

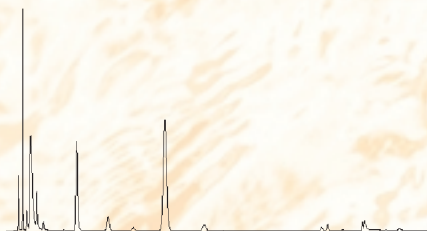


The 3100 Sample Concentrator™

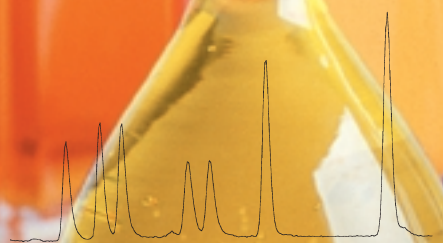
Follow The Performance Leader

- Unmatched inertness with Silcosteel® tubing and fittings throughout the sample pathway to prevent loss of active, polar or high-boiling compounds
- Improved temperature uniformity – increased recovery and reduced condensation
- Eliminate moisture interference with a built-in Moisture Control System™ for increased recovery
- Improved sensitivity and resolution with Trap Pressure Control™
- Redesigned sample drain system is quick and reliable for faster sample throughput
- Added valve for improved trap backflush – reduces carryover
- Rapid trap heating and cooling for enhanced chromatography and faster throughput
- TURBOCool™ accessory – fastest trap cooldown with improved sensitivity and resolution

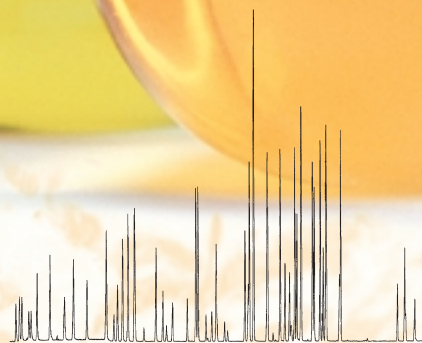
Tekmar-DOHRMANN®



Sulfur containing flavor compounds in a Pilsner beer – GC SCD



10 ppb standard “gases” – GC MSD



10 ppb standard – GCMSD

The 3100 Sample Concentrator

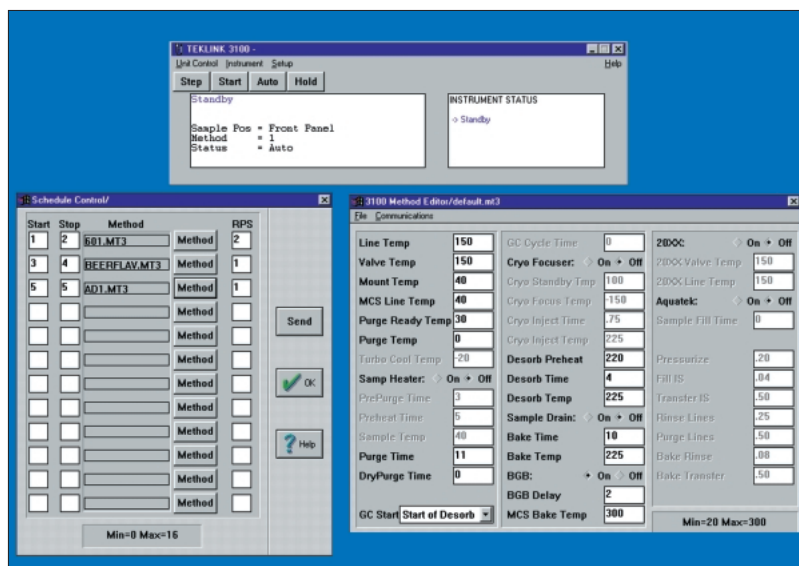
Tekmar has again set the performance standard for purge and trap gas chromatography. We have optimized every significant aspect of the technique with a focus on data quality, ease of use and sample throughput. Based on customer feedback, features such as inert sample pathway, improved temperature uniformity, improved sample drain system and a more efficient trap bake cycle are standard with the 3100.

About the Technique

The 3100 Sample Concentrator purges volatiles from a solid or liquid matrix onto a sorbent trap. This trap is then rapidly heated and the analytes are swept with GC carrier gas onto the GC column for separation and detection. The 3100 provides the most inert pathway for volatile flavor and odor compounds found in food, beverage and packaging products. The 3100 also performs environmental analyses with strict adherence to EPA protocols.

Automation and Versatility

The 3100 can be interfaced with virtually any GC or GC/MS system. It can be used as a base instrument for controlling a complete selection of automatic samplers (including the Precept II, 2016/2032 and AQUATEk) to meet a variety of laboratory demands.



TekLink™ Software

Integrating Into Your Lab Data System Environment

Tekmar's TekLink™ software permits total method control of the 3100 through the Windows™ environment. TekLink provides an effective and efficient way to transform the instruments in your laboratory into an integrated analytical system. It interconnects up to four 3100s to a Windows-based data system adding single keyboard control to the entire analytical system.

Trap Pressure Control Improves Peak Shape and Sensitivity

Trap Pressure Control (TPC) exerts an adjustable pressure on the trap during the purge cycle, which results in the light gases condensing more readily on the adsorbent. The analytes do not travel as far into the adsorbent and are adsorbed in a tight band. This smaller band of analytes is transferred to the GC column resulting in sharper peaks. Performance benefits include an improved signal-to-noise ratio, increased sensitivity and outstanding resolution. TPC also allows you to monitor pressures during each mode and to quickly check for obvious leaks in the system.

Unique Sample Path Integrity Increases Recovery

Silcosteel tubing and Silcosteel-treated sample fittings throughout the sample pathway including the sample mount, trap fitting and sample tee give the 3100 unparalleled inertness. Performance benefits include corrosion resistance, longer lasting fittings, and reduced adsorption. No other sample concentrator offers this level of inertness.

Tekmar has redesigned the 3000's valve oven, improving the temperature uniformity of the sample pathway while maintaining the accessibility of the sample path components. Constant uniform internal diameters on all fittings, valves, and tubing eliminate dead volume and maintain a constant linear velocity during desorption to the GC. Performance features include reduced band broadening, increased recovery, reproducibility and greater reliability.



people, products, services... Solutions

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Built-In Moisture Control System (MCS) For Increased Efficiency

Tekmar developed the MCS with one important objective: remove moisture without sacrificing sample integrity. The MCS removes virtually all moisture without affecting recovery of polar compounds. During desorb, water condenses in the cooled zone and the analytes (including the polars) pass through unretained. The MCS's internal diameter is the same as the 3100's sample pathway so that linear velocity of the gas mixture remains constant. During the bake cycle, high temperature (up to 350°C) and gas flow is applied to dry out and eliminate carryover of this subsystem.

TURBOCool Trap For Improved Adsorption Efficiency

TURBOCool, available as an option, increases the sensitivity of the light gases by purging onto a trap cooled by liquid CO₂ (as low as -20°C).

Performance Advantages:

- **Trap cooldown time is less than 25 seconds for improved sample throughput**
- **Focuses analytes into a tight band prior to desorption resulting in sharper peaks and increased signal-to-noise ratio**
- **Improved resolution of the light gases**

Proprietary Trap Heater Design

Intensive studies of trap heater designs have shown that precise and uniform heating along the axis of the trap bed provides superior chromatographic results. The 3100's proprietary trap heater provides this uniformity and control along the entire length of the trap. This trap design, coupled with a simple but effective trap preheat, provides unmatched chromatography. Trap temperature readings are more accurate, traps are easily customized,

costs of traps are less and direct injections on the trap are possible for easy troubleshooting. Another unique feature to the Tekmar trap is Standby Gas Flow. During standby, inert gas flows throughout the sample pathway preventing oxidation and contamination from lab air.

Added Value

Following the success of the world's leading purge and trap concentrator, the 3000, Tekmar has added features that make our new 3100 even easier to use and still more reliable:

- **The 3100 contains an extra gas valve that allows the adsorbent trap to be backflushed during the bake mode providing a more efficient bake cycle in between sample runs. This eliminates carryover that could occur on the trap.**
- **The sample drain system has been redesigned with larger bore tubing and orifices for quick and reliable draining.**
- **A sample pressure gauge has been added for simple setup and easier troubleshooting.**

Tekmar-Dohrmann Service and Support

A full warranty on parts and labor is just the beginning of Tekmar-Dohrmann's commitment to you. From a fully staffed Applications Laboratory to our worldwide network of technical professionals, we are ready to become your partner to assure that you achieve the maximum productivity from your 3100 Sample Concentrator. Our outstanding customer service is a natural extension of our world class, ISO 9001 Certified, quality system.