



SOLIA MICROGC

Gas Analyzer
with MSD and TGA



SRA 
INSTRUMENTS
ANALYTICAL SOLUTIONS



EASY TO USE AND EFFECTIVE FOR ANALYZING COMPLEX MIXTURES

The **SOLIA MicroGC** is a very fast gas analyzer that uses gas chromatography to separate compounds in a gas mixture in less than 3 minutes.

It is a modular instrument composed of 1 to 4 complementary analytical modules. Each module can analyze multiple compounds, which are detected by microTCD, a non-destructive universal primary detector.

An optional quadrupole mass spectrometer (MSD) allows formal identification of each of the separated compounds.

A unique interface allows the two detectors to be combined in series, without loss of performance. This combination enables qualitative and quantitative analysis of complex gas mixtures. Most compounds are detected by the universal detector in a concentration range from a few ppm to 100% with excellent linearity.

Coupling to the mass spectrometer improves sensitivity to 50 ppb or less.

APPLICATION AREAS:



Unknown
gas mixtures



- Interpretation of evolved gases
- Materials and polymers
- Quality certification
- Research
- Isotopic analysis
- Catalysis

Qualitative
and quantitative
analysis



Modular design,
user-upgradable



Coupling to
an automated
TGA system





SOPRANE CDS SOFTWARE



Soprane CDS software main window

The **Soprane CDS** software, developed by SRA Instruments, offers a powerful graphical interface that ensures efficiency and ease of use.

With **Soprane CDS**, you can define a method and an analysis sequence and monitor the performance of specific compounds during a TGA analysis. **Soprane CDS** manages the mass spectrometer and its Agilent Masshunter software and presents all results in a single report.

A POWERFUL TOOL FOR TGA COMBINATION

The **SOLIA MicroGC** analyzer enables the analysis of evolved gases by coupling it with a TGA system. A heated transfer line connects the two systems. A heated membrane filter protects the analyzer inlet from heavier compounds and residues.

The chromatographic run on the **MicroGC** module is initiated by the TGA system at the beginning of the analysis cycle; the complete composition of the evolved gas is obtained in 2-3 minutes. This allows for the easy identification and quantification of each compound responsible for the mass loss detected during thermal degradation experiment.

Identification is performed simply by comparison with the NIST mass spectral library.



SOLIA MicroGC/MSD

SOLIA ANALYZER/MSD

Technical Specifications

General Specifications:

| | |
|---------------------------|---|
| Dimensions (mm): | W 190; D 530; H 530 |
| Dimensions with MSD (mm): | W 686; D 573; H 479 |
| Weight: | 15 kg / 85 kg with MSD (depending on configuration) |
| Power Supply: | 110-230 VAC |
| Operating Environment: | 15 to 35 °C / 40 to 80% RH - non-condensing |
| Altitude: | Up to 2000 m |
| Noise: | < 70 dB |
| Communication: | Ethernet |
| I/O : | External trigger for synchronization with the mass spectrometer |

Utilities:

| | |
|----------------------|---|
| Carrier Gas: | 1 to 2 carrier gases (requiring 5.5 bar) |
| Carrier Gas Quality: | Minimum 99.9996% |
| Carrier Gas Type: | Helium, Argon, Hydrogen (Nitrogen) |

Chromatographic Specifications:

| | |
|----------------------|--|
| TGA Coupling: | Heated Transfer Line and Membrane Filter |
| Analytical Path: | 1 to 4 Modules |
| Sample: | Gas or Vapor Samples Only (No Liquid Injection) Compounds up to C ₁₀ |
| Sample Pressure: | Atmospheric to 15 psi (100 kPa) |
| Column: | 100 to 320 µm capillary column, stationary phase depending on application and compounds |
| Column Temperature: | Isothermal operation, +15 °C to 180 °C |
| Detector: | Thermal conductivity detector (µTCD) with Wheatstone bridge (240 nL volume) |
| Repeatability: | RSD < 0.5% typically |
| Concentration Range: | A few ppmV to 100% |

Interface :

MSD Interface: a dedicated heated interface (with very low dead volume), designed by SRA Instruments, allows coupling between the mass spectrometer and one of the four MicroGC channels with dual µTCD + MSD detection. Selection of the coupled module is automatic thanks to a low dead volume selection valve.

Soprane CDS Software:

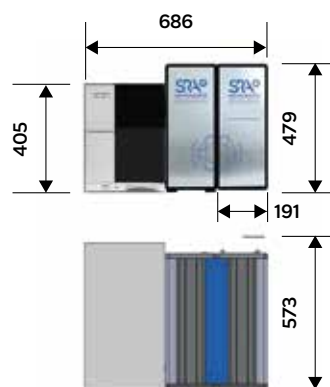
- Edit chromatographic methods
- Scheduled calibration
- Synchronization with TGA analysis start-up
- Real-time concentration control
- Import quantitative mass spectrometer results

Agilent 5977C Mass Spectrometer:

| | |
|---------------------------|---|
| Mode: | Electronic Impact |
| Ion Source: | Stainless Steel IE, Inert Extractor |
| Mass Filter: | Heated Monolithic Hyperbolic Quadrupole |
| Stability: | < 0,10 amu/48 h |
| Detector: | Triple-Axis HED-EM |
| Dynamic Range: | 10 ⁶ |
| Mass Range: | 1.6 to 1050 µ |
| Scan Rate (Electronic): | <i>Depends on source type</i> |
| Stainless Steel Source: | Up to 12,500 amu/s |
| Inert Extractor Source: | Up to 20,000 amu/s |
| SIM Mode: | 60 ions x 100 groups |
| Primary Pump: | Mechanical Pump (with Oil) 2.5 m³/h or IDP3 Dry Pump 3.6 m³/h |
| Secondary Pump: | Diffusion Pump 65 l/s, turbomolecular pump 255 l/s |
| Sensitivity in Scan mode: | a few ppmV for most compounds |
| Sensitivity in SIM mode: | less than 0.5 ppmV for most compounds |

Agilent MassHunter software:

| | |
|-------------------|--|
| SIM/Scan: | simultaneous acquisition in SIM/Scan mode |
| Spectral library: | NIST |



**Contact us for
a demonstration or
a personalized quote!**

* This information is subject to change
without notice.



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