



Stratum

Purge and Trap Concentrator

Accelerate Productivity with the Stratum Purge & Trap Concentrator

Description

The Stratum Purge and Trap Concentrator (PTC) is designed to concentrate Volatile Organic Compounds (VOCs) from samples using the Purge and Trap (P&T) technique. The Stratum PTC uses advanced P&T technology that allows accelerated automatic processing of liquid and solid samples for analysis by Gas Chromatograph (GC). The Stratum PTC builds on eight previous generations, making it the industry's cornerstone of technique and support. The fundamentals of Purge and Trap are time proven.

How It Works

The Stratum PTC purges VOCs from liquids or solids by passing an inert purge gas through your sample matrix. The VOCs are extracted and collected onto an analytical trap. After purging is complete, the trap is heated and VOCs are released and delivered to a gas chromatograph for separation and detection. The Stratum PTC uses components that are essential to perform a successful Purge and Trap analysis; mass flow controller (MFC), superior trapping technology, and an inert sample pathway.

The main feature of our Purge and Trap System is the MFC because it delivers the purge gas with unmatched precision and accuracy. The most advantageous feature of utilizing the MFC is the ability to instantaneously change the gas flows at any time during the Purge and Trap process. This patent pending process allows for throughput without sacrificing analysis integrity.

The Teledyne Tekmar #9 proprietary U-shaped trap (StratTrap) offers trapping benefits that have never been seen before by Purge and Trap concentrators. The StratTrap is capable of adsorbing the VOCs of interest while minimizing the collection of unwanted compounds, such as water. The ultra-fast trap heater ensures that the StratTrap is desorbed rapidly and the VOCs are delivered to the GC system quickly.

One important key to minimize carryover is the Stratum PTC's inert sample pathway. The tubing and fittings have been treated to provide unprecedented low carryover which permits the end user to calibrate with more confidence.

Options

- **Guardian Foam Sensor** - The Guardian uses a photo sensor mounted on the outside of the sparger. When foaming occurs, the foam blocks the sensor, prompting the Atomx to shut off the purge flow and drain the sample.
- **Guardian and Eliminator** - When foam is sensed, the unit shuts off the purge gas. The purge clock is stopped and the Foam Transfer Valve is activated to add antifoam agent for a specified period of time.
- **Autosampler** - A range of solid and liquid auto samples are available from Tekmar. Utilizing an autosampler reduces hands-on labor and improves data quality.
- **Cryofocusing Module** - This module is useful in improving your chromatographic resolution. Cryofocusing or cold trapping ensures efficient trapping and injection.

Applications and Industries

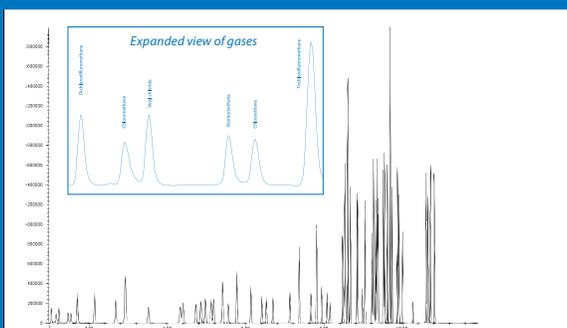
- Environmental
- Pharmaceutical
- Food and Beverage
- Petrochemical
- Forensics and Toxicology

Methods

USEPA 502.1, 502.2, 524.2, 503.1, 601, 602, 603, 624, 8010, 8015, 8020, 8021, 8030, 8240, 8260

ASTM and Standard Methods

Massachusetts VPH and GRO Methods

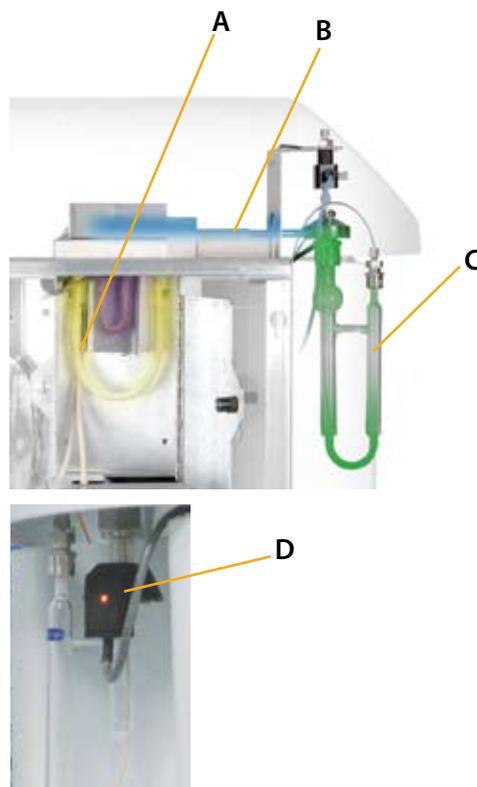


Drinking Water Chromatogram

Chromatogram showing 20ng/mL of standard drinking water. Inset chromatogram shows an expanded view of the gases.

Stratum

Features and Benefits



A. Analytical Trap - The Stratum PTC ships with a #9 proprietary U-shaped trap installed and a U-shaped Vocab 3000 trap. If a sample is not properly desorbed from the trap, the resolution in the chromatogram will suffer. The U-shaped trap provides superior peak shape by allowing a volume for the desorbing gas to refocus before proceeding to the GC. The result is a dramatic improvement in your chromatographic resolution.

B. Sample Path - When dealing with active, polar, and high boiling compounds, it is imperative to keep your sample contained in an inert sample pathway. The Stratum PTC utilizes Siltek® tubing and Siltek-treated fittings throughout the sample path. This ensures resistance to corrosion and prevents loss of compounds.

C. Glassware - Glassware can be ordered in 5 and 25mL with or without frit.

D. Guardian Foam Sensor - The sensor is mounted on the outside of the glassware thus never coming in contact with the sample.

Additional Features

Mass Flow Controller (MFC) - The Stratum utilizes a digital MFC for independent programmable flow control (*patent pending*) allowing users to easily optimize performance based on needs for either water or soil.

Ease of Operation of Maintenance -The design of the Stratum permits easy installation, monitoring and maintenance of consumable parts. Sample and gas lines are color coded for rapid identification. Internal components are carefully laid out and as a result, down time and cost of operation is kept to a minimum.

Autosampler Connectivity -The Stratum PTC can be interfaced with a Teledyne Tekmar autosampler as well as most commercial autosamplers for handling multiple samples and automating the process.

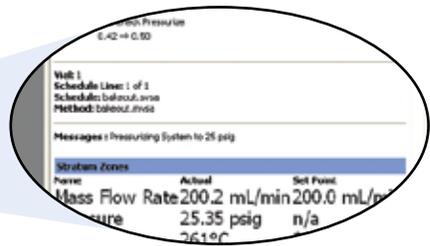
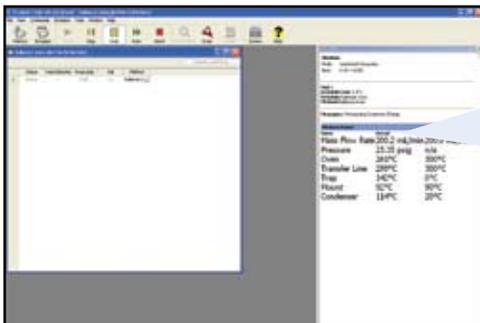
Water Management - Only Teledyne Tekmar offers the most comprehensive water management solution. The exclusive U-shaped trap and dry purge mode parameters have been optimized to dramatically reduce the amount of water being transferred to the GC column.



TekLink™

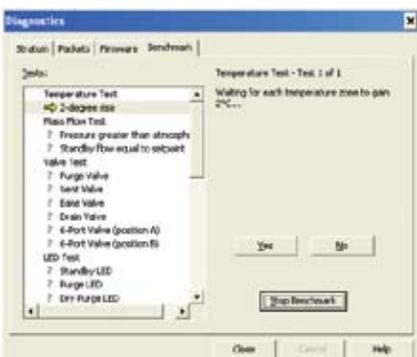
Fully Optimized User Interface

Tekmar's TekLink™ software allows the user to enter all analysis parameters and then once actuated, will continuously monitor the system ensuring operating limits are not exceeded. TekLink™ is capable of performing useful diagnostics such as leak and benchmark tests for validation. All instrument parameters, method scheduling, and editing can be programmed. TekLink™ provides pre-developed methods, allowing startup with little or no modifications.

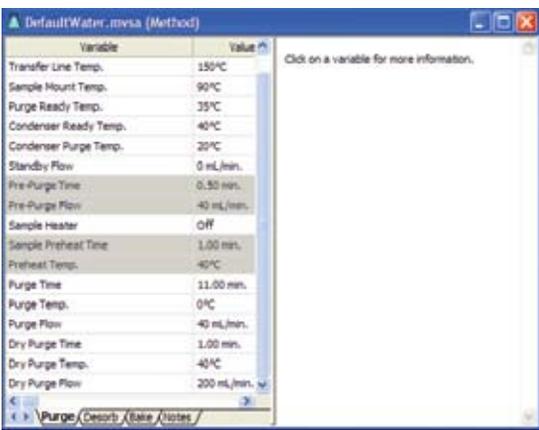


The Mode Details give you the status of the current leak check.

Leak Check Screen - The Leak Check screen identifies the region of the system that is being checked and the time remaining of the leak check.



Benchmark Screen - The Benchmark screen contains an interactive program that tests heaters, LEDs, and the continuity of inputs and outputs on the CPU board. The results of the Benchmark Test are saved in the System History Log under the name entered before starting the benchmark.



Method Development Screen - The Stratum TekLink™ Software comes pre-installed with methods for most applications. You can select one of these methods or if your application calls for a unique requirements, a customized method can be created to meet your analytical requirements for sample processing.

The Method Editor is broken into several tabs showing parameters that effect specific areas of a sample analysis: Purge, Desorb, and Bake. After creating customized methods, method schedules can be defined that specify samples, operating sequences, and the order in which they run.

Stratum Specifications

Automation

Cycle Time:	The cycle time for the unit is 17 minutes when using an 11 minute purge time. This time also includes desorb, bake, and cool down for the Stratum PTC only and assumes ambient lab temperature. (20-22°C).
Trap Furnace:	Ambient to 350°C cools from 250°C to 40°C in 90 seconds or less at ambient lab temperatures (20-22°C).
6-port switching valve	Ambient to 300°C actuated at 24 Volts (D.C.).
External Transfer Line	Ambient to 300°C.
Sample Mount	Ambient to 100°C.
Condenser	Ambient to 250°C.
Sample Heater (optional)	Ambient to 90°C.
Sample Pathway	All tubing and related fitting use Siltek® coating.
Gas Requirements	99.999% Helium or Nitrogen
Electronic Mass Flow Controller	Device is capable of controlling flow rates between 5mL/min to 500mL/min. Each mode is independently controlled. Device also capable of recording pressures for sample logging and automatic leak checking
Unit Dimensions	Height: 19.75 inches (50.17cm) Width: 8 inches (20.32cm) Depth 18.5 inches (46.99cm)
Operating System	PC using Windows® XP
Software	Teklink™ interfaced via an RS-232 connection.
Operating Conditions	The system is capable of operating in Lab Temperatures between 10-30°C and humidity levels between 10-90%
Corrosion	The front cover is corrosion resistant to waters within a pH range of 1-10
Voltages	100/115VAC 50/60Hz 10 amps, 1150 watts 220/240VAC 50/60Hz, 5 amps, 1150 watts
Weight	32lbs (14.5cm)

Teflon® is a registered trademark of Dupont, Windows® is a registered trademark of Microsoft, PEEK™ is a trademark of Victrex PLC, Siltek® is a registered trademark of Restek. TekLink™ is a registered trademark of Teledyne Tekmar. Mass Flow Controller (patent pending), #9 Trap (proprietary).

Service and Support You Can Count On

Teledyne Tekmar can help with your instrument installation. Our team of trained service professionals can provide extended onsite training for successful operation and instrument maintenance. For those needing documentation on analytical performance and operating procedures, Tekmar offers validation packages. These packages come complete with Installation Qualification (IQ), Operational Qualification (OQ), and Operating guidelines. Our validation packages are ideal to help you comply with your specific methodology. We also provide on-site validation packages performed by factory trained and certified engineers.

Our experience in state-of-the-art instrument design translates to the most capable support available. From a fully staffed Applications Laboratory to our worldwide network of technical professionals, we are ready to be your partner and assure that you achieve the maximum productivity from your instrument. Our outstanding customer service is a natural extension of our world class, ISO 9001 Certified Quality System.



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