

SN002

Welcoming the Thermal Desorption 3.5 unit at Anatune!

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Introduction

Over the years, many different size thermal desorption tubes have been used to enrich analytes in air samples. A common tube size used is 3.5 inches in length. Thermal desorption analysis is carried out over many different industries. It is utilised in the environmental sector for carrying out stack analysis and fence line monitoring. For safety in occupational hygiene, 3.5 inch thermal desorption tubes are used to investigate if levels of certain analytes are below levels of concern. Thermal Desorption analysis is also carried out in many different areas such as flavour and fragrance, car industry and breath analysis.

GERSTEL have released a new Thermal Desorption product to use 3.5 inch thermal desorption tubes. Below shows two photographs of the TD 3.5+ at Anatune.



Figure 1

Figure 1 shows the GERSTEL Dual Head Robotic with Thermal Desorption 3.5 on Agilent GC/Q-TOF at Anatune

Instrumentation

GERSTEL: MultiPurpose Sampler Robotic Dual Head
 2M GERSTEL: Thermal Desorption TD 3.5
 GERSTEL: Cold Inlet System 4 (CIS 4)
 GERSTEL: UPC cooler
 Agilent: GC/Q-TOF 7200

Methods

3.5 inch thermal desorption tubes were supplied by a fragrance company. By inserting a transport adaptor to these tubes, we were then able to automate the desorption.

Method development was performed in blank thermal desorption tubes and spiking in the test mixture (within micro vials) into these.

An automated solvent vent method was developed to remove large amounts of ethanol from the TD tube prior to desorption on the TD 3.5+.



Figure 2

Figure 2 shows the TD 3.5+ tubes and tube tray for automated desorption.

Results

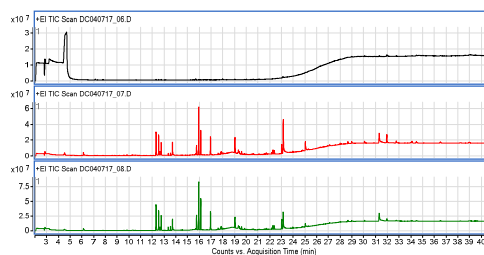


Figure 3

Figure 3 shows reproducibility of two spiked test mixtures using the TD 3.5+ with blank

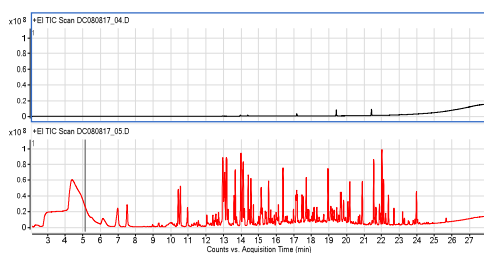


Figure 4

Figure 4 shows complex sample using the TD 3.5+ tube with blank desorption.

Conclusions

Automating thermal 3.5 inch desorption tubes with the MultiPurpose Sampler (Robotic) offers an excellent addition to the thermal desorption analysis that GERSTEL currently offer. **We have enclosed a video of this automation here.**