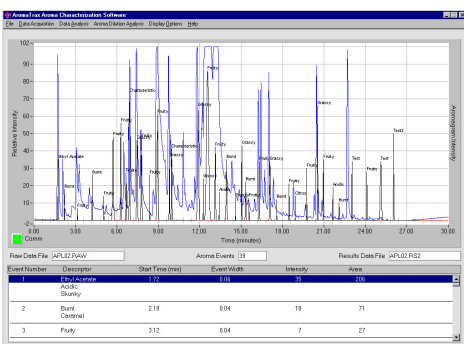


VOLATILE ANALYSIS

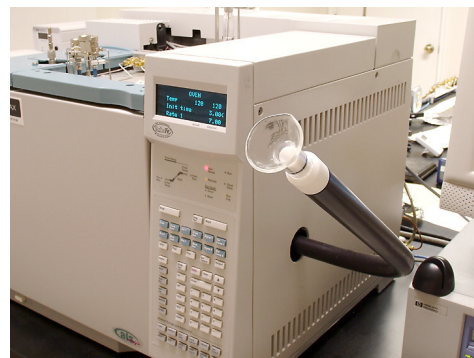
Microanalytics Model 2100 Multidimensional GC/MS Olfactometry System

The Model 2100 combines the superior resolving capabilities of dual column or multidimensional gas chromatography, with the power of simultaneous GC/MS Olfactometry. This makes this instrument system unsurpassed in resolving and identifying aroma and malodor components in a wide variety of sample matrices.

The Model 2100 is based upon a design refined over 15 years by Microanalytics. It utilizes disparity phase, multidimensional GC design with Dean's pressure switching. The approach offers the user resolving power that is unattainable in any single column GC design.



This pressure balanced design may be operated in constant pressure or constant flow mode. It also offers the advantage of 1st column backflush, which allows the user to remove higher boiling point or unwanted compounds from the system without high temperature "bake outs". The included MultiTrax™ multidimensional control software accurately controls the varied timed events, while the AromaTrax® aroma characterization and identification software permits the user to easily and reproducibly catalog the intensity and overall description of aroma and odors noted at the olfactory detector during an analysis.

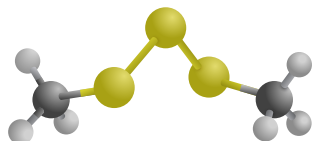


Model 2100 Features and Benefits

Sample types associated with odor, aroma or malodor analysis frequently present a difficult chromatographic challenge due to the sheer complexity of the sample. Materials such as tobacco, chocolate, coffee and others may have over 1000 components in the headspace alone. The analytical challenges are compounded by the widely varying concentration of these components, and the fact that many of them have little to no impact on the overall aroma/ flavor profile of the material.

The Model 2100 was specifically designed to deal with these sample types, and enable the user to separate the components of interest; identify the "character defining" compounds; and identify those components with conventional mass spectral techniques as described in more detail below:

- Phase disparity multidimensional GC gives the Model 2100 the resolution that far exceeds the capabilities of any, single column GC system, regardless of column length and phase. One or more fractions from the 1st column separation may be "heartcut" onto the 2nd column, of a different phase. This "phase disparity" minimizes the chance of co-elution to enhance the peak resolution.
- The heartcut fraction may be re-focused onto the 2nd column with a simple, liquid CO₂ cryotrap (optional). This allows even intentionally overloaded injections (to enhance sensitivity) to be reshaped before separation on the 2nd column.
- The parallel combination of an ergonomically designed olfactory port, in conjunction with a conventional quadrupole mass spectrometer allows the user to quickly assign aroma/odor significance to regions of the chromatogram and subsequently identify those peaks of interest.
- The MultiTrax and AromaTrax software packages, along with the standardized Chemstation control and data acquisition system, allows the user to quickly define methodology for subsequent analysis.



VOLATILE ANALYSIS

Gas Chromatography Systems and Services

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CONFIGURATIONS and REQUIREMENTS

M2100-00530	Model 2100 Kit, Multidimensional GC/Olfactory with 530 μ m ID column set
M2100-00320	Model 2100 Kit, Multidimensional GC/Olfactory with 320 μ m ID column set

The Model 2100 AromaTrax system "kit" upgrade can be installed on any new or existing Agilent GC/MS system. Please refer to the system requirements for recommendations. We will be happy to work with your local Agilent representative on the purchase or upgrade of the GC/MS system to insure the correct configuration.

General System Requirements:

- Agilent Technologies Model 6890/7890 Gas Chromatograph
- G1552A/G3452A Split/Splitless Inlet (S/S) with EPC or equivalent
- G1562A/G3462A Flame ionization detector (FID) with EPC
- G1570A/G3470A Three channel auxiliary EPC
- Agilent Technologies Mass Selective Detector (MSD) Model 5973 or 5975.
- G1701BA or above MSD Network Chemstation™ data acquisition and analysis software

AVAILABLE OPTIONS

Model 2100—Configuration Options

Option M2110 2nd Column Cryofocus

This option configures the 2nd column of the multidimensional system with a liquid CO₂ cryofocus. The cryofocus is controlled via valve events in Chemstation and can be utilized in a variety of applications. The unique design requires no ferrules or fittings and has no effect on column performance when not in use.

Option M2120 Dual Oven Configuration

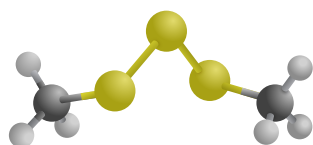
This option configures the 2nd column of the multidimensional configuration in a separate Model 6890 GC. This allows precise and programmed temperature control of the 2nd column separation.

Option M2160 First Column Bypass—Olfactory Port

This option allows the user to route the 1st column effluent directly to the olfactory port. When the bypass mode is active, the column effluent is split equally to the FID and the olfactory detector. When the bypass is closed, the 1st column effluent is routed to the FID only. This allows the GC to be used as a single column FID/olfactory system. Information from these analyses can be used to precisely determine subsequent heartcut events.

Option M2180 Dual Olfactory Port

This option configures the system with 2 (two) olfactory ports. The 2nd olfactory port can be used as a 1:1 split with the primary olfactory port, or may be disabled if desired. The M2180 option is desirable for training purpose, or NIF/SNIF applications. An independent computer system and AromaTrax software allows simultaneous data collection.



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