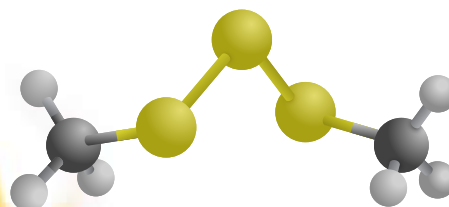


# The Nose Knows...

GC-Olfactory Solutions for Evaluating  
Flavors, Aromas, & Odors



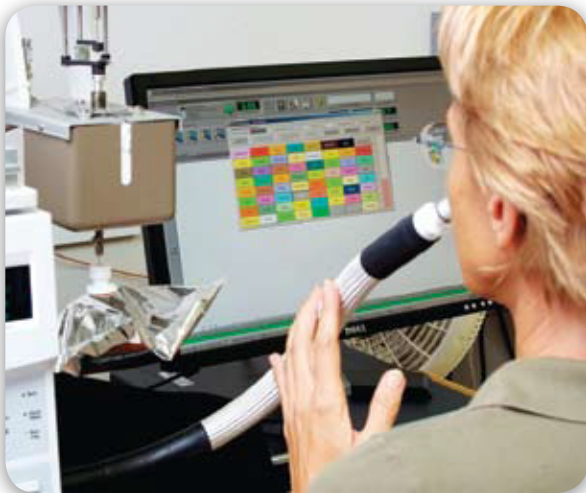
## **VOLATILE ANALYSIS**

The Premier Provider of Innovative  
Solutions to Identify and Re-Create  
Off-odors, Flavors and Aromas.

Volatile Analysis is the leader in the development and utilization of GC-Olfactory techniques and ancillary devices to help resolve real world issues relating to aroma and odor.

When it comes to off odors or aroma profiling, many standard GC techniques cannot accurately identify the important odor causing components. The active aroma/odor component is often present at very low concentrations in a complex matrix of volatile constituents. In many cases, aromas / odors are found in the parts per billion and even parts per trillion concentration range. The challenge to identify the active odor components requires an integrated approach to the analysis. An integrated approach means combining sensory with multidimensional analytical instrumentation.

**Crisis** “- determine what the real cause is behind off-odors & off-flavors”



**Profiling** “- re-creating specific off-odors & aromas for repeatability & quality”

## Applications:

Exploratory Flavor/Odorants  
Food/Packaging Interaction  
Packaging Related Flavors/Odors  
Chemical Product Odors  
Chemical Neutralization Studies  
Filter Effectiveness  
Polymer Film Odor Profile  
Microwave Packaging Volatile  
Oxidation Odors

Adhesive Odors  
Polymer Volatiles  
Industrial Effluent Odors  
Sulfur Odors in Paper  
Swine Farm & Waste Stream Odors  
Sensory Correlation Studies  
Reverse Engineering of Flavors/Odors  
Flavor/Odor Impact Ranking  
Aging Studies  
Hydrogen Sulfide Analysis

Cereal Flavors  
Cheese Flavors  
Citrus Flavors  
Beer flavor Profiling  
Hops, Grain Analysis  
Yeast Comparisons  
Raw Material Analysis  
Spice & Herb Analysis  
Aroma Extract Dilution  
Candy & Gum Flavoring

Carbonated Beverages Off-Odor  
Coffee Flavor Profiles  
Odor Complaint Investigation  
Dairy Flavor Profiling  
Essential Oils  
Pheromone Analysis  
Natural Product Analysis  
Fermentation Products  
Food Industry  
Fragrance Industry  
Living Flowers & Fruits Profiling  
Chiral Heart-Cut Separations  
Cosmetic Aromas

# Consulting & Analytical Services

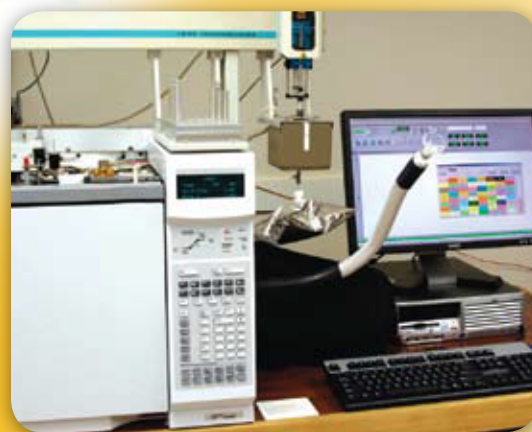
## Integrated Approach - Sensory / Analytical

- Rapid resolution to difficult flavor/aroma and off-odor identification
- Aroma profiling / Aroma dilution analysis
- Critical flavor component determination
- Food / Packaging interactions
- Aroma / flavor profiling foods, extracts, wines, beer and distilled spirits
- Hops, grain analysis, yeast comparisons
- Raw material analysis
- Aroma analysis and reformulation
- Competitor product analysis
- Trace impurities in LPG and VCM feedstock
- Methods development in QC-GC applications
- Methods development for multivariate analysis
- Chemical neutralization or masking studies
- Hydrogen sulfide analysis at ppb, ppt levels
- Sensory panels / Analytical correlation

## Instrumentation

### Integrated Approach - Sensory / Analytical

- Utilizes multidimensional GC's & Olfactory sensing
- Flame Ionization
- Photoionization
- Olfactory
- Mass Spectrometer
- Single or Auto sampling
- Dual columns for fractionation
- Little or no preparation time
- Real time aroma characterization
- MS nose detectors for multivariate QA methods development



## Gas Collection

- Transport malodorous higher polar, semi-volatile compounds
- Thermal desorption tube
- High performance
- Cost efficient
- Made from Teflon FEP
- Prevents gas migration

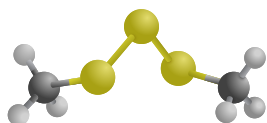


## Aroma Characterization Software

The AromTrax screen shows up to 48 aroma character buttons, all editable for your application. An aromagram is compiled from the aroma characteristics, aroma intensities and retention time, which can then be compared to an original chromatographic profile. This software permits a real time assignment of aroma characteristics and intensity compared to specific peaks of the chromatographic profile. The chromatogram is derived from signals measured at the primary detector. This is how the analytical and sensory components of measurement come together to isolate and measure the compound responsible for the aroma characteristic.



Volatile Analysis reserves the right to change specifications without notice as part of our continuous program of product improvement.



**VOLATILE ANALYSIS**

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