM</sup>* GC's footprint is only about one square foot.

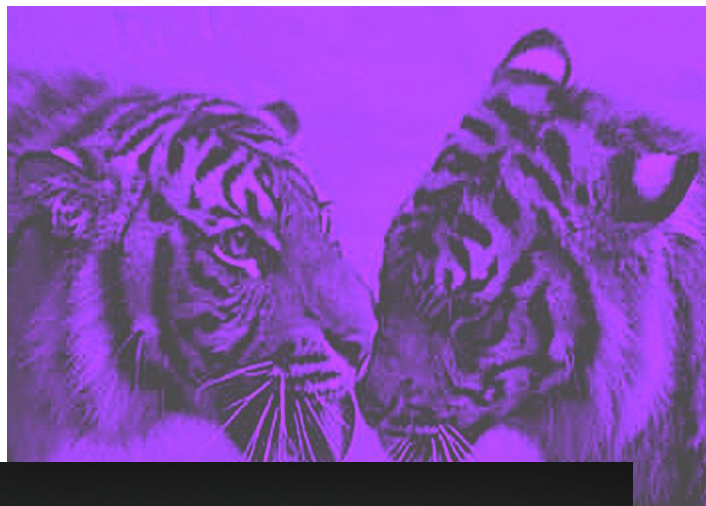
The instrument's small size, combined with its 12-lb weight will also enable field application transportability. Since the same analyzer can be easily carried to more than one measurement point, fewer analyzers may be required for on-line and at-line applications as well.



## Friendly to the User

Installation and operation of the *microFAST™ GC* are simple and easy. A desktop or laptop PC is the primary user interface. Computers connect to the analyzer through a standard RS232 port on the analyzer's back panel. Windows™ compatible software supplied on CD enables simple point-and-click PC to analyzer setup.

All analyzer operation, monitoring and troubleshooting can be performed via PC. Chromatograms are accessed in real time and viewed on the PC monitor with available Agilent EZChrom Elite® software. Desktop PCs are recommended for stationary applications; laptops, of course, for portable use.



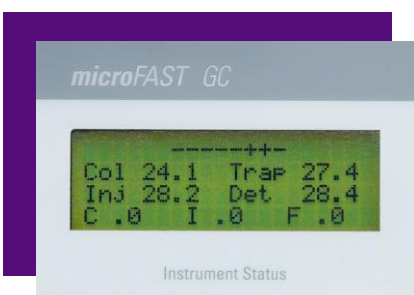
*The microFAST™ GC with laptop PC interface. Chromatogram read-out is displayed on laptop monitor.*



*The microFAST™ GC Back Panel. RS232 Connector is on the right. Autosampler Connector is below it.*

The *microFAST™ GC*'s own front panel design also assists operation. The panel includes an instrument status display and column temperature status LEDs. The instrument status display provides temperatures in °C for Columns, Trap, Injection Port and Detector. Pressure readings for Columns, Injector and Detector are also displayed.

*The microFAST™ GC Front Panel. Injection sampling port is shown at the top of the photo. Instrument status display is lower left. Column temperature LEDs are lower right.*



*Close-up of microFAST™ GC's Instrument Status Display. Top two lines display temperatures in °C for Columns, Trap, Injection Port and Detector. Bottom line indicates pressure of Columns (C), Injector (I) and the Detector (F).*



Infometrix™ software is available to provide analyzer system suitability and condition monitoring and detect real analytical sample concentration events in the plant.

Automatic discrete liquid injection sampling is easily accomplished using a handy port at the front of the *microFAST™ GC*. A proprietary, liquid Autosampler system is available for applications requiring high throughput.

The COBRA™ Autosampler, manufactured by Central Development Company, is simple, self-contained and connects to the *microFAST™ GC* using a ready port on the analyzer's back panel.

***The microFAST™ GC Autosampler is simple, self-contained and connects to the analyzer using a ready port on the back panel. (See the Back Panel photo on opposing page.)***

## ***Modest Habitat and Feeding Requirements***

The large shelters needed for many on-line and at-line applications may also be eliminated. The truly portable *microFAST™ GC* will allow the user to make many measurements without deploying any fixed-position analyzers. If shelters are needed they will certainly be much smaller, with lightweight analyzers that can be easily redeployed for other use, or removed for maintenance and repair.

The *microFAST™ GC*'s power consumption is less than 300 watts even at start-up. That results in significant energy savings on AC power and enables field use with batteries or automobile AC inverters.

All these features and benefits translate into significant cost reductions, increased productivity and provide the user with a unique opportunity to apply this innovative technology in a wide range of applications.

The speedy *microFAST™ GC* will also allow expert chromatographers to achieve more, sooner as they pursue their own proprietary methods development.



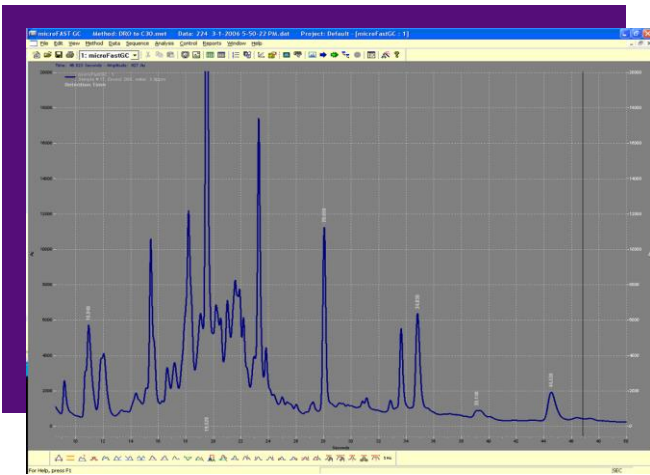
## A Highly Adaptable Species

The *microFAST*<sup>TM</sup> GC has the capacity to adapt successfully in a wide range of application environments.

- Hydrocarbon and other chemical processing
- Pipeline transportation of hydrocarbon products
- Pharmaceutical production
- Food and beverage processing
- Environmental testing services
- Regulatory compliance testing
- Analytical research and development
- HRVOC sensing methods
- Fixed-base, fence-line monitoring

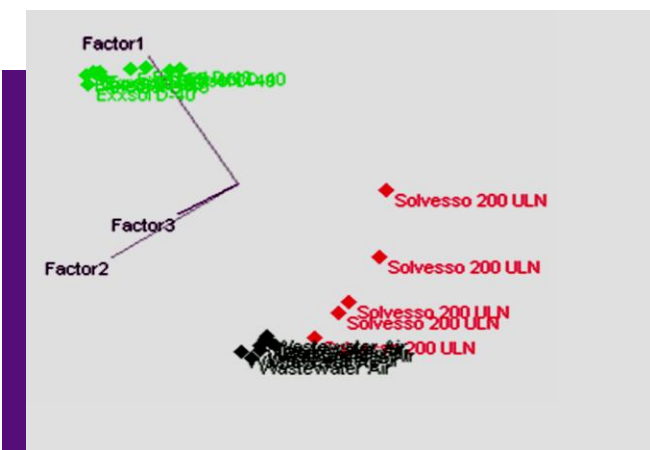


- Solvent extraction methods
- Ambient air gas methods
- Soil gas and soil solvent extractions
- Ambient air sampling
- Medical breath analysis
- Mobile labs for ozone precursors in air
- Field-based spill and leak detection
- Environmental applications
- Homeland Security applications



## Naphtha Product Spill Detection

*microFAST* GC<sup>TM</sup> coupled with Infometrix Pirouette chemometric software easily detects and identifies normal background from spill and leak situations in a plant. The Principal Component Analysis Scores plot below shows the ability for not only detecting the event but also identifying the production source (product) of the leak. Fast results enable fast remediation.



## PCA Scores Plot

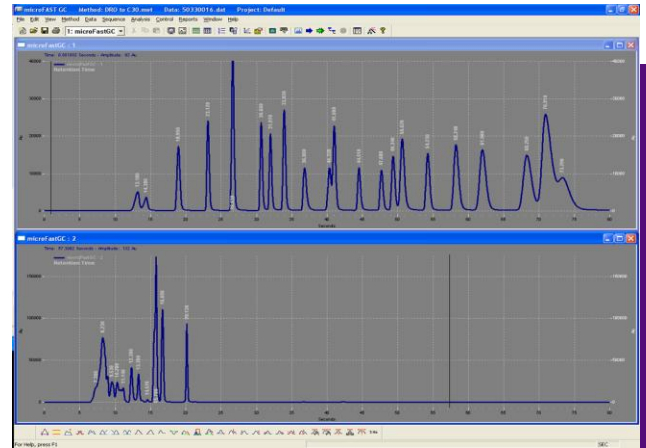
The chart shows definitive sample clusters representing the *microFAST* GC<sup>TM</sup> chromatographic result above. Background samples represented in dark green always appear the same. Product leaks are definitively clustered together by product. The light green cluster represents a distinctive product at similar concentrations. The red data points represent another product at gradually increasing concentration. Thus, not only are spill & leak detection provided but also product identification and quantity.



The *microFAST™ GC* – not the sort of *animal* you meet everyday. Fast, small, light, highly adaptable and very reliable. Doesn't take up much space. Doesn't eat up much energy. Boosts productivity. Reduces costs. It's no man-eater. In fact it's quite friendly to the user. You owe it to yourself to examine this new breed of gas chromatograph more closely. To learn more about the *microFAST™ GC* visit [www.microFASTGC.com](http://www.microFASTGC.com) or, email: [info@microFASTGC.com](mailto:info@microFASTGC.com).

### HRVOC Ambient Air Monitoring

Calibration standards for highly reactive volatile organic carbons demonstrate the dual channel capability of *microFAST GC™*. Most of the speciated components are shown on Channel 1 while total non-methane hydrocarbons and o-xylene are measured on the second column Channel 2. Fast analysis enables 3 measurements in 10 minutes for average value reports for local regulators. The limit of detection is as low as 0.5 ppb for some components with most at about 5 ppb.





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*Represented by:*

*For a complete, up-to-date listing of U.S. Sales Representatives by region,  
and a Tiger's Feast of additional information about the microFAST™ GC, visit:  
[www.microfastgc.com](http://www.microfastgc.com)*

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