

DANI

A SCENT OF FUTURE



Master SHS
STATIC HEADSPACE SAMPLER

HISTORICALLY THE BEST

A ROBUST AND FLEXIBLE SYSTEM TO MEET COMPLEX AND VERSATILE NEEDS

RELIABLE RESULTS AND EXCEPTIONAL REPRODUCIBILITY

INTUITIVE, POWERFUL AND STRAIGHTFORWARD USER INTERFACE



Master SHS
STATIC HEADSPACE SAMPLER

Innovation arises from a deep-rooted tradition

The capacity to design and provide the most flexible, accurate, automated headspace system comes from a rich and long tradition in innovation.

The culture of innovation is a legacy carried over more than three decades of real and proven experience in Headspace sample handling. This is the background that originated the new DANI Master SHS Static Headspace Sampler.



Static Headspace sampling technique is the most commonly used technique for the analysis of volatile and semivolatile compounds. The new Master SHS is a very flexible system and can be applied to the most widely differing sample matrices.

Among its benefits:

- limited or no sample preparation
- no contamination risk
- reduced danger of false results
- diminished inlet or column maintenance
- outstanding sensitivity
- completely automated analysis
- easy to use
- highest sample throughput
- absence of artifact or sample degradation
- robust and trouble-free design

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Master

A Robust and Flexible System to meet Complex and Versatile Needs

For laboratories pursuing highly reliable results, the most appropriate solution is a tough, robust and precise sampling system able to provide straightforward results for virtually any analytical need. DANI Master SHS Static Headspace Sampler delivers the highest performances to overcome daily new challenges and supplies trustworthy and enhanced results.



Sample Handling

Highest sample capacity with a **120-position vial tray**.

Designed to **lodge any headspace vials** [10mL, 20mL, 22mL] for **maximum compatibility** and to meet any analytical requirement.

Unlimited priority sample positions to promptly address specific necessities in real time.

Unmatched Oven Capacity : 18 vials simultaneously. Sample temperature is constantly kept under control. Constant incubation time allows sample overlapping and consequently time saving maximizing productivity.

Vial shaking function speeds up equilibration phase time and increases efficiency improving, as a consequence, sensitivity and repeatability.

Leak check automatic procedure ensures the proper pressurization and the perfect seal of each vial.



Positive Recognition for quality control

Bar Code Reader guarantees sample ratification and validation. Samples are uniquely identifiable, minimizing the possibility of dangerous errors.

Maximum Compatibility

DANI Master SHS Static Headspace Sampler is compatible with any Gas Chromatographic system.

Sample Integrity Preservation

Especially dedicated to biological samples to ensure reliable results.



Totally Green Technique

Headspace technique is an Environmentally Safe procedure, with no need of solvents.

Moreover, Master SHS Static Headspace Sampler makes use of procedures that minimize environmental impact:

- Gas Saving Function**
- Time Saving Function**
- Energy Saving Function**



Reliable Results and Exceptional Reproducibility

The **VALVE & LOOP Technique** is the most reliable and used technique which is capable of highly repeatable results. The known and fixed volume of the sample and the accurate temperature control guarantee outstanding repeatability and avoid the risk of false results, sample loss or recondensation.

The Sample **flow path is entirely chemical inert** and can be thermostatted to high temperatures. These features eliminate analytical carryover and maintain sample integrity.

The compact manifold design ensures maximum thermal control.

Master SHS Static Headspace Sampler is a High Temperature System: expanding thus the range of possible applications even to those critical methods in which direct-injection is not applicable.

Heightened Precision, Sensitivity and Method Optimization.

The Master SHS Static Headspace Sampler achieves highest levels in terms of accuracy and reliability thanks also to the following operational modes:

MHE (Multiple Headspace Extraction) is a quantitative method for complex matrices that eliminates sample matrix effect and allows to obtain the total peak area proportional to the total amount of analyte of the original sample and a consequent more precise quantitation.

MHI (Multiple Headspace Injection) allows a multiple valve&loop injection in a proper programmable temperature injector filled with dedicated sorbent material in order to improve the analytical system sensitivity.

MDO (Method Development Optimization) : any single method can be associated with an optimization procedure, in which the value of a selected parameter is automatically incremented of a constant amount in a series of consecutive samplings of identical samples. Oven temperature and incubation time can be optimized separately.

Intuitive, powerful and straightforward User Interface to enhance performances and increase productivity



The Master SHS can be fully controlled directly by the touch screen display or the driver of the CLARITY Chromatography Station or by using the standalone software, SHS Manager.

All system control modes offer a straightforward method and sequence set up enabling automated analyses.

Methods and sequences can be easily edited, stored, and uploaded to the instrument.

The software offers many outstanding features, including:

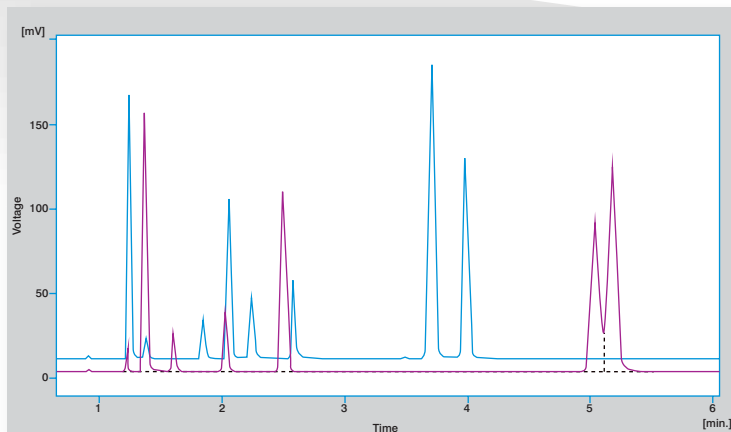
- Easy and intuitive interface for a step by step complete guide.
- Integrated help.
- Sampling status real time control.

Reliable and Enhanced Results over a Wide Range of Applications



Reliable Determination of Forensic Ethanol Levels in Blood and other biological Matrices

One of the most common use of the static headspace technique is the analysis of biological fluids in the forensic laboratory. The determination and quantification of blood alcohol is one of the typical application for this instrument. The procedure consists into the volatile compounds extraction by headspace sampling followed by a GC dual column analysis in order to obtain the undoubted qualification result.



Determination of residual solvents in active Pharmaceutical ingredients



The solvents, used in the manufacture of pharmaceutical products, must be eliminate before the human consuming. The USP 467 (United States Pharmacopoeia) describes how to quantify the different solvent class and the norm required a valve&loop system for the quantification of OVIs (organic volatile impurities).

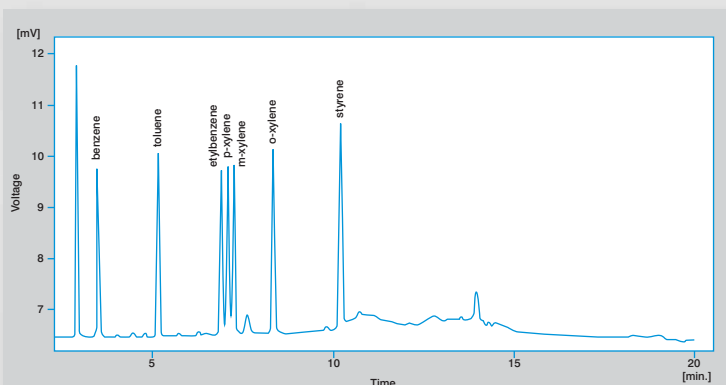
Master SHS is completely in compliance to the prescription giving exciting result in therms of sensitivity and precision.



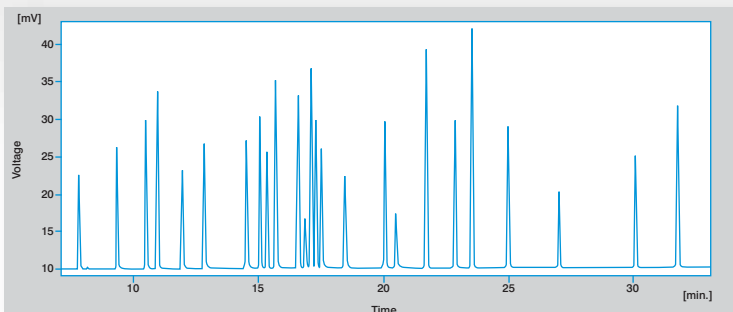
Determination of BTX and Styrene in Water

The headspace technique is the easiest approach to the VOCs (Volatile Organic Compounds) analysis in different matrices like soil and water.

Master SHS achieves the ppb level in BTEX and other substituted benzenes in accordance with the requirements of the most used analytical method.



Determination of Residual Solvents in Food Packaging



The packaging material monitoring is becoming one of the most important target in the food industry. Master SHS permits a complete automatic sampling and analytical system for the residual solvent determination according to the minimum detectable levels below currently recommended by the norms (EN13628-2:2002).

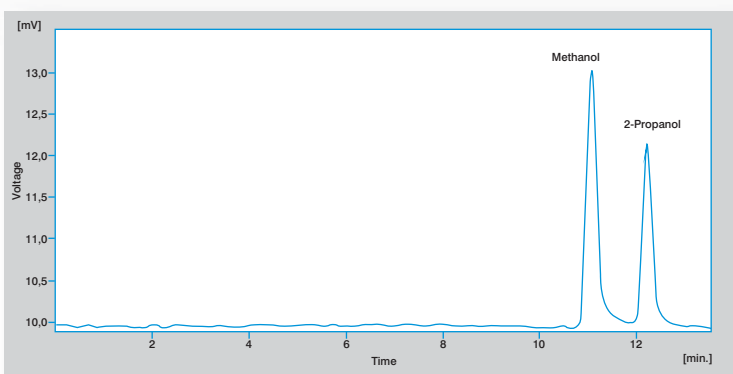


Determination of Residual Monomers in Polymers

The high temperature interval (up to 300°) of the DANI Master SHS allows reliable results for a wide range of compounds, among which residual monomer in polymer in enclosed spaces such as houses, offices and cars. Polymers can be directly placed without any sample preparation in a standard vial and analyzed. The temperature is then chosen according to the requirements of the monomer researched.



Determination of Methanol in B100 Biodiesel according to EN 14110



The high price and the difficulty to find new deposits of fossil oil are encouraging many institutions all over the world to increase the amount of diesel derived from renewable lipid sources in petroleum-based diesel. Biodiesel is produced by chemical reaction of a vegetable oil or animal fat with an alcohol in presence of a catalyst. The primary criteria for biodiesel quality is the compliance to appropriate standards. Several ASTM and European methods describe the analytical procedures to determine the quality specifications of biodiesel. The determination of residual methanol in pure biodiesel is one of the requirements by the European Standard DIN EN 14110. The new MASTER SHS combined with Master GC in compliance with the norm allows to quantify the methanol and thanks to the complete system automation and the high capacity carousel unmatched productivity is ensured.



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