



SENSORY ANALYSIS SOLUTION

HERACLES ODOR ANALYSIS



Company Profile

Specialized in electronic sensing systems, Alpha MOS is positioned as the world leader in the design and development of instruments dedicated to the smell, taste and visual aspect (color and shape) analysis.

To answer the needs of major industries, Alpha MOS offers reliable and fast solutions that can control the sensory quality of their products and secure their manufacturing process.

HERACLES NEO- flash GC

Odor testing principle

HERACLES NEO is an electronic nose based on dual flash gas chromatography technology dedicated to smell and aroma analysis.

It allows manual injection and can also be used with an autosampler. The system is composed of :

- A dual fast GC electronic nose unit (hardware) to detect and analyze the volatile compounds in the sample
- A computer for system monitoring, data acquisition and processing with AlphaSoft software.



HERACLES NEO- Portfolio

				Dual colu	ımn - Fast GC E-Nos	HERACLES ust GC E-Nose with chromatography functionalities unputer - Start-up kit - Leak detector		
	CONFIGURATIONS	CHECK	OPTIMIZE		QUALIFY		ASSESS	
	CONFIGURATIONS	NEO 50	NEO 100	NEO 150	NEO 200	NEO 250	NEO 300G	NEO 300
Hardware	Injection mode	Manual	Headspace compact autosampler		Headspace autosampler		Headspace autosampler	Headspace / Liquid autosampler
	Sample capacity	N.A.	1 tray x 45 positions		2 trays x 45 positions		2 trays x 45 positions	1 tray x 60 positions (HS) 3 trays x 54 positions (Liquid)
	FID station (H ₂ /Air/Compressor)	Option	Not available	•	•	•		
Software	Basic statistics processing	Option	•	•	•	•	•	•
	Advanced statistics processing	Option	Option	Option	Option	Option		•
	AroChemBase	•	Option	Option	Option		•	
	Sensory ID	Option	Option	Option	•	•	•	
	MMI Pro	Not available	Option	Option	Option	Option	Option	Option

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Column and oven

- Metal capillary columns
- One injection, simultaneous analysis of two columns
- Oven temperature: 35°C to 300°C
- ➤ Heating rate up to 8°C/s (480°C/min)

Detectors

- 2flame ionization detectors(FID)
- > FID Ignition monitored by software
- Operating temperature :up to 300 °C
- > FID sensitivity: 10⁻¹⁰ to 10⁻¹² A/mV
- > FID dynamic linearity> 10⁶

Trap

- Solid adsorbent trap
- Packing:10mg of tenax TA
- > Sub ambient sampling capabilities
- > Temperature controlled from 0 to 280 °C

Inject

- > splitless type
- Heated up to 300 °C
- Programmable vent & septum purge

Application area

Food & beverage:

- Food rancidity
- honey types classification and aroma profiling
- Meat and fish freshness analysis
- Freshness and aroma analysis of fruits
- Yogurt and raw materials flavor analysis
- · Milk freshness analysis
- · Judgment of non-alcoholic beverages
- Distinguishing the smell of alcoholic beverages
- · Edible Oil freshness, grain storage
- Coffee & tea products
- · Aroma, seasonings and ingredients
- Healthy food flavors analysis

Packaging:

Grade evaluation of the odor of packaging materials

Autosampler

- ➤ Programmable injection speed
- Sample tray can be expanded to 3,each tray contains 60 positions
- >Independently heated module
- >Adjustable range of sample shaking speed: 250 ~ 750 rpm, each 1rpm controllable
- ➤ Optional range of syringe: 10ul ~ 5mL
- > Headspace/liquid automatic sampling or manual injection

Performance

- ➤ Start up in less than 20minutes
- ➤ RSD < 0.3% on retention times
- ➤ RSD < 3% on peak areas
- ➤ Usual analysis cycle time: 6 min

Dimensions

- ➤ Unit (WHD): 23*32*44cm
- ➤ Weight: 16Kg

Electrical data

➤ Supply voltage: 120V or 230V (50Hz or 60Hz)

Chemical industry:

Automotive interior materials , cosmetics, chemical raw materials

Pharmaceutical:

 TCM raw materials identification and decoction pieces quality control, formula improvement

Tobacco:

 The origin, grade, variety judgment, finished tobacco quality and aroma analysis of various tobaccos

Environment:

• Off-odor, gas leakage, sewage odor

Detection of pathogenic microorganisms: :

• Microbial detection of aquatic and meat products

Pesticide residues:

· Pesticide residues in fruits and vegetables

Medical diagnosis:

 Response to disease, tumor screening, digestive function, etc., by patient exhalation

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AlphaSoft

Compatible with Windows®7 and Windows®10. This software contains instruments control and monitoring and includes a complete chemometrics software package for data processing.

Statistical analysis

 PCA: The software can automatically combine and screen all the information, select the characteristic fingerprint information of the sample, and objectively reflect the differences between the samples.

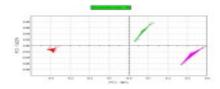


Figure 1. PCA map

• DFA: Classification of products based on several groups, Discrimination of various grades, origins, intensities, classes, etc.

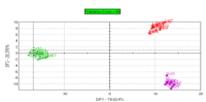


Figure 2. DFA map

• SQC: After training, blind samples can be qualified. Model for statistical monitoring of product quality and variability

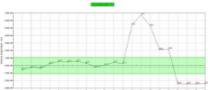


Figure 3.SQC map

 Sensory ID: Patented model for fast comparison of entire chromatograms without integration needed.

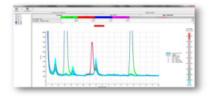


Figure 4. Sensory ID map

 Shelf life: Mapping of the evolution of odor/taste/visual profile of products over time

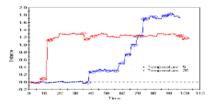


Figure 5 . shelf life map

• PLS: quantitative model, can be used for concentration quantification, can also be used to correlate with human sensory panel to predict sensory score.

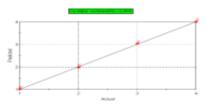


Figure 6. PLS map

AroChemBase - Chemical & sensory database:

- > 142,000+ compounds
- > 3,790+ with sensory attributes
- > 2,000+ with human smell detection thresholds
- ➤ Based on 10,000+ publications
- > Flexible & customizable



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