TDAS 2000

Thermal Desorption Autosampler

The TDAS 2000 thermal desorption unit was engineered and developed to work in combination with the CTC Combi PAL system. Volatile and semi-volatile organics in solid, liquid or gaseous samples can be analyzed either by desorption from adsorbent resin filled tubes (e.g., Tenax TA[®], Carboxen[®], Carbotrap[®], etc.) or by direct thermal extraction from solid samples via a GC or GC/MS system.



System Features

CT-TDASend 200

- Fully automated thermal desorption sampler
- ▶ Ideal for food and flavor analyses
- Great for use in solid sample analyses for the semiconductor and plastics industries
- "Moving oven" technology
- Easy mounting on top of GC injector for quick installation and removal
- Smart vial transport by CTC PAL
- Direct thermal extraction from sample tube to GC injector
- ► Heater oven temperature of up to 350°C
- Special PTFE plugs provide inert and gas-tight sealing of TDAS sample tubes
- No heated transfer line or switching valves no carryover

- Adaptable to existing PTV injectors (liquid N₂ or liquid CO₂ cooling required)
- PC controlled operation by Cycle Composer Software
- Software integrates with Agilent ChemStation or ThermoFinnigan Xcalibur

You still have all the capabilities of a CTC Combi PAL – liquid, headspace SPME and SPDE injections within the same unit.

Description

The system works as follows. First, desorption vials,

crimped with regular caps, are transported from the sample tray to the heater inlet port by the PAL's injection unit. As soon as the vial is placed in the heater, the injection unit pushes them downward, piercing both vial ends. The bottom of the heater, which is fitted with a syringe needle, injects the sample into the PTV. The carrier gas flow then switches direction, passing through the desorption vial and onto the cooled PTV. All analytes are thereby refocused onto the cooled liner. After a 3 – 5 minute desorption at a high temperature, the PAL moves the thermal desorption unit out of the inlet. At that point, the flow is redirected to the inlet, so that it no longer passes through the sample.

After a short equilibration time, the PTV inlet heats rapidly to its maximum temperature. If you choose to do the heating while the PTV is in splitless mode, it will provide maximum sensitivity.



Now the sample tube can undergo a conditioning step in the TDAS oven heater. Otherwise the sample tube will be transported back to the sample tray. By selecting appropriate TDAS parameters (e.g., desorption temperature, desorption time) it is also possible to control the number of extracted compounds as well as the molecular weight distribution.



TDAS 2000 · Thermal Desorption Autosampler

Examples of applications

- Measuring Trihalogenmethanes (THM) in air of swimming halls using a thermal desorption system. CHROMTECH (T201e)
- TDAS 2000 Direct Thermal Extraction Applications. CHROMTECH, 04/2004 (T401e)
- Thermal Desorption GC Analysis of High Boiling, High Molecular Weight Compounds. CHROMTECH, 04/2004 (T402e)





Chewing gum sample: 8 mg of Wrigley's® Extra Green Mint Chewing Gum



Part Number

Sample of crushed coffee beans, 3 mg

Laboratory air sample: Shows 5.3 L of air trapped and desorbed from TDAS sample tube filled with 100 mg TenaxTA[®].

Description

| Description | I dit i valiber |
|--|-----------------|
| TDAS 2000 Option for CTC Combi PAL consisting of: | |
| • Desorption oven, maximum temperature up to 350°C, controlled by PAL system | |
| Sample transfer by "Moving-Oven-Inlet" | |
| EPC-controlled flow during desorption (only for GC with EPC) | |
| • 21 Tube adapters for PAL 21 x 2 mL Tray | |
| Tube Transport Adapter | |
| Carrier gas transfer metal syringe | |
| Tube conditioning after desorption | |
| PC-Control by optional Cycle Composer Software | |
| Easy change back to headspace or liquid injections | |
| Adaptable to almost all known PTV injectors with LN₂ or CO₂ cooling systems | |
| This kit is packaged for an Agilent GC 6890N with Agilent PTV (Septum Cap)! Please contact us when using another GC! | |
| Requires Cycle Composer 1.5. or higher | |
| Requires PAL LHS0 model | |
| Requires PAL TraySet 20mL or TraySet 2mL | |
| Requires 1 pc Pressure regulator (MM03-00) | PAL TDASOpt |
| TDAS Startup-Kit , includes 100 empty tubes, 20 pre-filled tubes, tube plugs, seals, caps and crimper 8 mm | CT TDAS St-Kit |
| | |

Distributed by:

CHROMTECH GmbH Buchwiese 3 · D-65510 ldstein · Germany Phone +49(0)6126-1686 · Telefax +49(0)6126-1651 info@chromtech.de · www.chromtech.de