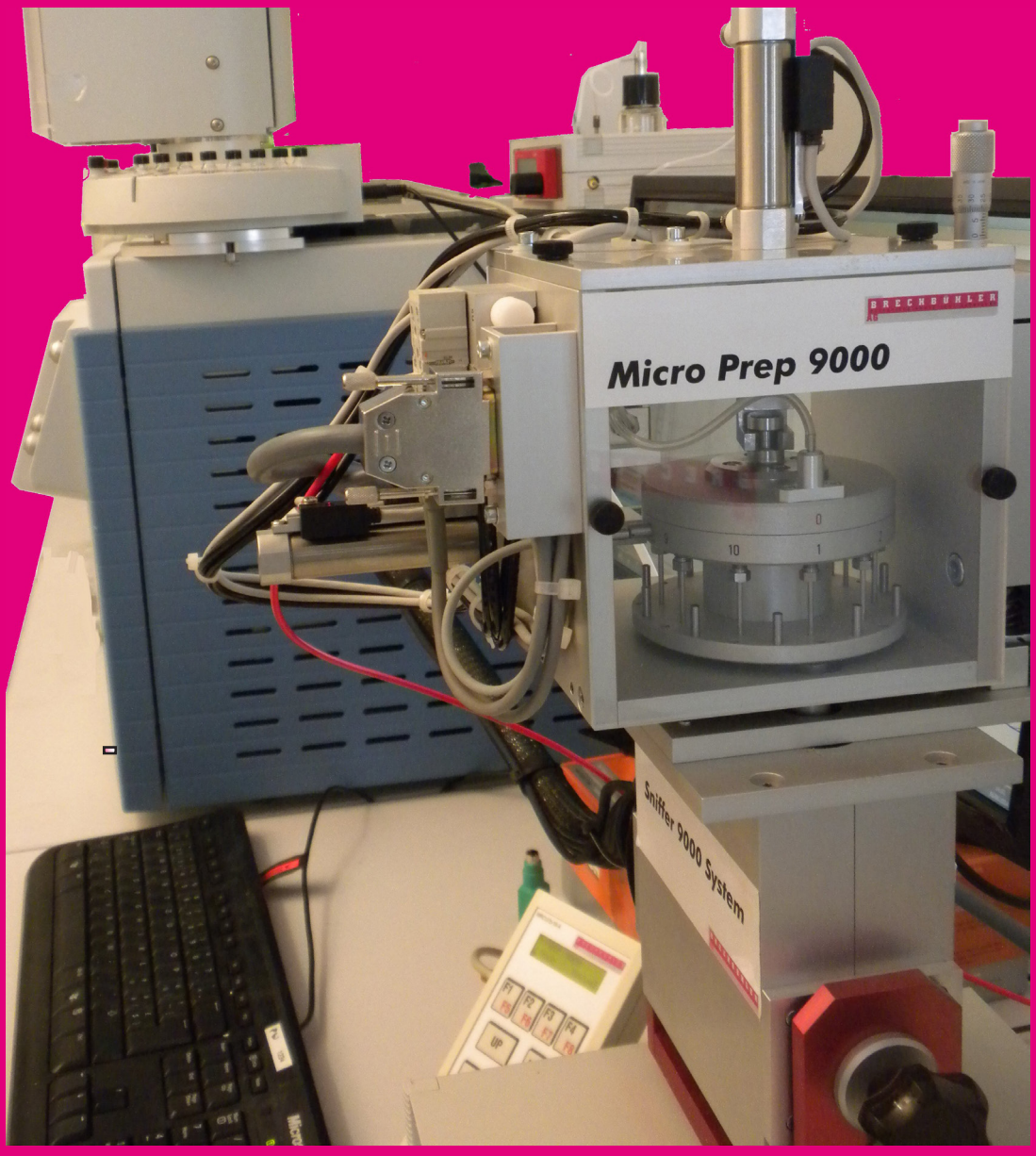
Prep 9000



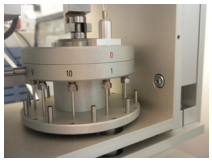
Fraction collector for GC

BRECHBÜHLER
scientific analytical solutions
AG

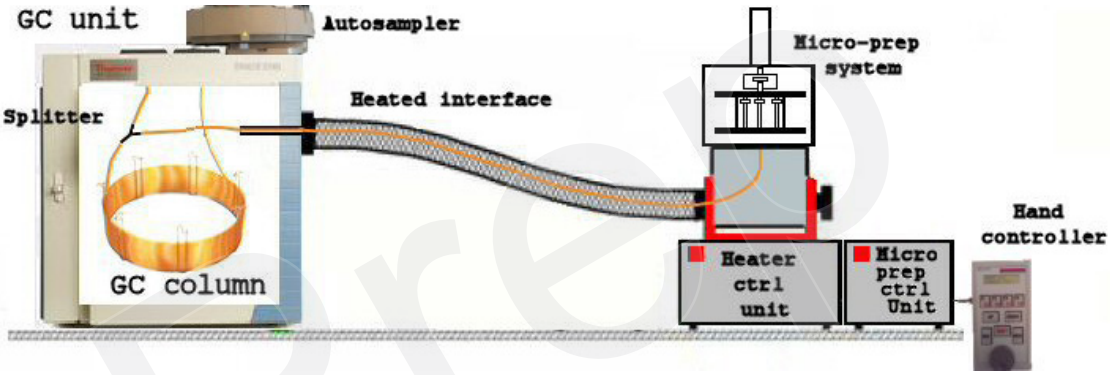
www.brechbuehler.ch

Micro-Prep system

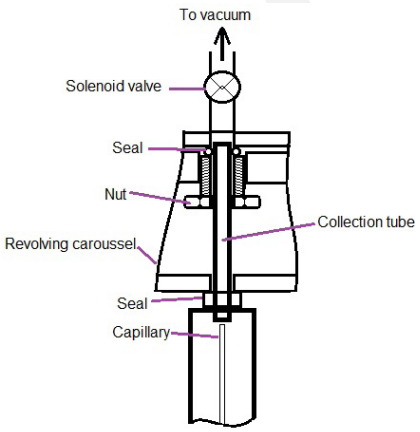
Micro-preparative technique refers to the collection of fractions after separation by Gas Chromatography to enhance the concentration.



The enrichment procedure is based on a repetitive adsorption of eluting compounds, after separation from a capillary column, by sucking them through an adsorption tube mounted on the outlet splitter. Optimization is easily performed during a supervised GC run in a semi automatic mode. Once optimized, repetitive injection/collections are performed using an autosampler. Full synchronization makes the system fully automated. The system directs the column effluent at any given time into the collecting system where the compounds of interest are adsorbed.



Principle



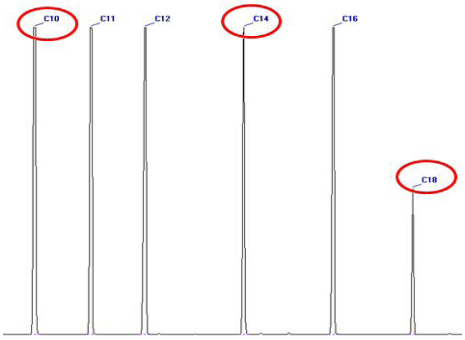
Adsorption Tube Setup

The mixture to be separated is placed in standard autosampler vials which are placed onto the Autosampler tray. The sample is injected preferably in splitless mode.
Tubes filled with an adsorbent are used for sample enrichment. They are placed on a specially designed revolving carousel which is mounted at the end of the heated transfer line. A splitter (press-fit Y) is installed at the end of the column.
During normal operation the solenoid valve is closed. Thus a standing gas volume serves as a gas barrier in the branch leading the adsorption tube. The column effluent is forced to flow through the splitter branch leading to the FID and does not contaminate the adsorption tube. During the collection solenoid valve is open drawing the effluent through the adsorption tube. Changing to the next tube is done by pneumatic. Two cylinders move to the next tube in less than 1 second.

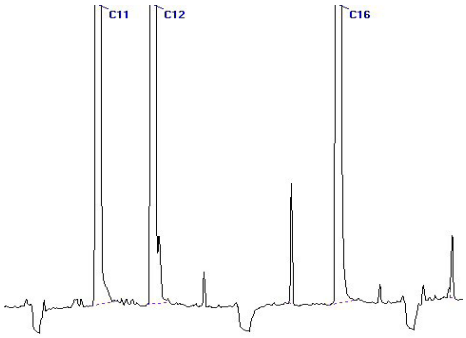
Prep 9000 Collect your peak

Fraction collection system

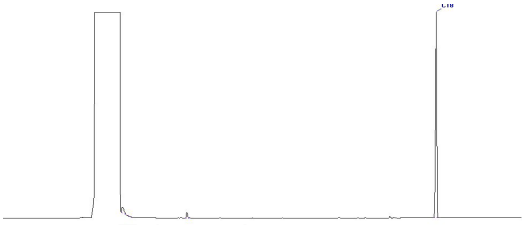
Up to 10 collection tubes can be placed on the carousel. Collection times are set either using the Prep9000 time table available from the hand controller or through the data system using time events.



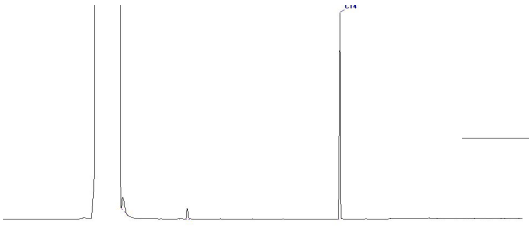
Reference chromatograms



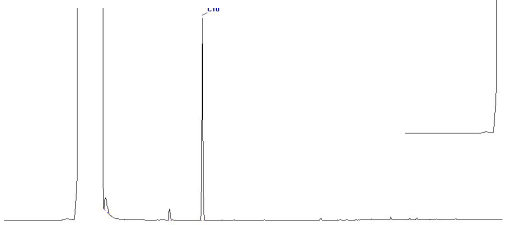
Collected chromatograms



Tube 3 chromatograms



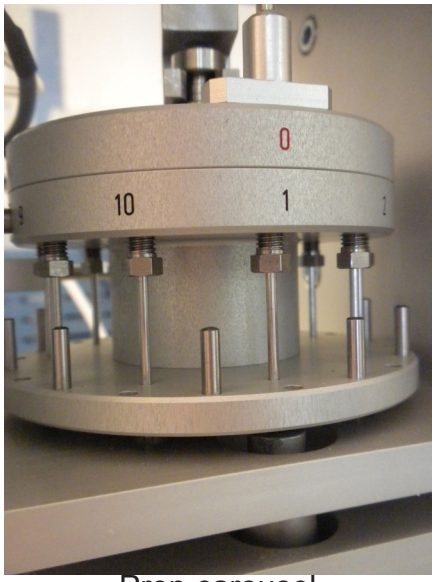
Tube 2 chromatograms



Tube 1 chromatograms

After a reference chromatogram is obtained, the collections windows are defined. Multiple run are required to obtain the desired amount of collected compound. Collection chromatogram can be checked for proper collection time.
Once collected the tubes are either solvent extracted or thermally desorbed.

Chromatograms above show the collection of 3 peaks n-decane, n-tetradecane and n-octadecane on three different tube. Each tube has been extracted with hexane and analyzed.

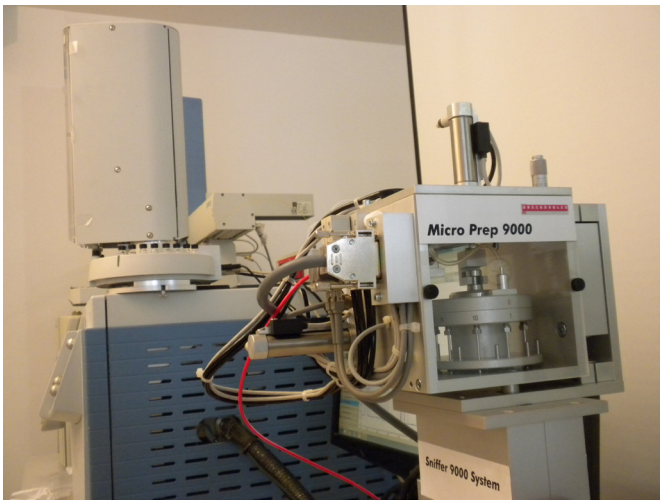


Prep carousel

Prep9000 Isolate your compound

Configurations

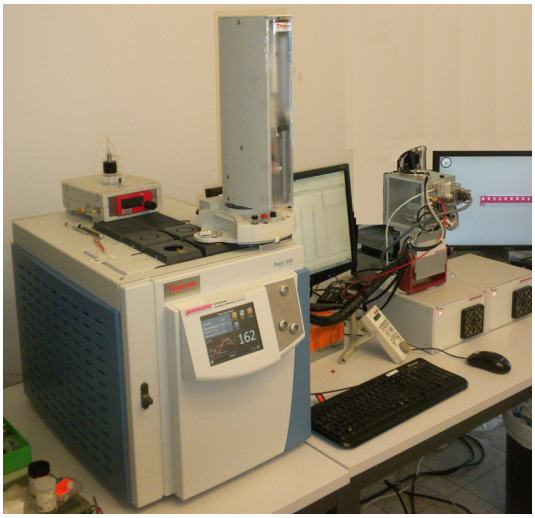
The Prep 9000 is available in many configurations:
Standalone system for existing GC (compatible with most of the existing GCs)
Prep station with Trace 1300 & AI1310
2D GC (MCSS) with single oven (one Trace1310)
2D GC (MCSS) with multiple oven (Two Trace 1300/1310)
All configurations are compatible with MS
The Prep9000 can be upgraded to a **Sniffer9000** for GC-O experiment



The Prep9000 on Thermo Trace 1310

Specifications

Prep 9000:



Available in 2 length: 80cm & 140cm
Connection on the left, right or top depending on GC configuration
Transfer line heated up to 325°C
Up to 10 collection tubes
Tube changing time: less than 2 seconds
Adsorbent available: Tenax, Porapack Q, Charcoal
Custom adsorption /empty tubes available upon request
Tube capacity: 1 to 4mg
Optional heated cone for collection of heavier compounds
Synchronization with GC and Autosampler via TTL, Contact closure, current sink.
Manual collection possible with a hand held controller
Manual advance of carousel possible

Can be upgraded to the **Sniffer9000** for GC-Olfactometry

Ordering information

Part No.	Description

Base Unit

9 1005002	**PREP 9000** Micro-Preparative Collecting system Includes: Dedicated flexible heated interface Heater control unit Hand held control unit Preparative fraction collector for up to 10 adsorption tubes Standard outfit, Manual

Accessories / Spare parts

9 1000055	Flexible heated interface
9 1005110	Empty glass adsorption tubes (set of 10)
9 1005111	Empty glass adsorption tubes (set of 50)
9 1005120	Filled adsorption tubes Porapack Q (set of 10)
9 1005121	Filled adsorption tubes Porapack Q (set of 50)
9 1005130	Filled adsorption tubes Charcoal (set of 10)
9 1005131	Filled adsorption tubes Charcoal (set of 50)
9 1005140	Filled adsorption tubes TENAX (set of 10)
9 1005141	Filled adsorption tubes TENAX (set of 50)

Prep9000

Brechbühler AG
Steinwiesenstrasse 3
CH-8952 Schlieren, Switzerland
Tel +41 44 732 31 31
Tax +41 44 730 61 41
E-mail: info@brechbuehler.ch

BRECHBÜHLER AG
scientific analytical solutions

www.brechbuehler.ch