

**GERSTEL**

ISCC 2008 Riva del Garda

Newsletter

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GERSTELIZED!**

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May 2008

VISIT GERSTEL

**32nd International
Symposium on Capillary
Chromatography
May 25 – May 30, 2008**

Palazzo dei Congressi,
Riva del Garda, Italy

GERSTEL Seminar

Wednesday, May 28
15.45 – 16.45, Gerstel – Room 1000

*Polymer Analysis by Pyrolysis Gas
Chromatography utilizing the Latest
Generation of High Temperature PTV
Injectors*

Patric Eckerle, DOW Germany

*New Mass Spectral Deconvolution
Software: Building Libraries for Detecting
Target Compounds, Unknowns, and
Profiling Complex Mixtures*

Al Robbat, Tufts University USA

*GERSTEL Solutions for Food Packaging
Migration Studies*

Frank David, RIC Belgium

INVITATION

Let's twist again ...



**Twister Cocktail Night
Tuesday, May 27, 2008
Starting 10.15 p.m.
Congress Center**



Riva del Garda

GERSTEL presents innovations at ISCC 2008 in Riva del Garda

Automated Disposable Pipette Extraction (DPX)

At the 32nd International Symposium on Capillary Chromatography (ISCC 2008) in Riva del Garda, GERSTEL is presenting automated Disposable Pipette Extraction (DPX) based on the GERSTEL MultiPurpose Sampler MPS. DPX was developed by Professor William E. Brewer and is currently available for manual sample preparation using disposable pipette tips.

DPX is a dispersive solid-phase extraction technique that enables rapid extraction of analytes from liquid samples, combining minimal use of solvent with high recovery. DPX is based on loosely contained sorbent placed inside a pipette tip. Sample is drawn into the pipette tip where it gains direct contact with the solid phase. Mixing is performed by drawing air through the tip. Air bubble mixing is extremely efficient, enabling



fast extractions for improved productivity and throughput.

DPX requires only a minimal amount of solvent for elution, enabling highly sensitive determination of analytes without the use of a concentration step. The technique is readily automated; the extraction recovery depends on the extraction time, which is extremely easy to control accurately. The automated solution

is expected to be available for customer shipment in 2009.

For more information about DPX and DPX automation, please visit the GERSTEL booth.

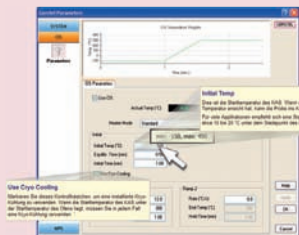
**DPX evaluation kits are available!
Please ask us for more information.**



Sample prep by Mouse-Click

MAESTRO software simplifies the task of generating sample prep methods using the Prep-Builder function. Sample prep steps are selected from a pull-down menu and added to the method, enabling sample prep by mouse-click with minimal effort.

The intelligent Scheduler in the MAESTRO software helps the analyst to optimize timing of both sample prep and analysis. Productivity and total run time for each batch of samples can be determined at a glance on the scheduler screen, you always know exactly when to have the next



batch of samples ready thereby ensuring maximum throughput. This convenience and productivity feature is a great help when planning the laboratory work-flow. Sample prep steps are performed during the GC or LC run of the preceding sample for best possible productivity and highest system utilization.

The sample prep techniques performed by the MPS range from standard addition and derivatization through Twister (SBSE) and Dynamic Headspace (DHS) to Automated Solid Phase Extraction (SPE).



Automated SPE

GERSTEL has introduced automated Solid Phase Extraction (SPE) for the MultiPurpose Sampler (MPS). The system is based on standard 1 mL, 3 mL or 6 mL cartridges, using disposable needles for liquid transfer to eliminate carry-over. Users can work on a variety of sample types due to the flexible rinse and elution capabilities offered by the MPS. It is possible to combine automated SPE with sample prep steps and with introduction to LC/MS or GC/MS systems. By performing SPE and chromatography in parallel productivity can be optimized. The complete system is controlled by the GERSTEL MAESTRO software or integrated with Agilent Technologies' ChemStation.

Automated Dynamic Headspace option

An automated Dynamic Headspace (DHS) Option has been introduced for the GERSTEL MultiPurpose Sampler (MPS) based on newly developed technology.

A DHS station in the MPS is used to efficiently extract and concentrate VOCs from liquid or solid samples placed in standard Headspace vials. The DHS station provides thermostating and agitation as well as purging of the sample headspace with inert gas. Sample temperatures can be selected from 200 °C to as low as 10 °C, enabling control of the amount of water vapour released and ultimately retrapped. The DHS station additionally holds a replaceable adsorbent- or sorbent filled tube used for analyte concentration. The temperature of the adsorbent tube during the DHS process can be varied from 20 °C to 70 °C for optimal trapping of the analytes in question.

Adsorbent tubes used are standard GERSTEL TDU Thermal Desorption Unit tubes. Following analyte concentration, the tube is automatically transferred to the TDU for thermal desorption and analyte transfer to the GC. Tubes are fitted with individual adapters enabling both automated movement and leak-free sealing during the DHS and thermal desorption steps and during storage in the autosampler tray.

Automated liquid handling in the MPS can be used for additional sample prep steps. As part of the sample prep procedure, standard addition can be performed automatically for best possible analytical results.

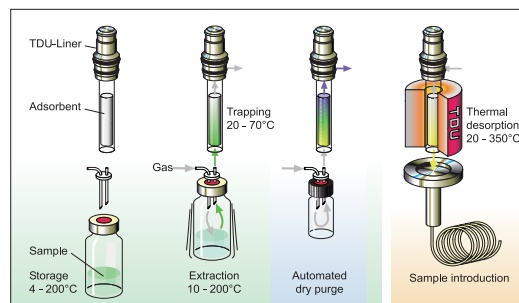
Automated DHS combined with sample introduction to a GC or GC/MS system is performed by the MPS and TDU. Up to 98 samples can be processed automatically in one sequence.

Parallel processing of samples enable the DHS process to be performed during the chromatographic run of the preceding sample for optimal productivity and for highest system utilization.

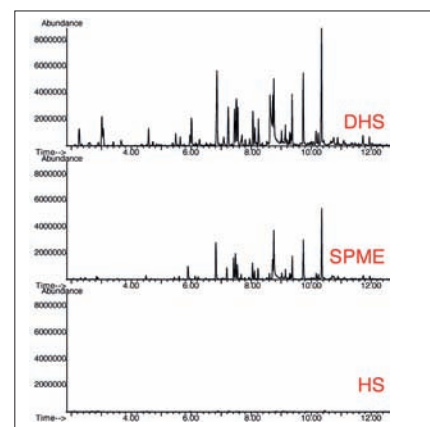
Sample prep steps are selected by mouse-click from a pull-down menu using the PrepBuilder function of the GERSTEL MAESTRO software.

A graphical scheduler display for the DHS process provides an overview of the time required for each individual step and for the complete sequence of samples for easier planning.

Just one method and one sequence table controls the complete process from DHS through sample introduction to GC/MS analysis. Integrated control ensures a more efficient oper-

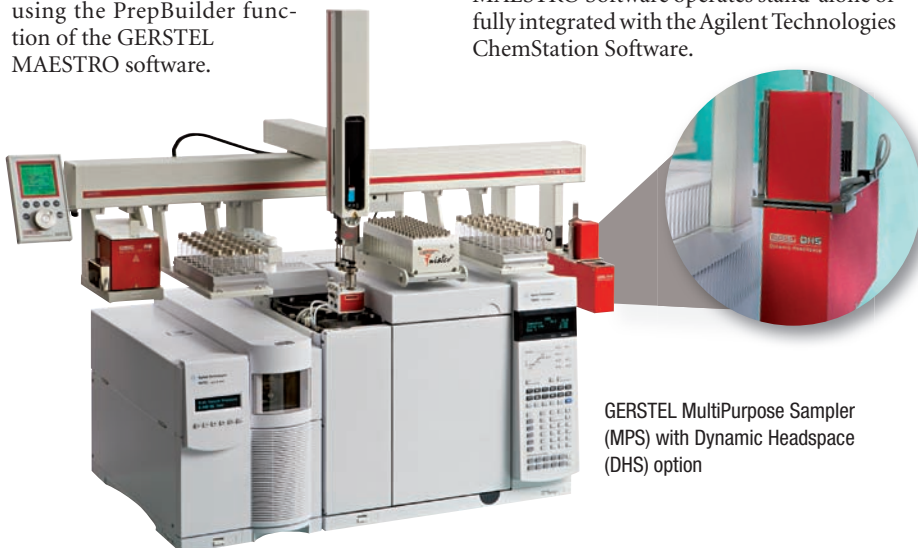


The DHS process from extraction to sample introduction.



Determination of VOCs in ground coffee. DHS provides better sensitivity and more information across a wider range of polarities than SPME and Headspace.

ation with less risk of error. The GERSTEL MAESTRO Software operates stand-alone or fully integrated with the Agilent Technologies ChemStation Software.



GERSTEL MultiPurpose Sampler (MPS) with Dynamic Headspace (DHS) option



Ion Signature data analysis software features a unique set of advanced deconvolution algorithms for precise, rapid compound identification and quantification. These accurate algorithms provide a one-of-a-kind “fingerprint” for all major GC/MS instruments.

A set of proprietary algorithms identifies target compounds present even in difficult and complex mixtures. The software extracts each compound’s characteristic signature, untangling it from the surrounding sample matrix background signal. It is a powerful tool for deconvoluting mass spectra.

Ion Signature performs deconvolution of the sample data, and analyzes all noise interferences. The software’s ability to in-

terpret mass spectra in the presence of high chemical noise allows labs to use shorter, simpler GC temperature programs, using less sample preparation. By rapidly ramping GC oven temperatures, 40 minute analyses can be compressed to 5 minutes without loss of accuracy. In many cases, even complex samples can be analyzed without having to perform gel permeation, alumina, or silica column chromatography sample preparation.

Recognized by the E.P.A

According to test reports from the U.S. Environmental Protection Agency, Ion Signature software is “capable of identifying low concentrations of target analytes in the presence of high levels of matrix interferences. By ‘seeing through’ the matrix interferences, the software reduces the need for re-analysis and dilution, and increases confidence in surrogate, internal standard, and target compound identification and quantification. [It] accurately identifies and quantifies target compounds in the presence of

high levels of interferences and with minimal chromatographic separation.”

Ion Signature software has broad application in many areas, including the following:

- Food and beverage
- Flavors and fragrances
- Environmental
- Forensics
- Chemical
- Life sciences
- Petrochemicals
- Plastics
- Quality control
- Homeland Security

...and many more.

Ion Signature software helps analysts get more out of their GC/MS analysis by efficiently and accurately identifying dozens of complex compounds, even in the presence of co-eluting peaks.

For a live demo, please visit the GERSTEL booth.

Direct Thermal Extraction in disposable micro-vials

Automated TDU-Liner Exchange (ATEX) is a new sample preparation option for the GERSTEL MultiPurpose Sampler (MPS) in combination with the GERSTEL Thermal Desorption Unit (TDU).

The ATEX option enables the introduction of liquid samples directly into micro-vial inserts used for thermal extraction / thermal desorption in the TDU.

Extracted analytes are refocused and concentrated in a Cooled Injection System (CIS) inlet prior to introduction to the GC/MS system. Efficient extraction and concentration ensures highest possible sensitivity and lowest detection limits.

After the concentrated analytes have been introduced to the GC/MS system, the micro-vial sample cup with the remaining high-boiling or solid residue is automatically removed. ATEX helps to ensure maximum uptime and best possible analysis results by keeping involatile or complex matrix material out of the GC/MS system. ATEX micro-vials can be used for liquid or solid samples. Up to 196 samples can be processed automatically for determination of VOCs and SVOCs in heavy or involatile matrices. Standard addition and other sample preparation steps can be performed automatically by the MPS.

The complete system is operated through the GERSTEL MAESTRO software either stand-alone or integrated with the Agilent ChemStation. Just one method and one se-



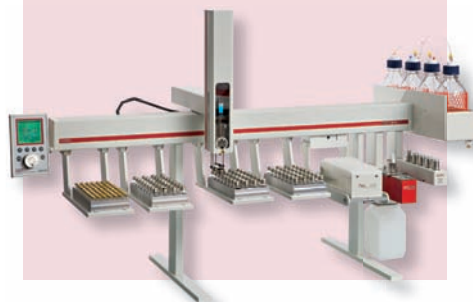
quence table controls the complete process from sample introduction through thermal desorption to GC/MS analysis ensuring the simplest possible and most productive operation.

Suggested applications are the determination of VOC or SVOC concentrations in high-boiling or involatile matrices by thermal extraction, also referred to as dynamic headspace analysis or stripping. Examples are: Residual solvents in packaging material; plasticizers in packaging material and in foods such as edible oils; and flavor and fragrance compounds in household products or personal care products.

GET GERSTELIZED!

To get more information about GERSTEL innovations for GC and GC/MS, please visit the GERSTEL booth

40 YEARS ANALYTICAL SOLUTIONS GERSTEL



GERSTEL MAESTRO software

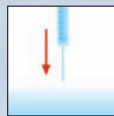
Next generation software for automated sample preparation and sample introduction. MAESTRO optimizes performance and throughput of GERSTEL modules and systems.

- Stand-Alone operation or fully integrated in the Agilent ChemStation Software
- One sequence table operates the entire system including LC/MS or GC/MS
- Sample Prep by Mouse-Click using the PrepBuilder functions
- Scheduler for easy planning
- PrepAhead / Multiple Sample Overlap: Automated overlapping of sample preparation and analysis for maximum throughput
- Priority samples can be added to the system at any point in the analysis sequence
- LOG file and Service LOG file functions ensure traceability
- Automated E-mail notification if the sequence is stopped
- Control of up to 4 systems from one PC
- Real-time monitoring of all modules and parameters
- Interactive on-line help function

Sample Prep by Mouse-Click

The MultiPurpose Sampler (MPS) is an autosampler and sample preparation robot for GC and LC. Sample preparation steps are performed during the analysis of the preceding sample for best possible system utilization and highest sample throughput. Sample preparation steps are performed in a controlled and highly accurate and reproducible manner for best possible results. Every step is selected by mouse-click from a pull-down menu in the MAESTRO software and added to the overall GC/MS or LC/MS method. Available sample prep techniques are:

- Dynamic Headspace (DHS)
- Automated TDU-Liner EXchange (ATEX)
- Automated Twister desorption and analysis (SBSE)
- Twister Back Extraction (TBE)
- Solid Phase Extraction (SPE)
- Thermal Desorption and Thermal Extraction (TDS/TDU)
- Solid Phase Micro Extraction (SPME)
- Multi Column Switching (MCS)
- Automated Liner EXchange (ALEX)
- Standard addition
- Weighing
- Derivatization
- Extraction and dilution
- Heating, conditioning and mixing



Action	Method
PREP Vials 1 - 98	
ADD	ADD_1
MOVE	
MIX	MIX_1
MOVE	
INJECT	10ul Flüssig
END	

MAESTRO Software enables Sample Prep by Mouse-Click. All sample preparation steps are conveniently and easily selected from a drop down menu and added to the method. Example:



ADD

Add solvent, internal standard or reagent



MOVE

Move the vial or cartridge



MIX

Agitate or stir and incubate the sample at a set temperature



INJECT

Introduce an aliquot of the sample to the GC or LC system

GERSTEL

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