

FlavourSpec[®]

Gaschromatograph-Ion Mobility Spectrometer



GC-IMS for the Detection of Volatile Organic compounds in Food and Beverages

FlavourSpec® – Your fast and easy-to-use tool for Food Control

The FlavourSpec® represents the synergies of a fast gas chromatograph and the outstanding sensitivity of an IMS. It enables the selective detection of Volatile Organic Compounds (VOCs) in the headspace of solid and liquid samples. As result a 3 dimensional spectra as characteristic fingerprint of the sample is achieved and further analyzed using multivariate data analysing tools. To make the operation of sampling and processing simple and easy the system is set up with an automatic GC headspace injector.

Features

- Automatic GC headspace injector
- Stand-alone system with integrated computer
- Heated IMS, column, lines (< 80°C)
- Purification mode
- Access to all relevant parameters for method development: Temperature control of IMS, column, injector, drift and carrier gas flow rate
- Software controlled switching between positive and negative ionization mode
- Manual or fully-automatic operation incl. data acquisition, -analysis and visualization
- Storage of data on internal memory or external network shares and transfer to external devices
- PC-Software package

Applications

- Control of storage conditions
- Food freshness
- Control of production process
- Process optimisation
- Flavour evaluation and flavour stability
- Test of raw materials
- Product authentication

Technical Specification

Working principle: Ion Mobility Spectrometry (IMS)

Ionisation: β -radiation source (Tritium (^3H))

Activity: 300 MBq, below the exemption limit of 1 GBq, EURATOM guideline

Drift voltage polarity: Positive and negative, switchable

Sampling: Automatic GC headspace injector

Detection limit: Low ppb_v

Dynamic range: 1-3 orders of magnitude

Display: 6.4" TFT, VGA-Display

Input unit: Rotary pulse encoder

Processor: 400 MHz X-scale

Data acquisition: Ultra-fast ADIO-board

Data processing: X-board / Baseboard

Data storage: 2 GB Compact-Flash

Communication: RS232, USB, Ethernet

Electrical connectors: 2 x D-Sub 9-pole (for modem, console), D-Sub 15-pole (for external devices), RJ45 (for digital modem or SSH), 2 x USB-A

Power supply: 100-240 V AC, 50-60 Hz (external supply), 24 V DC / 5A, XLR-connector (internal)

Power consumption: < 180 Watt

Dimensions: 449 x 375 x 177 mm (WxDxH)

Weight: 15.5 kg

Housing: 19" compatible, IP 20 enclosure, EMC certificated

Gas connectors: 3 mm stainless steel Swagelok connectors for gas in- and outlet

Automatic headspace sample injector headspace

Features: Incubator oven, agitator and heated gastight syringe

Sample capacity: 32 or alternatively 96 vials (10 or 20 mL)

Operation: Control panel with 4 function keys, graphic display, scroll knob for steering

Dimensions: 828 x 385 x 648 mm (WxDxH)

Weight: 10 kg