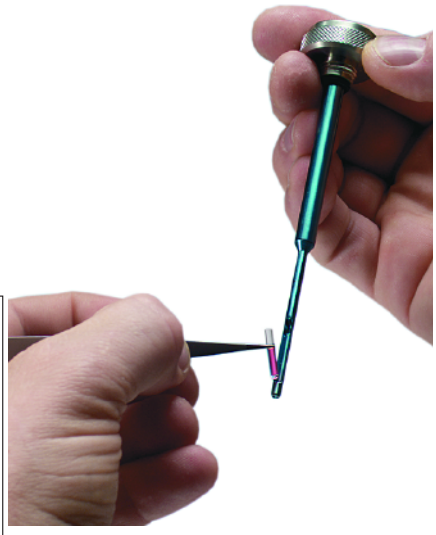
ChromatoProbe

Sample Introduction Device for Superior Analysis of Solids, Liquids, and Slurries



- Increase uptime with rugged and easy-to-use alternative to solid probe
- Minimize system contamination with disposable micro-vials
- Directly desorb samples in the 1079 PTV injector without added hardware

The Varian ChromatoProbe sample introduction device is an upgrade to the 1079 PTV (Programmable Temperature Vaporizing) Injector for the CP-3800 GC and Varian GC/MS Systems.

With ChromatoProbe, solid samples, liquids, and even slurries are analyzed using a range of GC or MS detectors with powerful analytical modes (EI or CI full scan, SIM, EI/SIS, EI or CI MS/MS, and NCI).

Low Risk Sample Introduction

Samples are introduced into the injector via disposable micro-vials. Then, the sample enters a 2 m column. A longer column may be used to further enhance chromatographic separation.

Non-volatile or thermally degraded components from the sample remain in the micro-vial allowing the system to remain clean.

During sample introduction for GC/MS with ChromatoProbe, the MS detector operates continuously, the vacuum is uninterrupted, and the detector remains aligned. Also, sample introduction via ChromatoProbe vials eliminate the risk of leaks and loss of performance associated with traditional solid probes.

GC and GC/MS operation is simplified with increased uptime.

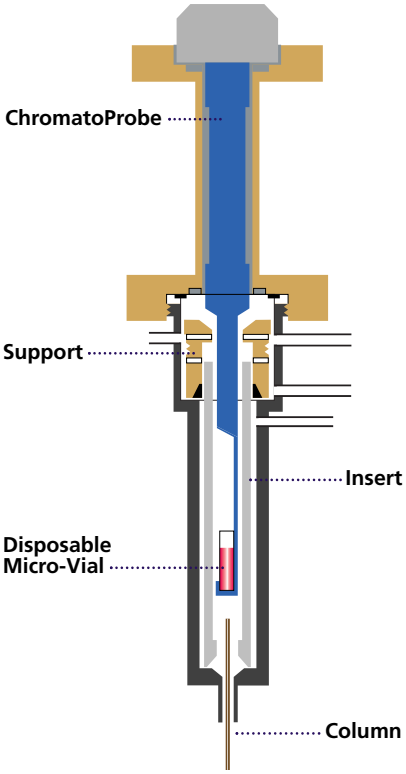
Controlled Sample Delivery

With 1079 PTV and ChromatoProbe, sample delivery is controlled by adjusting injector temperature and split flow ratios. This powerful combination of temperature and split flow control over sample delivery eliminates overloading or contaminating the detector.

Temperature programming is key in identifying multi-component samples. The ChromatoProbe with 1079 PTV provides temperature programming in both the injector and GC column for improved identification of mixtures.

How ChromatoProbe Works

The ChomatoProbe is coated with Silcosteel® to provide maximum inertness. A micro-vial with a small amount of solid or liquid sample is inserted into the tip of the ChromatoProbe. The probe is guided into the injector by a special adapter that temporarily replaces the standard



injector nut and septum support.

Starting at a typical temperature of 100 °C, the injector is programmed to increase at a rate which vaporizes the sample for transfer to the detector.

Then, the GC column is programmed for thermally labile samples and better separations, or kept at a high temperature for rapid analysis and high boilers.

Finally, a starting flow rate of 25 to 50 mL/min through the injector split vent is set to eliminate overloading the mass spectrometer or GC detector. An added advantage of split flow is that the high helium flow minimizes air introduction into the system when the sample is changed and the injector opened.

Conversion To ChromatoProbe

Converting to the ChromatoProbe interface or back to the standard injector only involves:

1) exchanging the injector nut and septum support with the ChromatoProbe guide
2) changing the insert
3) changing the column.

Adding a second injector devoted to the ChromatoProbe device simplifies the conversion to a simple column change to the detector.

Alternatively for greater productivity, Varian offers the Quick-Switch Valve, a four-port column switching valve to simplify selecting columns, injectors, including ChromatoProbe, and detectors.

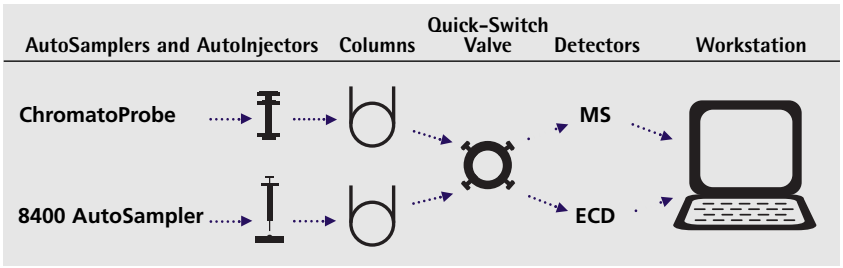
Add Versatility to Your GC and GC/MS with ChromatoProbe

Even compounds that normally are not considered amenable to GC or GC/MS analysis can be investigated with the ChromatoProbe. For example, see Varian Application Note 56 for the detection of 2,4,5-trichlorophenoxy-acetic acid in a soil sample.

A Varian GC/MS system with ChromatoProbe easily generates superior measurements of street drugs, industrial solids, synthetic organic products, and plant tissue.

Also, with internal standards, quantitative estimates are possible.

ChromatoProbe in a Multi-Channel Configuration



Easy switching. *In this example, a Varian CP-3800 GC is configured with ChromatoProbe and a standard injector plus a Quick-Switch Valve, a simple, inert column switching valve for column and detector selection.*

ChromatoProbe has been developed with Professor Aviv Amirav and Dr. Shai Dagan, Tel Aviv University. For more information on Professor Amirav's research into this and other devices, including Pulsed Flame Photometric Detector (PFPD), please visit: www.tau.ac.il/chemistry/amirav/.

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WCI-pdf-0042.r1 8/04 U.S.A.