



Product Introduction

GC-MS Product Line

Freya Wang

Portable GC-MS10



Advanced Portable GC-MS10 System

Total weight <20 kg (with battery & gas)

Supports:

- Vehicle-mounted
- Handheld
- Backpack operation

Compatible with portable headspace sampling system

High separation efficiency

Accurate qualitative & quantitative analysis

For: Emergency response, environmental monitoring,
on-site chemical analysis



Reliable Performance in Challenging Field Conditions



Environmental Adaptability

- Wide temperature range operation
- IP43 protection rating
- Rugged field-ready design
- Reliable battery operation

Analytical Performance

- High sensitivity detection
- Accurate quantification
- Fast analysis cycle
- Stable long-term operation

Validated for environmental emergency monitoring and field analysis applications

Product Introduction - Features



Quick-Detach GC & MS Modules

Modular design allows flexible column configuration



Split/Splitless Inlet

Standard inlet supports multiple injection modes



High-Temp Ceramic Ion Source

Efficient ionization with dual filaments, easy maintenance



Valve Switching Injection System

Built-in adsorption & loop modules
• Software-controlled switching



High-Speed Turbo Molecular Pump

Oil-free vacuum system
Supports 1.0mL/min carrier flow



30m Low Thermal Mass Column

Replaces traditional heated column
Compact size, same performance

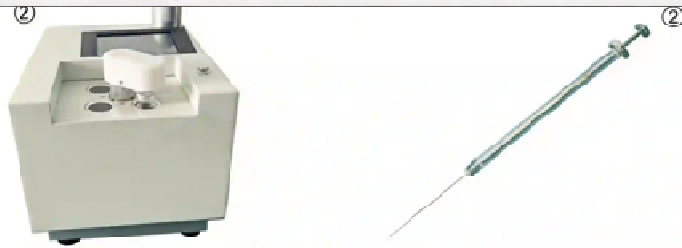
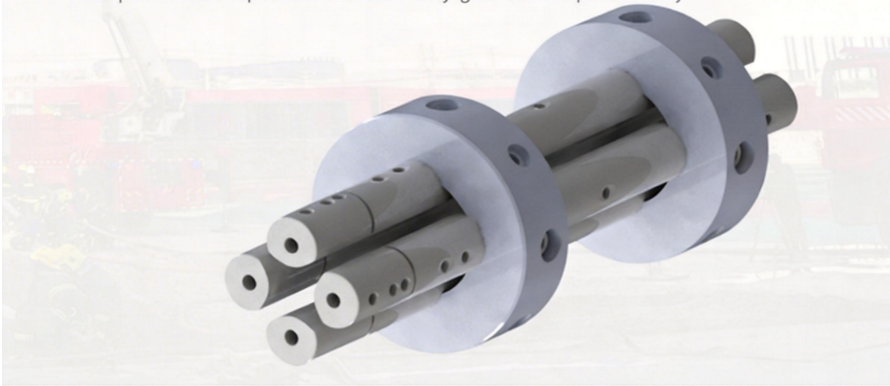


Product Introduction - Performance



Hyperbolic Quadrupole Mass Analyzer

- Adopts the same mass analyzer as bench-top mass spectrometers. Achieves smaller portable GC-MS through spatial integration while maintaining qualitative and quantitative capabilities of laboratory-grade mass spectrometry.



① Portable Headspace Sampler

② Solid Phase Microextraction (SPME) Needle



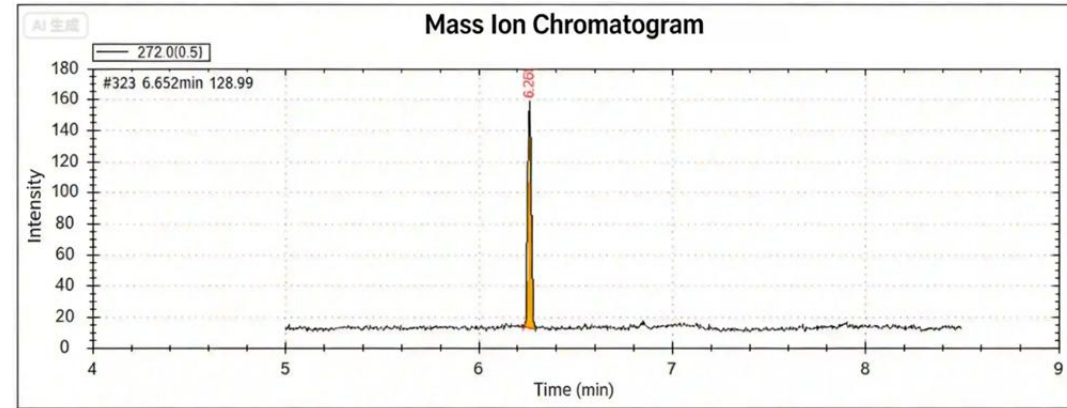
③ Gas Sampling Handle



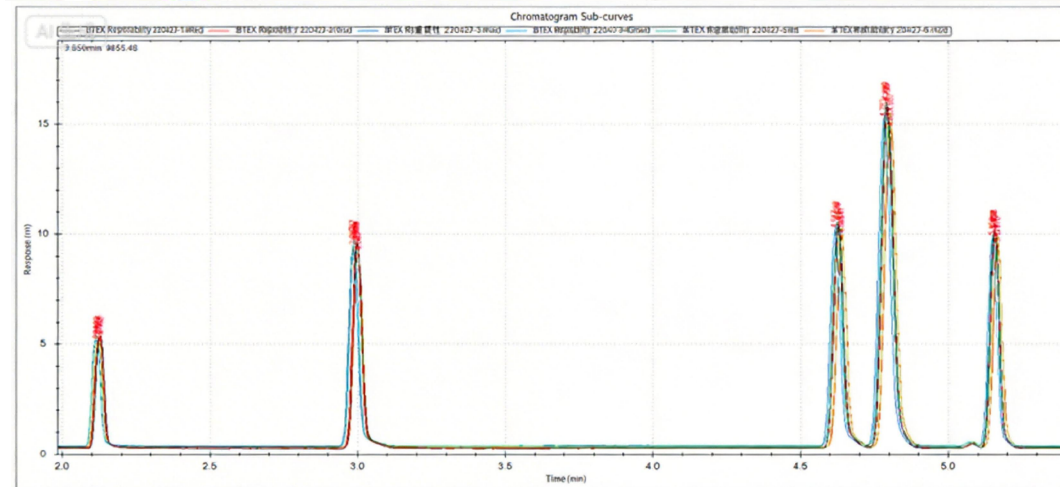
④ Liquid Syringe



⑤ Gas-Tight Syringe



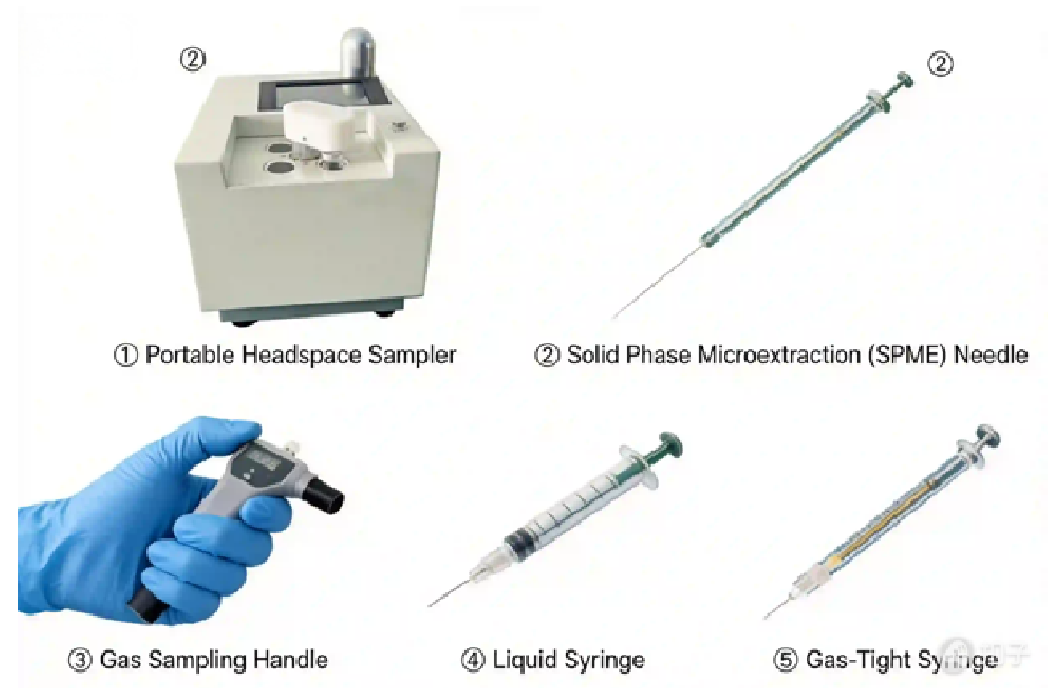
▶ 1pg OFN M/Z 272 Ion Chromatogram in Inlet Mode



▶ BTEX 6 consecutive injections Retention time RSD≤1%, Peak area RSD≤5%

Supported Injection Methods

- Gas-tight Syringe Injection
- Liquid Injection
- Solid-Phase Microextraction (SPME)
- Gas Sampling Needle
- Headspace Sampling
- Portable Thermal Desorption



Portable Sampling Systems



3. Headspace Sampling System (Optional)

- Operating Temperature: 0-45°C
- Independent power supply or powered by portable GC/MS
- ≥4 headspace heating positions
- Equilibration Temperature: 30-80°C
- Total Weight: ≤6 kg (with battery)

4. Portable Thermal Desorber (Optional)

- Passive diffusion & active sampling modes
- Heated transfer line: +10-100°C
- External or built-in carrier gas support
- Desorption tube: RT+10°C to 250°C
- Detection Limit: <1 ppb (toluene)
- Max Purge Flow: ≥150 mL/min
- AC/DC adapter or rechargeable battery, ≥3 h operation
- Weight: ≤6 kg

(with battery & gas cylinder)

5. Portable SPME System (Optional)

- Weight: ≤8 kg (with battery & gas cylinder)
- Power: 220V AC, internal battery, or external battery
- ≥2 independent sample vials
- Vial Temperature: 40-90°C
- Stirring Rate: 300-2000 rpm
- Conditioning Chamber: 50-280°C
- ≥5-inch LCD display

Rapid Detection Capabilities

Target Compounds

- VOCs and semi-volatile organic compounds
- Explosives, hazardous chemicals, toxic substances
- Chemical weapons detection

Sampling Capabilities

- Standard split/splitless inlet
- Built-in adsorption concentrator & quant loop
- Liquid, SPME, gas-tight syringe support
- Gas probe sampling
- Compatible with proprietary portable headspace sampler

Applications



EPA Methods

TO-14

- Canister sampling
- Fewer compounds analyzed

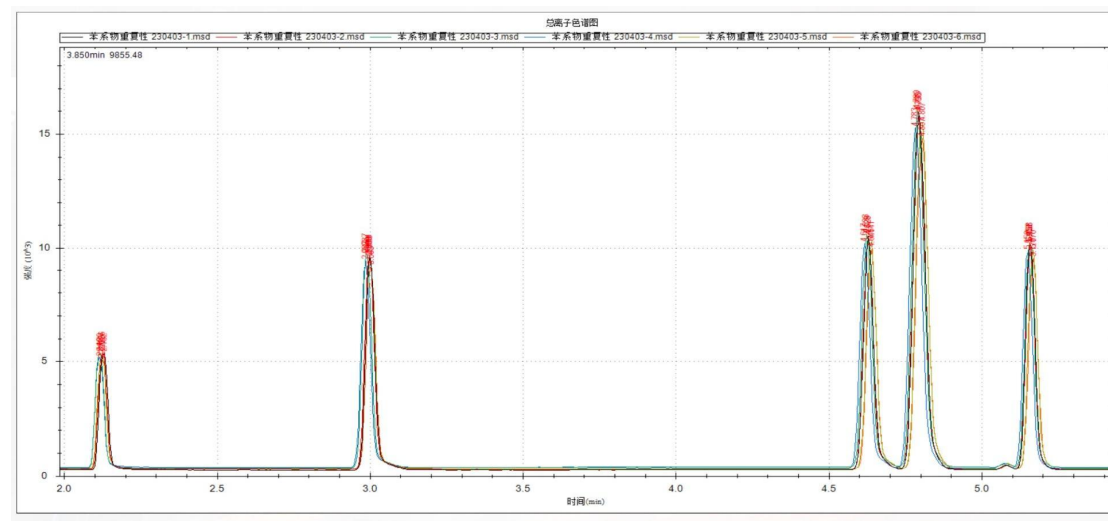
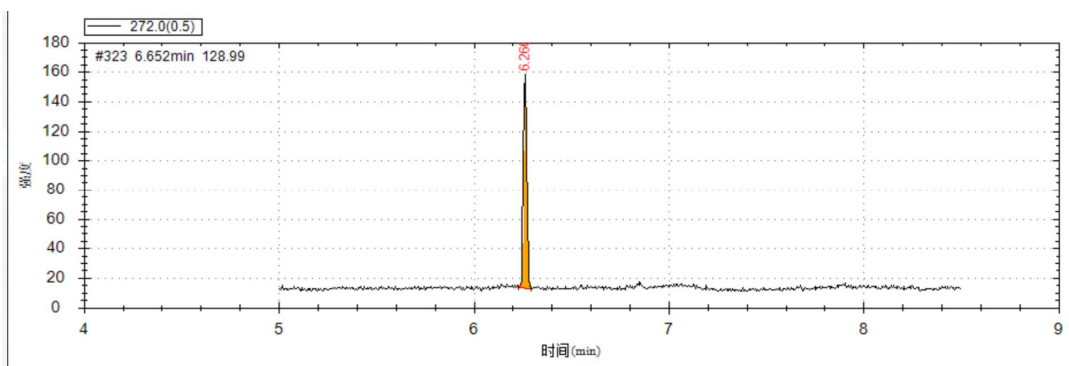
TO-15

- More compounds analyzed
- Standardized procedure with moisture management & internal standard

Application Areas

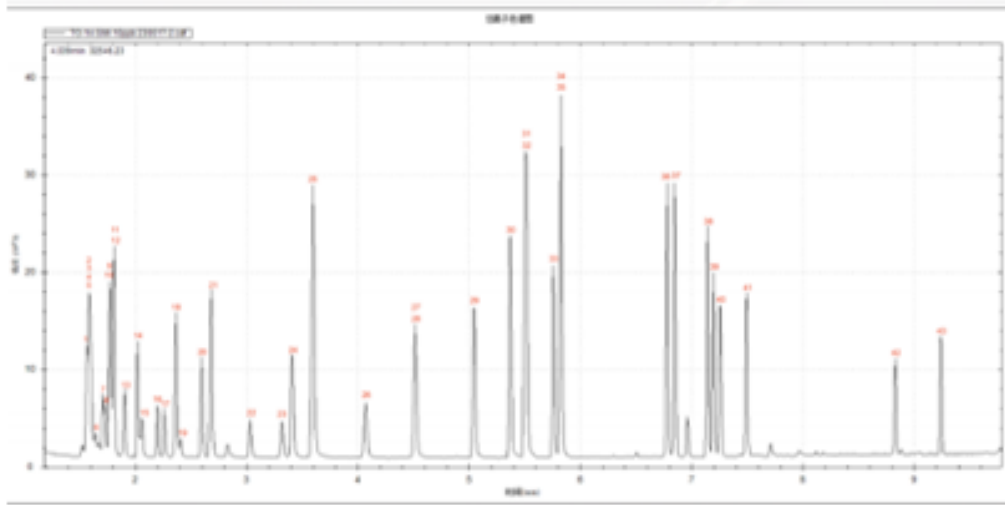
- Non-methane hydrocarbons in ambient air
- Volatile organic compounds (VOCs)
- Emergency environmental monitoring
- Hazardous material detection
- Industrial hygiene monitoring

Ion Chromatogram

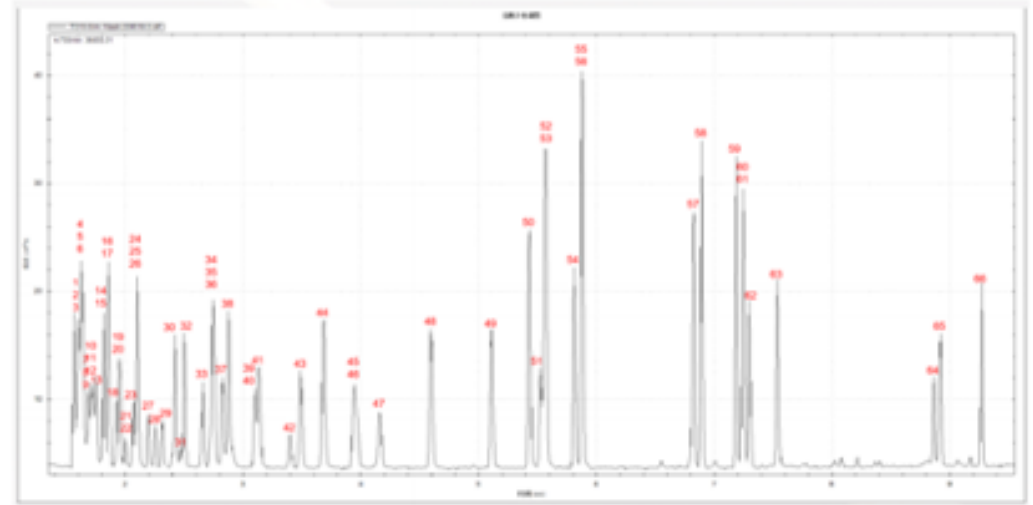


Injection port mode 1pg OFN M/Z 272 ion chromatogram
(n=6)

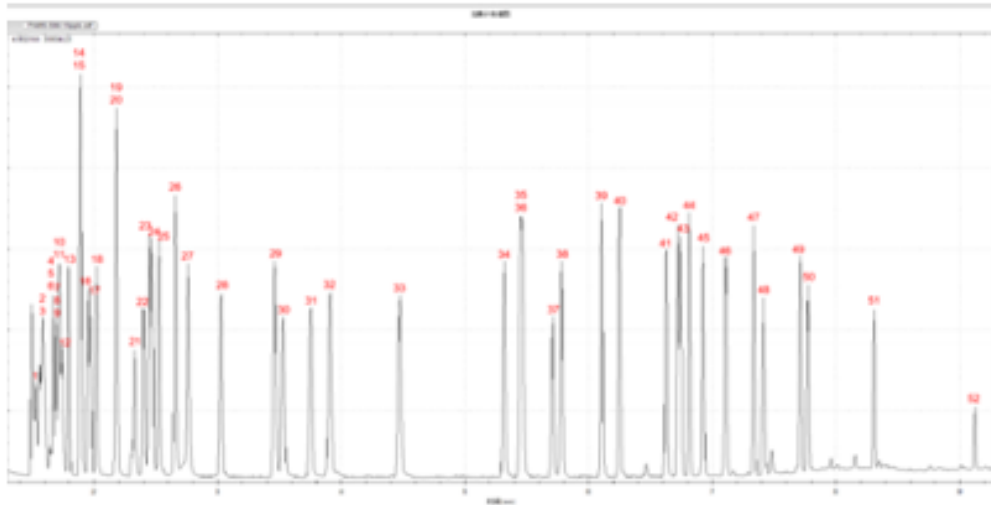
Retention Time RSD $\leq 1\%$; Peak Area RSD $\leq 5\%$



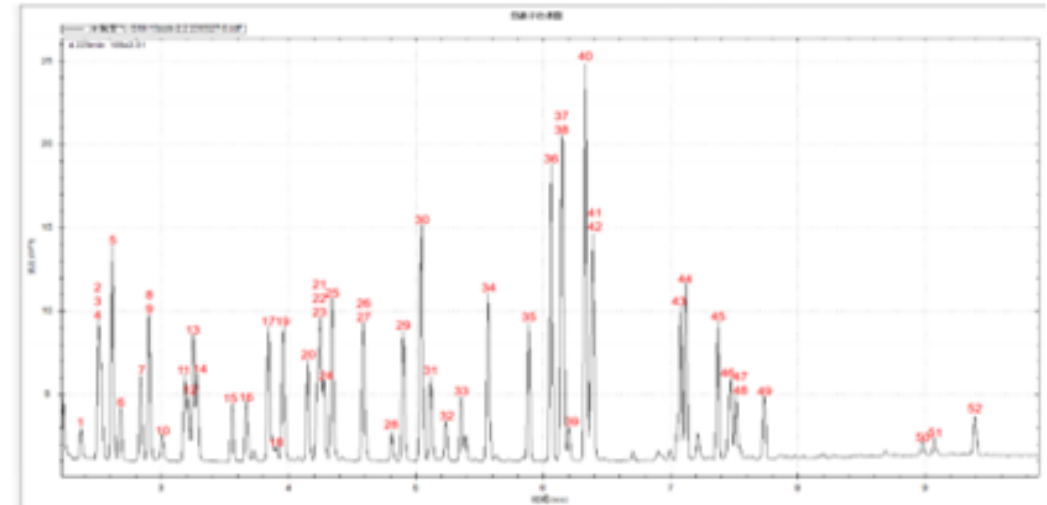
10ppb EPA TO-14 Std Gas TIC



10ppb EPA TO-15 Std Gas TIC



10ppb EPA PAMS Std Gas TIC



10ppb 52 VOCs Ambient Air TIC