SRA INSTRUMENTS
ANALYTICAL SOLUTIONS

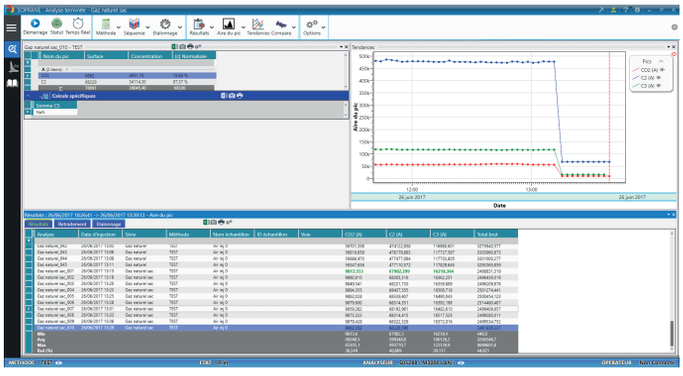
SOLIA MICROGC

GAS ANALYZER FOR MSD AND TGA COUPLING

Easy to use and efficient for analysis of complex mixtures.

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

It is a modular instrument composed of 1 to 3 complementary analytical modules. Each module can analyze several compounds that are detected by a first non-destructive universal detector, the microcatharometer.
As an option, a quadrupole mass spectrometer (MSD) allows to formally identify each of the separated compounds.
A unique interface allows the combination of the two detectors in series without loss of performance.
This coupling allows the qualitative and quantitative analysis of complex gas mixtures.
Most of the compounds are detected by the catharometer detector in a concentration range of 1 ppm to 100 % with a very good linearity.
Coupling to the mass spectrometer improves sensitivity up to 50 ppb and even less.



An efficient tool for coupling to the TGA

The SOLIA MicroGC is coupled to the TGA by a heated transfer line, in order to be able to analyze the evolved gases. A heated membrane filter protects the SOLIA inlet against the heaviest compounds and residues.
The MicroGC coupled or not to the MSD is started by the TGA at the beginning of the cycle and the complete gas composition is obtained within 2 to 3 minutes.
This allows you to easily identify and quantify each compound that causes mass loss detected during thermodegradation.
Identification is simply performed by comparison with the NIST mass spectrum library.

Soprane software

Soprane, developed by SRA Instruments, has a powerful graphical environment providing efficiency and ease of use. With Soprane, you can especially define a method and a sequence of analysis, follow the trends for specific compounds during a TGA analysis. Soprane manages the mass spectrometer and its Masshunter software and compiles all results in a same report.

SOLIA
Your gas analyzer for easy characterization

Application fields :

- Evolved gases interpretation
- Materials and polymers
- Quality insurance
- Research
- Isotopic analysis
- Catalysis
- ...

- Unknown gas mixture
- Qualitative and quantitative
- Modular design, Upgradable by user
- Automated TGA coupling

SRA INSTRUMENTS
210 rue des sources - 69280 Marcy l'Etoile - FRANCE
T +33 (0)4 78 44 29 47 - F +33 (0)4 78 44 29 62

Version 03 - 2019

SRA INSTRUMENTS
ANALYTICAL SOLUTIONS

Agilent | Premier Solutions Partner

SOLIA / MSD ANALYZER

TECHNICAL SPECIFICATIONS

General specifications :

Dimensions (mm) : W 190 ; D 530 ; H 530
Dimensions (mm) with MSD : W 686 ; D 573 ; H 479
Weight : 15 kg / 85 kg with MSD (depending on the configuration)
Power supply : 110-230 VAC
Environmental conditions : 15 to 35 °C / 40 to 80 % relative humidity – non condensing
Altitude : up to 2000 m
Noise : < 70 dB
Communication : Ethernet
I/O : External Start for the synchronization with the mass spectrometer
Utilities :
Carrier gas : 1 to 2 carrier gases (5.5 bars required)
Carrier gas quality : 99.9996 % minimum
Carrier gas type : helium, argon, hydrogen, (nitrogen)

Chromatographic specifications :

TGA coupling : heated transferline and membrane filter
Analytical channel : 1 to 3 modules
Sample : gas or vapor samples only (no liquid injection). Compounds up to C10
Sample pressure : from atmospheric to 15 psi (100 kPa)
Column : capillary column from 100 µm to 320 µm, stationary phase depending on the application and compounds
Column temperature : isothermal operation, ambient +15 °C to 180 °C
Detector : thermal conductivity detector (µTCD) using Wheatstone bridge design (volume 240 nL)
Repetability : RSD < 0.5 %
Concentration range : 1 ppmV to 100 %

Interface :

MSD Interface : a dedicated heated interface with very low dead-volume designed by SRA Instruments allows the coupling between the Mass spectrometer and one of the 3 MicroGC channels with a double detection µTCD+MSD. The selection of the coupled module is done automatically thanks to a low dead-volume selection valve.

SOPRANE Software :

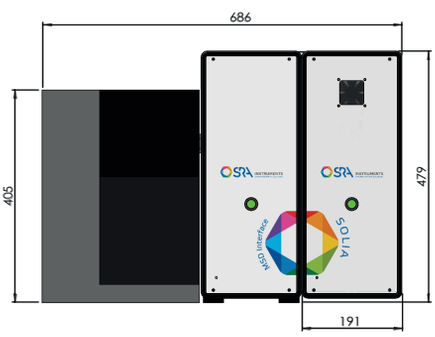
- Editing chromatographic methods
- Programmed calibration
- Synchronized with TGA start
- Real-time concentration monitoring
- Importing quantitative results from the mass spectrometer

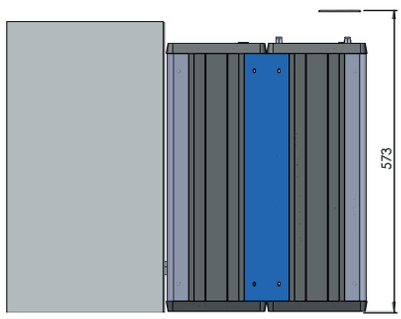
Mass spectrometer Agilent 5977B :

Mode : Electronic impact
Ion source : EI Stainless steel, Inert Extractor
Mass filter : Heated monolithic hyperbolic quadrupole
Stability : < 0.10 amu/48h
Detector : Triple-axis HED-EM
Dynamic scale : 10^6
Mass range : 1.6 - 1 050 u
Scan speed (electronic) : depends on the type of source
SS EI source : up to 12 500 amu/sec.
Inert Extractor Ion source : up to 20000 amu/sec.
SIM mode : 60 ions x 100 groups
Primary pump :
Mechanical pump (with oil) 2.5 m^3/h or IDP3 dry pump 3.6 m^3/h
Secondary pump :
Diffusion pump 65 L/sec.
Turbo molecular pump 255 L/sec.
Sensitivity in Scan mode : 1 ppmV for the majority of compounds
Sensitivity in SIM mode : less than 0,5 ppmV for the majority of compounds

MassHunter software :

SIM/Scan : Simultaneous acquisition in SIM/Scan modes
Spectrum library : NIST





Find us on www.srainstruments.com

SRA INSTRUMENTS
210 rue des sources - 69280 Marcy l'Etoile - FRANCE
T +33 (0)4 78 44 29 47 - F +33 (0)4 78 44 29 62