



SENSORY METROLOGY SOLUTIONS

color  
&  
shape  
smell  
taste



Increase the reliability of  
your sensory testing

# OUR SOLUTIONS for sensory testing

Alpha MOS delivers a customized answer to every customer need. You will benefit from our expertise in sensory analysis instrumentation and from our support all through your sensory testing project.



## APPLICATIONS RANGE

Our sensory evaluation instruments give practical tools for decision making in **quality control & product development**:

- Benchmarking of competitive products and characterization of sensory differences
- Sensory profiling to help select the optimal formulation
- Follow-up of sensory features ageing over time (stability & shelf life testing)
- Sensory quality preservation testing further to a change of supplier, ingredient or process
- Determination of the best storage conditions to preserve organoleptic quality
- Sensory conformity checking, investigation of defect origin

## BENEFITS OF OUR SOLUTIONS

- Make sensory evaluation more reliable and objective
- Improve production sensory quality and consistency over time
- Standardize sensory quality in production plants worldwide
- Monitor the organoleptic features of your products
- Qualify customer claims to reduce financial loss
- Significantly decrease production loss thanks to an earlier detection and better reactivity on sensory defects
- Speed up liberating tests on production batches



# HERACLES Smell analysis

HERACLES is dedicated to the analysis of your products' aromas as well as chemical molecules composing the odor. HERACLES uses **flash gas chromatography** and unique technical characteristics as dual column technology. This system provides **unsurpassed performance** in assessing the chemical composition and related sensory attributes.



## HERACLES Key features

**GUARANTEED CONSISTENCY OVER TIME:** a high level of columns protection (headspace injection & embedded trap limiting impurities, no oxygen in the columns with permanent carrier gas circulation) contributes to long-term stability. Fully automated operations and accurate temperature control produce a high level of measurements reproducibility and stability. Finally, machine calibration avoids potential drift.

**HIGH SPEED & THROUGHPUT OF ANALYSIS:** with Flash GC capabilities coupled with an autosampler, HERACLES can analyze up to 200 samples a day with a display of volatile profile less than 2 minutes.

**UNSURPASSED SENSITIVITY:** fast gas chromatography with embedded pre-concentration trap allows to reach very low detection thresholds on volatile compounds.

### **SUITABLE FOR EVERY USER:**

- Expert mode for parameters set-up and further analytical investigations
- 380 ready-to-use analytical methods included

## Several capabilities with HERACLES

- ✓ Check with HERACLES NEO 50
- ✓ Optimize with HERACLES NEO 100 & 150
- ✓ Qualify with HERACLES NEO 200 & 250
- ✓ Expertise with HERACLES NEO 300G & 300
- ✓ Focus on essentials with HERACLES QA

## HERACLES NEO Portfolio

AlphaSoft software & options (p.12/13):

	NEO 50	NEO 100 NEO 150	NEO 200	NEO 250	NEO 300G NEO 300
Basic statistics processing	Option	•	•	•	•
Advanced statistics processing	Option	Option	Option	Option	•
AroChemBase	•	Option	Option	•	•
Sensory ID	Not available	Not available	•	•	•
MMI Pro	Not available	Not available	Option	Option	Option

**CHECK HERACLES NEO 50:** use HERACLES NEO 50 to rapidly check compounds of interest, and identify them easily thanks to AroChemBase linked to dual GC technology.

**OPTIMIZE HERACLES NEO 100 & 150:** fully adapted to product development environment, HERACLES NEO 100 & 150 allow easy sample comparisons and compounds characterization with automated samples handling using a compact gas autosampler.

**QUALIFY HERACLES NEO 200 & 250:** first step to ensure production quality (batch-to-batch consistency) and prevent any outlier by confirming the presence or absence of specific markers. AroChemBase can even help you identify them! HERACLES NEO 200 & 250 perfectly match QA/QC environment with Sensory ID for an easy PASS/FAIL quality display that comes with a rapid sample throughput thanks to the large capacity gas autosampler. Additionally, the basic statistical data processing package provides an easy comparison of your sample and MMI Pro an intuitive interface with information you need for your daily use.

**ASSESS HERACLES NEO 300G & 300:** a powerful system offering in-depth investigation on chemical composition: origin of off-odors and sensory defects, competition benchmarking etc. The advanced statistical data processing package allows creating odor maps, predictive, quantitative and qualificative models to easily compare your products and identify the molecules with AroChemBase.

HERACLES NEO 300G is also equipped with a gas autosampler and HERACLES NEO 300 with a liquid/gas autosampler.







## HERACLES QA

### Focus on essentials

HERACLES QA is our dedicated solution for production environment and more specifically to assess food and beverage quality.

**DON'T MISS OUT OFF-ODORS ANYMORE:** with this tool, focus on specific markers responsible for bad odors & tastes because of several reasons as process default, raw material contaminations, ingredient instability etc.

- Monitor every production line with the same reliable system and avoid any risk to miss out off-odors
- Easy to read quality information with a PASS/FAIL display
- Quality assurance tool

**CUSTOMIZED SOLUTION FOR YOUR APPLICATION:** every industrial area has its own expectations and challenges, we specifically customized our system to meet your requirements.

With our development tool, analyzing your specific product with integrated artificial intelligence, we are able to define a customized model for selected markers, differentiating off-taste vs on-taste products for the following market segments:

- Aroma & flavors
- Oils
- Soft drinks, coffee & tea
- Dairy
- Seasonings & sauces
- Alcohols & spirits
- Pet food
- Packaging

## Dedicated solution for your quality assurance

### Only 3 development steps

- ✓ Collaboration with our application center  
Identification and selection of compounds responsible for off-taste
- ✓ HERACLES QA training  
Recognition of your selected markers in your products
- ✓ Customized solution  
Ready to be implemented in your production plants

# Molecules characterization



A unique database of molecules with numerous search capabilities to help identify the compounds detected when assessing odors.

Based on the Kovats index, it delivers a list of possible molecules with related sensory attributes, sorted by relevance index.

## AroChemBase Features

- ✓ 99,000+ molecules with retention indices on several gas chromatography columns
- ✓ 2,000+ compounds with related sensory attributes
- ✓ 1,800+ molecules with human smell detection thresholds
- ✓ Based on 10,000+ publication references
- ✓ Customizable and flexible library

## USERS PROFILE

- HERACLES NEO users: generated data are automatically integrated into AroChemBase software
- Most GC and GC-MS users: AroChemBase stand-alone software, compatible with any system equipped with a FID, PID or TCD detector
- Without instrument: anyone wishing to consult the chemical and sensory library

## SEVERAL POSSIBILITIES

- Display all compounds potentially present
- Check the presence of a compound of interest
- Search all molecules from a chemical family
- Refine the search by selecting sensory attributes
- Focus the search on a specific product in the literature

## VARIOUS APPLICATIONS

- Aroma profiling
- Chemical characterization
- Sensory benchmarking as competitive products study, formulation, retro-engineering etc.
- Off-odor identification useful to determine production defaults and investigate consumer claims

# ASTREE Taste analysis

ASTREE electronic tongue is an instrument dedicated to the analysis of your products' taste.

Based on ChemFET sensor technology and conductivity measurements, this device can detect organic and inorganic compounds responsible for taste in liquids in order to assess the overall taste profile, just as the human tongue does.



## ASTREE Key features

**OBJECTIVE AND RELIABLE MEASUREMENT:** the automated instrumental measurement under controlled conditions guarantees unbiased and reproducible results. The method is particularly suitable for the research and development of new formulations or finished products.

**FAST ANALYSIS:** the carousel autosampler allows to fully automate the analysis sequence of a samples set, with a sample evaluated every 3 minutes.

**POWERFUL QUANTITATIVE ABILITIES:** with the electronic tongue sensors, it is possible to simultaneously rank similar samples based on the intensity of salty, acid and umami attributes.

**SAFE METHOD:** using the electronic tongue prevents from exposing panelists to unknown or potentially dangerous compounds.

## Powerful analytical Capabilities

- ✓ Taste maps for easy and fast comparison on the overall taste fingerprint: benchmarking, recipe optimization, taste stability follow-up, impact of a change in ingredient or process on the taste
- ✓ Quantitative analysis of taste masking efficiency
- ✓ Ranking on taste attributes intensity for saltiness, umami and sourness
- ✓ Quantitative analysis in correlation with a sensory panel



IRIS

# Color & shape analysis



Based on **high resolution camera** imaging under controlled lighting conditions in a closed cabinet, IRIS visual analyzer achieves a **detailed measurement** of products aspect (colors and shapes).

The instrument can **evaluate the whole product** as perceived by the consumer or focus on selected portions.



IRIS

## Key features

**OBJECTIVE AND RELIABLE VISUAL ASSESSMENT:** unaffected by product consistency or texture, IRIS achieves reproducible color and shape measurements under controlled conditions and assures product traceability through data storage.

**IN-DEPTH ANALYSIS:** the instrument measures both color and shape parameters in one acquisition on the whole product. It does not deliver a mean value but determines the proportion of each visible color, color distribution and variations across the surface as well as information such as circularity, area or surface ratio between minimum and maximum size.

**EASY AND FAST METHOD:** this non-destructive analysis requires no sample preparation and is suitable for complex and non-uniform areas. Thanks to a large measurement surface, sample size is seldom an issue, which also allows to assess several samples in one analysis.

## Powerful analytical Capabilities

- ✓ Visual conformity control to check that it meets acceptable quality standards
- ✓ Visual defect detection
- ✓ Size distribution control in mixes or batches
- ✓ Color stability testing over time, assessment of aspect change over time
- ✓ Evaluation of process impact on the visual aspect Benchmarking of competitive products based on visual aspect

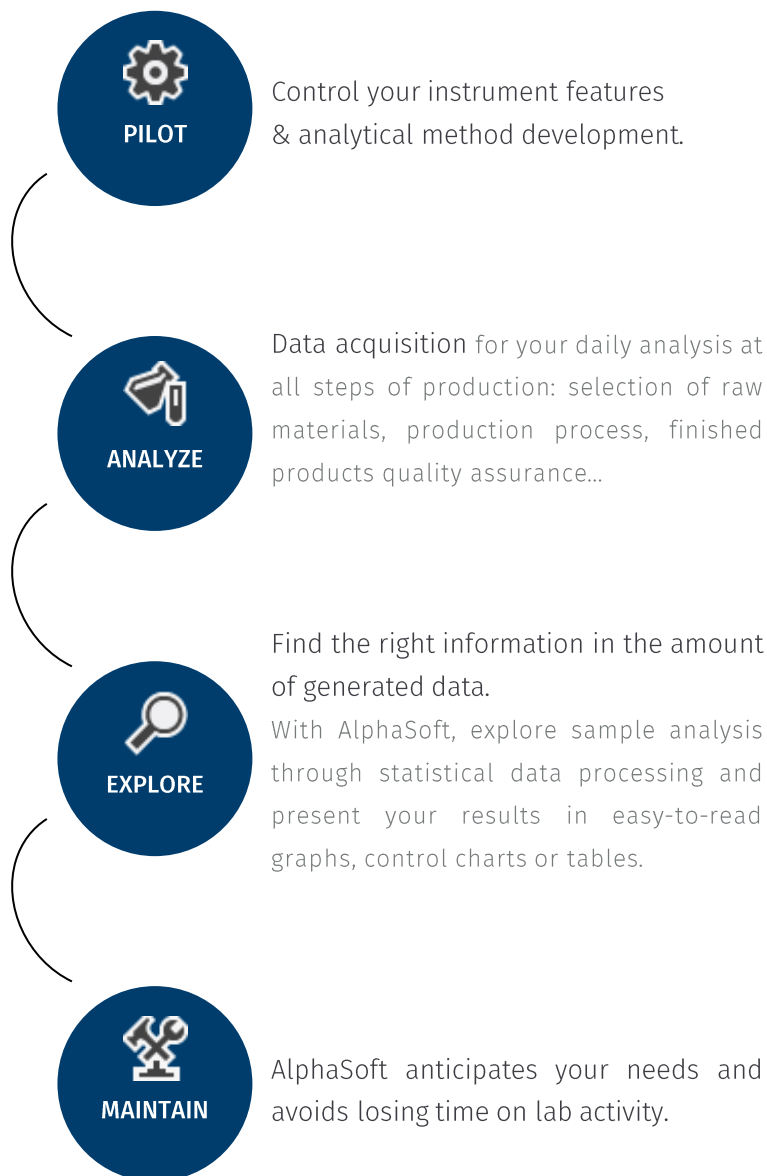
# Operation & data processing



**3 instruments, 1 software:** AlphaSoft is the unique software platform that allows to operate all Alpha MOS sensory analysis instruments and to process measured data.

It combines HERACLES, ASTREE and IRIS results to have an overall point of view of your products organoleptic properties.

This powerful software covers your needs **from the sample to the results:**



## Data processing Statistics

### LEVEL A

Data exploration prior to building another model: Principal Components Analysis (PCA) is an easy qualitative comparison of samples.

### LEVEL B

Enter another dimension of information!

Quality control chart (SQC & SIMCA), Qualitative models (DFA), Quantitative model (PLS).

## ALPHASOFT

### Key features

**AUTOMATIZE DATA TREATMENT:** no specific skill needed, allowing time and money savings.

**ALL YOUR DATA ARE UNDER ONLY ONE SOFTWARE:** integrate external data to correlate instrumental results with sensory panel evaluation.

**MULTI LEVEL USERS:** improve your team organization by giving different access levels to operators and managers, for a better traceability of results.

## HERACLES

### MORE POSSIBILITIES



#### SENSORY ID

PASS/FAIL results display for quality product assurance

Save the time you were spending on understanding chromatograms results, Sensory ID is our model designed for industry users who need to make fast and good decisions with a PASS/FAIL display.

Simplify chromatographic data exploration step: the complete fingerprint is analyzed and no integration peak is necessary.

Changing the way of seeing the chromatograms results also means that we offer a new alignment method; no system calibration is needed with this model.

#### MMI PRO

From samples to analysis report, at a glance!

MMI PRO is an intuitive interface that displays only the information you need for your daily work. Find all your tools in one window view to create and launch easier and faster analysis.

It is specifically dedicated to production environment by reducing the number of steps for routine operators and avoid potential errors.



### **Alpha MOS France**

Immeuble Le Colombus,  
4 rue Brindejonc des Moulinais,  
31500 Toulouse - FRANCE  
Ph: + 33 5 62 47 53 80

### **Alpha MOS USA**

7502 Connelley Drive, Suite 110,  
Hanover, MD 21076-1705 - USA  
Ph: +001-410-553-9736

### **Alpha MOS China**

Rm 701&706, No 1968 GongHe Xin Road,  
LifeHub@Daning, Jing'an District  
Shanghai, 200072 - CHINA  
Ph: +86 21 6209 3271

### **Alpha MOS Japan**

Mita Nexus Bldg. 8F, 1-3-33 Mita,  
Minato-ku, Tokyo 108-0073 - JAPAN  
Ph: +81 3 6275 1500

Specialized in electronic sensing systems, Alpha MOS is positioned as the world leader in the design and development of instruments dedicated to 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.

As the first company to market electronic nose technology, Alpha MOS has always made strong investments in R&D to develop innovative products to meet these needs.

Headquartered in Toulouse, France, Alpha MOS has subsidiaries in the USA & China and a network of more than 30 distributors worldwide.



[info@alpha-mos.com](mailto:info@alpha-mos.com) | [www.alpha-mos.com](http://www.alpha-mos.com)