SNIFFER 9000

The GC-Olfactive Measurement System

Dedicated to the GC-Olfactive technique

Maximum flexibility for future needs

Protecting your investements

GC - Olfactometry is a recently used Method in the Flavour and Frangrances Industry.

In the past decades, many detection techniques have been hyphenated to gas chromatography. Less attention has been paid to GC-olfactometry (GC-O) in which the human nose plays the role of the detector. However, the human nose is often more sensitive than any physical detector, and GC-O exhibits powerful capabilities that can be applied to flavors and perfumes, as well as to any odoriferous products (e.g. pollutants).

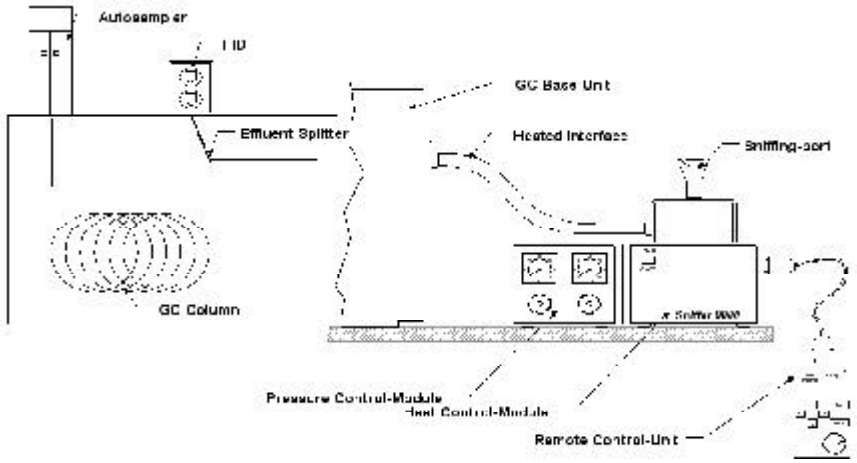
Olfactometric (or "sniffing") techniques allow the determination of impact odorants in food. They can be classified into two categories: dilution methods, which are based on successive dilutions of an aroma extract until no odor is perceived at the sniffing port of the chromatograph; and intensity methods, in which the aroma extract is only injected once but the smeller records the odor intensity as a function of time by moving the cursor of a variable resistor.

The Sniffer 9000 System is designed to be a dedicated „Sniffing-Device" as a stand alone unit to be connected to any GC available on the market.

The new Electronic- and Pneumatic design, based on a new industry standard (LON) provides maximum flexibility for future needs thuse protecting your investements in the Laboratory.

GC - Olfactometry - Principle of operation.

The GC - Olfactometry is a simple to use Method, by installing at the end of a chromatographic column a splitt which alows the sample to be splitted (e.g. 1:50) FID Detector /nose. The peak/odor impression correlation will then be performed by specialised fragrancy chemists.



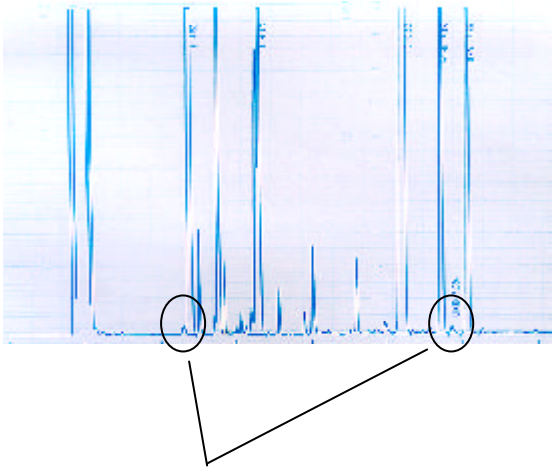
Technical description

As heart of the Sniffer 9000 GCO technology is the dedicated GC/Olfactometer heated Interface. Brechbuehler AG has over 25 years experience in implementing hyphenated techniques by using special designed interfaces. The Sniffer 9000 interface is engineered to transfer the high resolution available on capillary columns to the olfactometry „Sniffing Port" air delivered by any Capillary column without loss of GC resolution and influence of oxidation or turbulance.

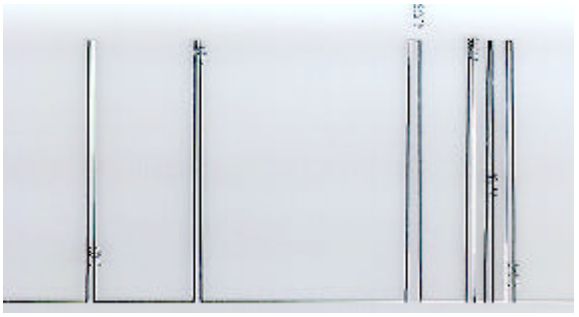
Built as part of the current Sniffer 9000 System, the interface is manufactured from a single Stainless steel tube which is heated by direct current, thus giving the best possible temperature profile. The interface consists of a standard fused silica line resulting in a inert olfactometer interface. Engineered to combine hot column effluents with laminar streams of inert Make-Up gas generated by the Sniffer 9000 System and additional humidification air supply to deliver distinct odorants to humans subjects with minimum discomfort and maximum separation. Integrated into any GC System available on the market, Brechbuehler AG's Sniffing 9000 System is one of the most flexible GC/Olfactometer Systems available on the market.

A special analog output allows the Sniffer 9000 to be connected to an additional Channel on an existing data system, or any integrator or recorder available in the lab, to record intensity via the integrated cursor wheel on the Hand-held Remote control unit.

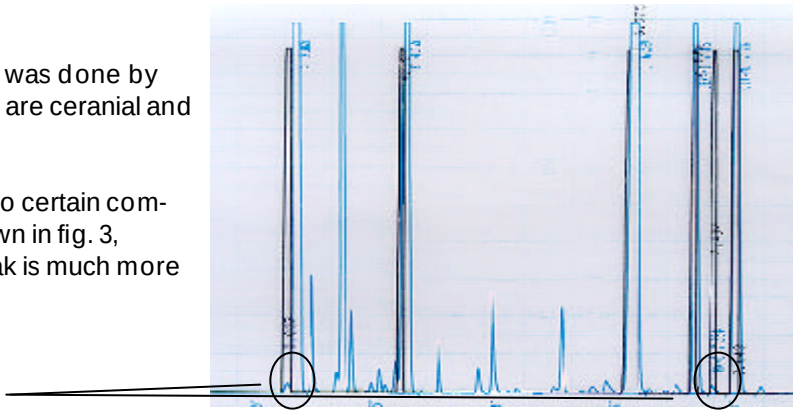
Chromatogram (fig. 1)



Odor intensity (fig. 2)



Chromatogram and Odor intensity overlay (fig. 3)

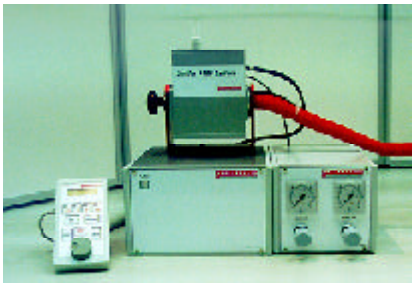


The Chromatogramm shown in this example was done by injecting a Citrus mixture. The peak of interest are ceranial and citral (see fig. 1)

As the humane nose is much more sensitive to certain compounds the result of the odor intensity is shown in fig. 3, where we can see that the odor intensity peak is much more intensiv then the FID peak.

Technical specifications

External stand alone olfactive measurement system.



Connection through dedicated heated transfer line of 80 cm (length) x 25 mm (diameter) Optional 140 cm available
Great flexibility. Easy installation to any GC
Workstation on the table with temperature and pressure settings for the second ary gas
Possibility to be sitted while working with elbows on the table
Easy assembling to the left or to the right of the oven

30 mm oven wall drilling diameter
Drill the whole then guide the transfer line up to the oven
Outlet with glass nozzle cone. Height : About 30 cm above the table
Temperature of the transfer line : 50°C to 350°C with control of accuracy

Make-up feeding (Nitrogen) with pressure control switch from 0 to 300kPa
Flow rate : 0 to 50 ml/min. Connection of the make-up in the oven on Y PressFitt and mixing at release gas outlet
Air feeding humidifier bottle (sparging) switch from 0 to 300kPa. Connection in the oven at the transfer line inlet
Flow rate of 0 to 50 ml/min. Preheated humid mixture going around melted silicium of the transfer line outlet
Fitting the outlet split by choosing different lengths and diameters melted silicium outlet detector blade. Maximum outlet diameter : 0.32 mm

Hand-Held Remote control unit, to program desired interface temperature
Power 115/220 V. 50/60 Hz max. 10 Amp

Ordering informations

Part No.	*Description*
	Base Unit
9 1000050	**Sniffer 9000** (80 cm Interface) GC/Olfactive measurement system includes: Dedicated flexible heated interface 80 cm leght Heater control unit Hand held control unit Special analog output to record odor intensity Standard outfit, Manual
9 1000051	**Sniffer 9000** (140 cm Interface) GC/Olfactive measurement system includes: Dedicated flexible heated interface 140 cm lenght Heater control unit Hand held control unit Special analog output to record odor intensity Standard outfit, Manual
	Accessories / Spare parts
9 1000055	Flexible heated interface 80 cm (standard)
9 1000056	Flexible heated interface 140 cm (optional)
9 1000060	Outlet glass nozzle cone
9 1000061	O-Ring for outlet glass nozzle cone
9 1000062	Fused-Silica transfer line
9 1000063	Press-fit with make-up-line
9 1000080	SNIFFER 9000 Software option
9 1000081	SNIFFER 9000 “Finger Span” option
9 1000085	SNIFFER 9000 Training and test kit

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