Press Release

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analytica

Best supporting actor

**HS-20 headspace sampler for GC and GCMS /
Serves a wide range of high sensitivity applications /
Efficient analysis of high boiling point compounds**

Shimadzu, one of the worldwide leading manufacturers of analytical instrumentation, provides the HS-20 gas chromatography headspace sampler for accurate analysis of an even wider range of volatile compounds with boiling points ranging from low to high. The HS-20 heats liquid or solid samples sealed in a gastight vial to a specific temperature for a fixed period. The volatile compounds evaporated into the gaseous phase are then injected through a transfer line into a GC or a GCMS. These systems are widely used in the fields of environmental and pharmaceutical applications as well as in materials and food products analysis and forensics. The HS-20 supports all these kinds of analyses.

The unique configuration of flow lines and the oven enables the analysis of high boiling point compounds while minimizing carry-over. Using the electronic cooling trap, it is also possible to concentrate the headspace gas for the analysis of even very volatile compounds with extremely high sensitivity.

Headspace samplers enable easy analysis of volatile compounds. They are used in various fields requiring high reliability, such as

analysis of VOCs (volatile organic compounds) in environmental applications and quality control of pharmaceuticals. The HS-20 headspace sampler controls a wide range of volatile compounds of low to high boiling points with high sensitivity in order to provide accurate qualitative and quantitative results.

Some highlights:

- **Minimum carryover for highly reliable analysis**
  In order to increase the reliability of data in continuous analysis of headspaces, carryover needs to be minimized; not even highly adsorptive compounds may remain in the flow lines. The special deactivated sample flow lines and unique flow line structure of the HS-20 reduces sample adsorption, to achieve an extremely low carryover of 0.0001 % or less even for the highly adsorptive acetic acid or dimethylformamide.
- **Efficient analysis of high boiling point compounds**
  The HS-20 oven can be set to a maximum temperature of 300 °C to enable analyses of high boiling point compounds, which are difficult to detect with conventional headspace samplers. With just 30 cm length, the HS-20 provides the shortest transfer line in its class between headspace and GC. In this way, even high boiling point components such as phthalate esters or cyclic siloxanes can be transferred efficiently to the GC column.
- **Increased sensitivity using the electronically cooled trap**
  The HS-20 trap model concentrates the headspace gas for high sensitivity analysis of volatile compounds evaporated from a sample. Also, by cooling the trap unit to -20 °C using the electronic cooling function, low boiling point components can be concentrated efficiently in the trap. For example, components with a wide range of boiling points, such as odor components, can be analyzed with high sensitivity and accu-

racy to easily achieve identifications of unknown compounds using GCMS mass spectra or quantitation results of trace components.

Figure 1: Headspace autosampler HS-20 supports accurate analysis of an extended range of volatile compounds with boiling points ranging from low to high.

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