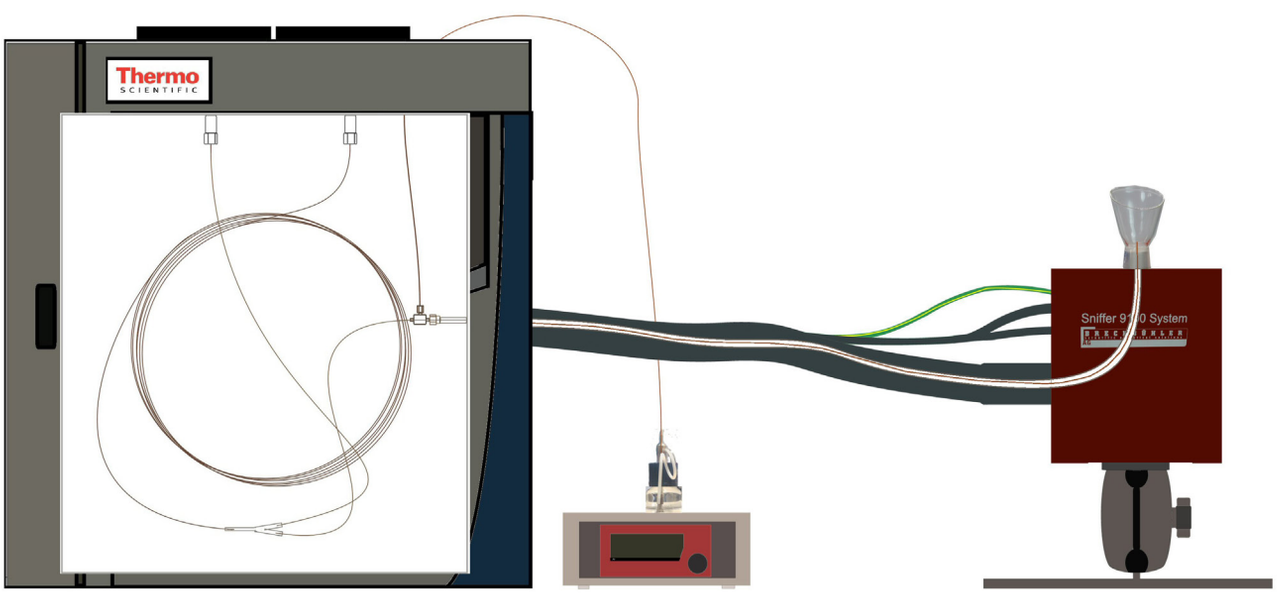
# Sniffer 9100 Series

## GC-O GC/MS-O, State of the art...

### GC-Olfactometry Method for Food, Flavor and Fragrances

GC-O refers to Gas Chromatography coupled with Olfactometry. A human (panelist) is one of the detectors and works in parallel with a GC detector. GC-O combines human perception and scientific response to help professionals link chemical compound to the emotional sense elicited by the said compounds. It allows one to characterize the flavors and fragrances and identify specific chemical compounds within them.

GC-O exhibits powerful capabilities that can be applied to flavors and perfumes, as well as to any odoriferous products (e.g. pollutants)
The Sniffer 9100 System is designed to be a dedicated Sniffing-port as a stand alone unit to be connected to any GC available on the market. It is also available as a complete system.




## Principle

GC-Olfactometry theory is simple to understand. By installing at the end of a chromatographic column a split, the sample is splitted between the FID Detector and the nose. The peak/odor impression correlation will then be performed by specialized fragrance chemists.

At the heart of the Sniffer 9100 GC-O system is the dedicated GC/Olfactometer heated Interface. Brechbühler has over 46 years experience in implementing hyphenated techniques by using special designed interfaces.

gc-o@brechbuehler.ch www.brechbuehler.ch
Tel.+41 44 732 31 31 Fax +41 44 730 61 41

BRECHBÜHLER AG

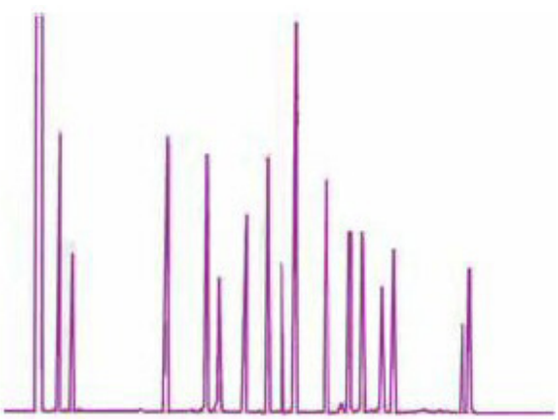
SCIENTIFIC ANALYTICAL SOLUTIONS

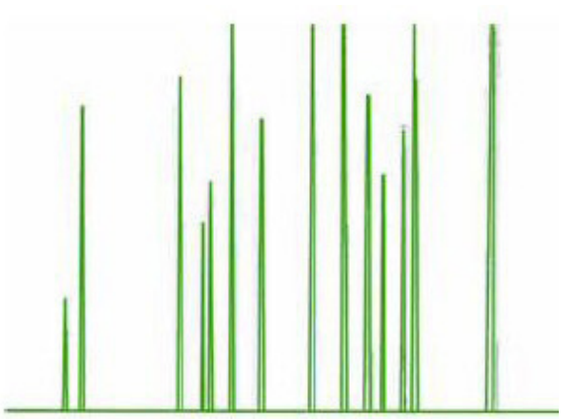
9100 Series
SWISS ENGINEERED

# Years of Experience!...

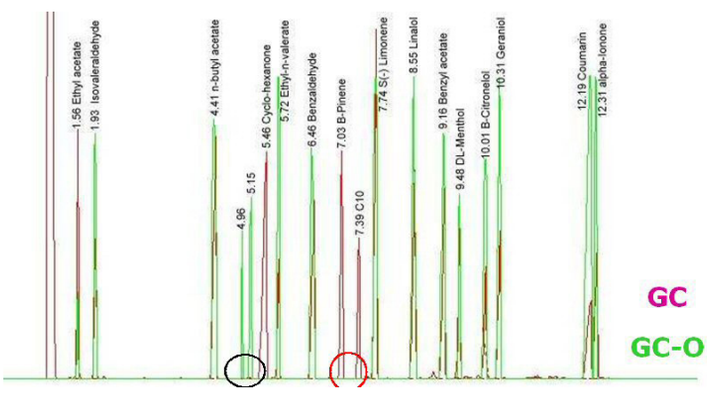
**The Sniffer 9100 System** is engineered to transfer the effluent preserving the entire high resolution available on capillary gas chromatography and is chemically inert to preserve the chemical identities.
The mechanical interface is manufactured from a single piece of stainless steel tubing heated by direct current.
The tube is profiled to give a uniform temperature profile. The chemical compound are transported to the nose using a deactivated fused silica.
Humid air is added around the transfer fused silica to add comfort to the panelist and prevent nasal dryness.

# FID & Odorogram...





**The Chromatograms** show the FID trace (top left), the Odor intensity (Odorogram) (top right) and the overlay of the two traces (right).
The human nose can be more sensitive to certain compounds than the FID. Some compounds are detected only on the “odorogram”. Compounds with low or no odor are detected only on the FID as shown on the overlay on the right.




# GC-O Smell your peaks

gc-o@brechbuehler.ch www.brechbuehler.ch
Tel.+41 44 732 31 31 Fax +41 44 730 61 41

# GC-Olfactometry - It‘s all about...

## ...Focus

One of the challenge in GC-O is the identification of odors eluting. The main detector in GC-O is the human nose. To get accurate results, the panelist must remain focused.

## ...Comfort

The sniffer 9100 Series has been designed to offer maximum comfort. It offers a comfortable working position away from any source of heat

## Test and training kit

To help you get the best of your system, we have developed a Test and Training kit.
This kit is ideal for beginners. In a few injections, you get a good sense of what to expect from the GC-O. It includes the column, compound mix and documentation



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# Developments...

## Tablet option

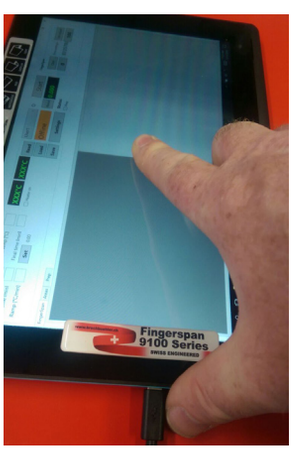
- 1 programmable temperature program with
- Initial temperature from 50°C to 325°C by step of 1°C
- Initial time in minutes from 1 to 599 minutes by step of 1 minute
- Temperature Ramp: form 5°C/min to 50°C/min by step of 1°C/min
- Final temperature from initial temp +1°C to 325°C by step of 1°C
- Final time in minutes from 1 to 599 minutes by step of 1 minute

## Touch areas programmable by software:

- Text displayed and fonts
- Color of the area
- Value of the area when touched (in % of full scale)
- Zero offset programable in % of full scale for touch areas

## User

- Definition of user name
- Change user from the main window

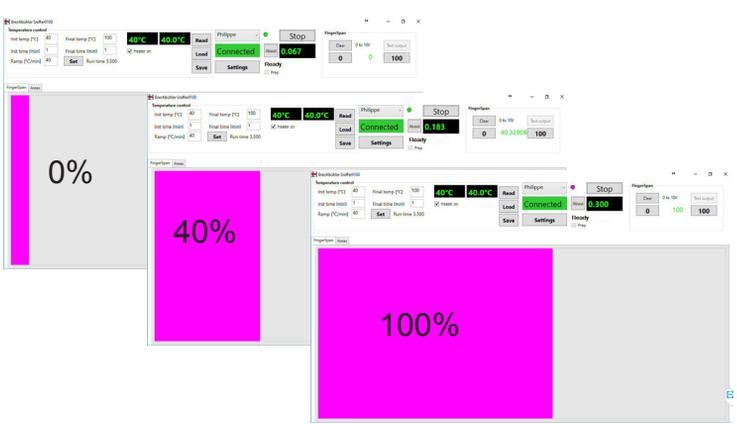



## Fingerspan option

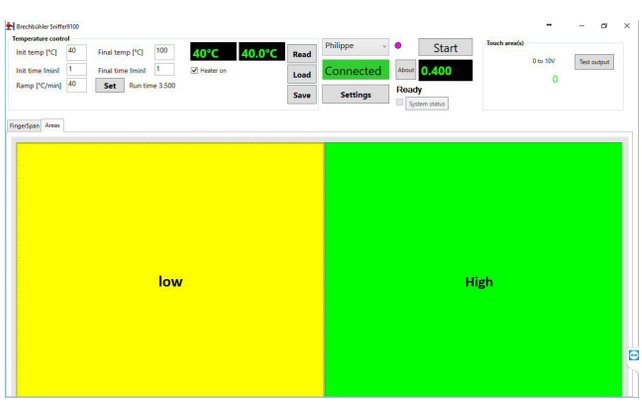
- Digital fingerspan with touch screen technology
- Programmable for each of the users created
- Set 0 and 100 % according to the finger span of each user
- Signal generated according to output range set

## Digital Fingerspan Screen

- At 0%, 40% and 100%




## Touch areas programmable by software

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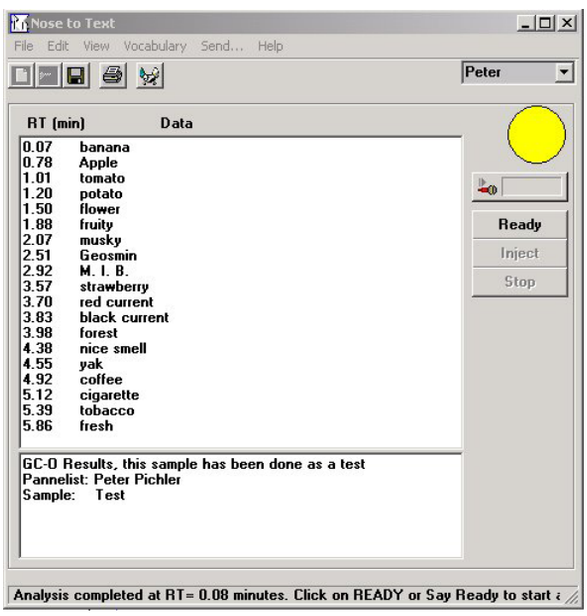
## Nose to text Option

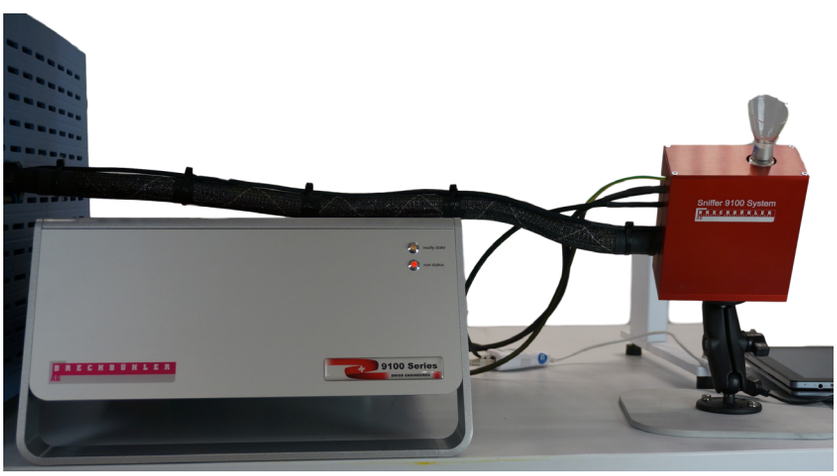
Based on the leading voice recognition software DNS, Nose to Text (NTT) listen to the panelist. When the panelist describe his perception of the odor, NTT transcribes the comments with the retention time. At the end of the analysis, the retention index can be calculated. The comments can be merged with the GC report from Thermo Scientific data system or other leading brands of data system.




Graphical display of the merged comments is also possible.

Nose to text comes with a customizable odor library for

# Sniffer 9100 Series Specification...




Interface of 80cm or 140 cm, up to 3 Sniffer 9100 Systems on one GC (optional)
Electronic dimensions 350 x 375 x 195mm

- LAN communication via TCP/IP
- Temperature control: 50°C to 325°C per step of 1 °C, Maximum recommended temperature 280°C
- Odor intensity marker
- Signal output range selectable by software:
  0 to 1 Volts
  0 to 5 Volts
  0 to 10 Volts

- I/O Signals for synchronization
  Start in to start the sniffer program
  Stop in to stop the sniffer program
  Ready out signal available to indicate the sniffer ready status
  Inhibit ready in signal available to prevent sniffer from going to ready stats

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