



MultiPurpose Sampler

MPS robotic *pro*

Specifications

Sampler Type

- Multifunctional, flexible autosampler for GC
- Extended robotic functionality
- High sample capacity, high flexibility
- Automatic syringe exchange
- Maximum of 6 syringe tools per autosampler
- Automatic tool recognition
- Fast injection
- Bottom vial sensing for injections from very small volumes
- Automatic recognition of installed actively communicating modules such as an agitator, a barcode reader etc.

Sample Introduction Techniques

- Liquid, including sandwich technique
- Headspace
- SPME

Sample Capacity

- 4 tray holders or 2 stacks per standard sampler
- 6 tray holders or 4 stacks per XL sampler
- 3 small or 1 large tray per tray holder
- 3 deepwell or microtiter plates tray per tray holder
- Modular tray concept
- Up to three different tray types can be placed on every tray holder

Automatic Syringe Exchange

- Maximum flexibility with up to 6 syringes per sampler
- Sample prep function for Headspace and SPME
- Different syringes can be used for sample prep within one method
- Sequences for different sample introduction techniques combinable

Control

- Based on the GERSTEL MAESTRO software, alternatively integrated in an Agilent® Technologies chromatography data system, or coupled to a chromatography data system from AB Sciex™ or Thermo Scientific®, or operated in stand-alone mode
- Sample prep by mouse click
- Scheduler for at a glance sequence overview
- In-depth, context sensitive online help for easy and error-free method generation and sequence set-up

Interfaces

- 1 × LAN to connect a computer
- 2 × PALBus to connect active modules
- 1 × Interface
- 2 × USB

Operating Conditions

- 5 ... 40 °C
- Relative humidity 80%, non-condensing
- 3000 m above sea level
- Indoor use only



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Electrical Specification

- 100 ... 240 VAC
- 50 ... 60 Hz
- 200 VA
- Protection Class I
- Over Voltage Category II

Dimensions (W × H × D)

- 92 × 77 × 80 cm (standard sampler)
- 127 × 77 × 80 cm (XL sampler)
- 177 × 77 × 80 cm (XXL sampler)

Weight

- 16.8 kg (standard sampler, without accessories)
- 18.8 kg (XL sampler, without accessories)
- 21.1 kg (XXL sampler, without accessories)

Agitator

- 6 positions for 2 mL, 10 mL and 20 mL vials
- Actively communicating module
- Can be mounted anywhere on the X-rail
- Temperature range 35 ... 200 °C, in 1 °C increments
- Agitation speed 250 ... 750 rpm (± 15 %).
- Dimensions 114 × 180 × 176 mm (W × H × D)
- Weight 2.38 kg

Standard Wash Station

- 5 × 10 mL vials
- 4 solvent positions
- 1 waste position

GC Application Specification

Repeatability GC Liquid Injection

- < 0.60 % RSD
Alkanes C14, C15, C16, 1 µL, split mode

Repeatability GC Headspace Injection

- < 1.00 % RSD
Iso-Octane 10 µL in 20 mL vial, 500 µL injection

Linearity GC Liquid Injection (gravimetric)

- R > 0.9999
20, 40, 60, 80, 100 µL, n=3 each level

GC Needle Discrimination

- C40/C20 > 0.98
1 µL Restek Florida Mix, 100 ms fast split/splitless injection



Liquid Sampler

Vials^{*)}

- 2 mL, 10 mL, 20 mL or 40 mL
- Capacity for 1296 sample vials allows for extended periods of unattended operation

Syringe

- One universal syringe module (USM) for liquid syringes ranging from 1 µL to 1000 µL total volume
- The USM is compatible with the GERSTEL gripper enabling automated performance of multiple sample preparation techniques

Injection

- µL-injections performed even from very small sample volumes using Bottom Sensing
- Fast Injection mode injects in less than 100 ms

Specials with MAESTRO Software only

- Real sandwich technique using air or solvent
- Exact standard addition with Accurate Add
- Multiple sample prep-ahead

Headspace Sampler

Vials^{*)}

- 10 mL or 20 mL

Syringe

- 1 mL, 2.5 mL or 5 mL syringe
- Syringe temperature 35 ... 150 °C, in increments of 1 °C

Incubation

- Incubation temperature max. 200 °C
- Incubation time max. 24 h

Sampling

- From agitator
- Directly from tray

Syringe Cleaning

- 0 ... 60 min flush time with inert gas

Specials with MAESTRO Software Only

- Sample pre-pressurization
- Multiple headspace sample enrichment MHSE
- Multiple sample prep-ahead

SPME Sampler

Vials^{*)}

- 2 mL, 10 mL or 20 mL

Fiber

- 23 gauge
- Fiber sets for different analytes available
- One SPME tool for all fibers

Fiber Conditioning

- Inside fiber conditioning module or injector
- Before or after extraction
- Temperature set by user depending on fiber used

Derivatization

- Pre- or post-extraction
- Derivatization time max. 24 h

Extraction

- Using standard Agitator
- Directly from tray

Specials with MAESTRO Software Only

- Multiple sample prep-ahead

Fiber Conditioning Module

- Conditioning temperature 30 ... 350 °C, in 1 °C increments
- Gas flow user adjustable, 6 mL/min maximum
- Position for conditioning spare fibers
- Dimensions 190 × 160 × 44 mm (W × H × D)
- Weight 1.1 kg

Extensions and Options

- ATEX option, for automated operation of a GERSTEL Thermal Desorption Unit TDU including liquid injection and tube exchange
- ALEX option, automated liner exchange for the GERSTEL CIS used for samples with a high matrixload

^{*)} further vial sizes on request.



Available Modules

- **Agitator Module**
Temperature controlled agitation, 40 ... 200 °C, 250 ... 750 rpm, actively communicating module
- **Barcode Reader Module**
Reads 1D barcodes on 2, 10, 20 mL vials, actively communicating module
- **Standard Wash Module**
4 × 10 mL solvent vial, 1 × 10 mL waste vial
- **Fast Wash Module**
Efficient cleaning of syringes/needles (gauge 19-26) with 2 different solvents
- **Large Wash Module**
2 × 100 mL solvent container and waste port for cleaning of syringes/needles
- **Peltier Stack Modules (2DW, 6DW)**
Temperature controlled storage 4 ... 40 °C for a range of vials and multititer plates
- **Solvent Module**
3 × 100 mL solvent container for the addition of larger liquid volumes
- **Tray Set for 180 mL container**
3 × 180 mL solvent container for the addition of larger liquid volumes
- **SPME Fiber Conditioning Module**
Conditioning of SPME fibers, up to 350 °C, optional purge gas connection, actively communicating module
- **Valve Drive Module**
For Rheodyne or Valco injection & switching valves, actively communicating module
- **Vortex Mixer Module**
Efficient mixing for 2, 10, 20 mL vials, actively communicating module