Foods, Flavors, & Fragrances

Alcohol & Spirits

DPS Instruments, Inc.

www.dps-instruments.com

Distilled spirits, wine, and beer all contain flavoring agents, esters, acids, and aldehydes. While the ethanol content is closely monitored and regulated by government agencies, the unique flavor of each spirit is the unique combination of the individual compounds. While other methods can determine the ethanol content, only Chromatography can measure the ethanol and separate the individual constituents for identification. When you want to know what makes your favorite tequila, rum, or whiskey taste so special you need a DPS Alcohol & Spirits GC System. The latest designed high resolution column and the sensitive FID detector does the hard work for you. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Alcohol & Spirits GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

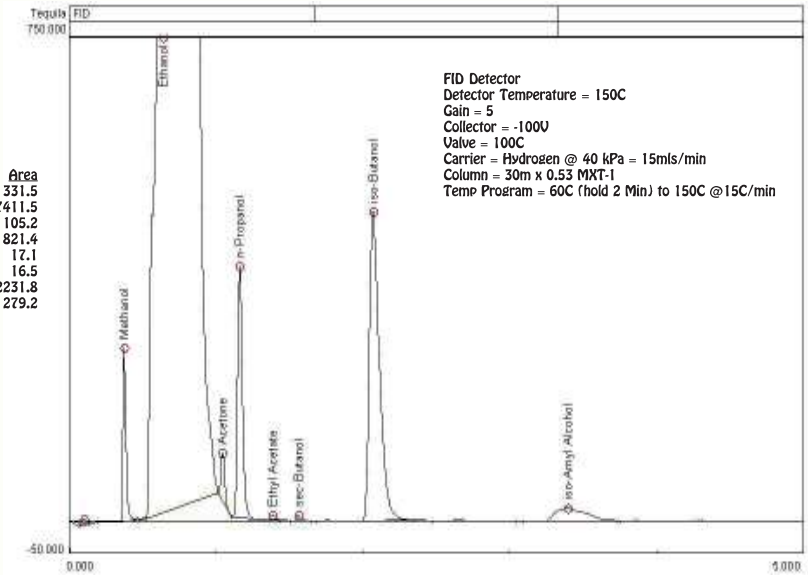
600-C-040 - Series 600 Alcohol & Spirits GC Analyzer (FID, 30m)
500-C-040 - Companion 1 Portable Alcohol & Spirits GC Analyzer (FID, 30m)

Series 600 GC

Gold Label Tequila

Companion 1 Portable GC

Peak	Component	Area
1	Methanol	331.5
2	Ethanol	67411.5
3	Acetone	105.2
4	n-Propanol	821.4
5	Ethyl Acetate	17.1
6	sec-Butanol	16.5
7	iso-Butanol	2231.8
8	iso-Amyl Alcohol	279.2



11/2015
Specifications may change without notice.

Foods, Flavors, & Fragrances

Alcohol & Spirits

DPS Instruments, Inc.

www.dps-instruments.com

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Series 600 GC

Gold Label Tequila

Companion 1 Portable GC

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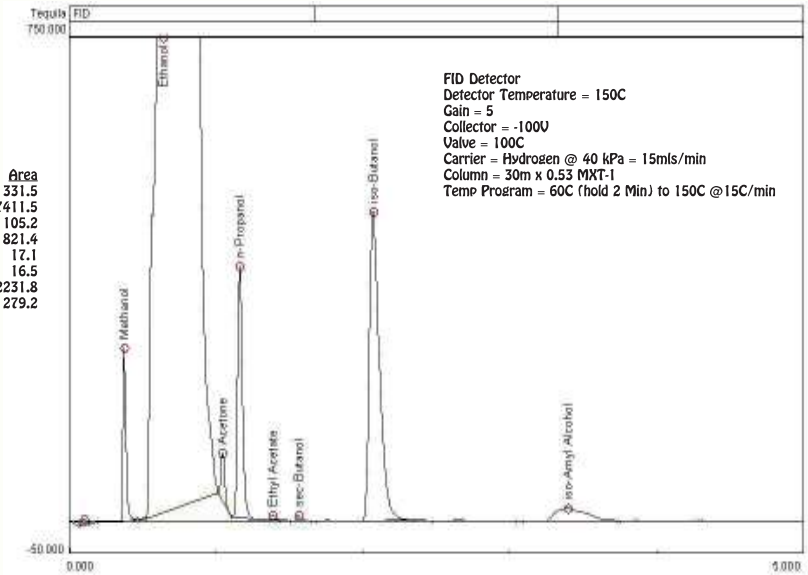


11/2015
Specifications may change without notice.

Foods, Flavors, & Fragrances

Essential Oils

DPS Instruments, Inc.

www.dps-instruments.com

Essential oils are used in aromatherapy products, vitamins and food supplements, flavoring agents, and perfumes. There is nothing like the smell of fresh roses in the air, or the taste of spearmint in your favorite chewing gum. However, since these are naturally occurring products the chemical composition varies through each region and growing season. Maintaining a consistent concentration in your product takes considerable effort and constant monitoring, and unfortunately there are always producers cutting the expensive oils with less expensive fillers. The DPS Essentials Oils GC Analyzers can answer these quality questions and assure you are getting what you are paying for. Specially designed columns and the sensitive FID detector do the hard work. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Essentials Oils GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

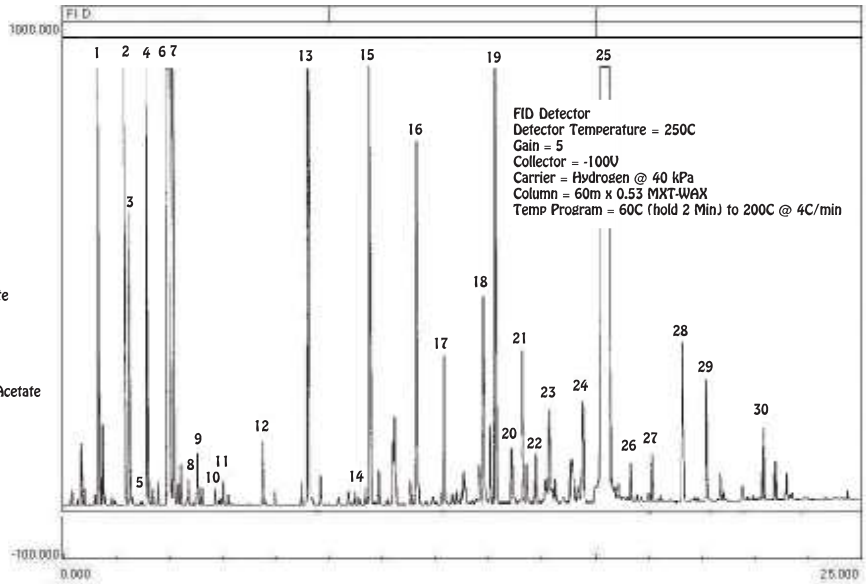
600-C-042 - Series 600 Essential Oils GC Analyzer (FID, S/S, 30m)
500-C-042 - Companion 1 Portable Essential Oils GC Analyzer (FID, 30m)

Series 600 GC

Spearmint Oil

Companion 1 Portable GC

Peak	Component
1	α-Pinene
2	β-Pinene
3	Sabinene
4	Myrcene
5	α-Terpinene
6	Limonene
7	1,8-Cineole
8	cis-Ocimene
9	γ-Terpinene
10	p-Cymene
11	Terpinolene
12	3-Octyl Acetate
13	3-Octanol
14	Menthone
15	trans-Sabinenehydrate
16	β-Bourbonene
17	Linalool
18	Terpinene-4-ol
19	β-Caryophyllene
20	Dihydrocarvone
21	trans-Dihydrocarvyl Acetate
22	trans-β-Farnescene
23	α-Terpineol
24	Germacrene
25	Carvone
26	cis-carvyl Acetate
27	trans-Carveol
28	cis-Carveol
29	cis-Jasmone
30	Viridiflorol



11/2015
Specifications may change without notice.

Foods, Flavors, & Fragrances

Fatty Acid Methyl Esters - FAME's

DPS Instruments, Inc.

www.dps-instruments.com

Fatty acid methyl esters (FAME) are used extensively as intermediates in the manufacture of detergents, emulsifiers, wetting agents, stabilizers, textile treatments, and waxes. FAME's are also used in a variety of food additive applications, including the dehydration of grapes to produce raisins, as synthetic flavoring agents, and as intermediates in the manufacture of a variety of food ingredients. The quality of your product is dependent on maintaining the concentrations of specific FAME compounds. The DPS FAME's GC Analyzers are specifically designed to separate these compounds. Specially designed columns and the sensitive FID detector do the hard work. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated FAME's GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

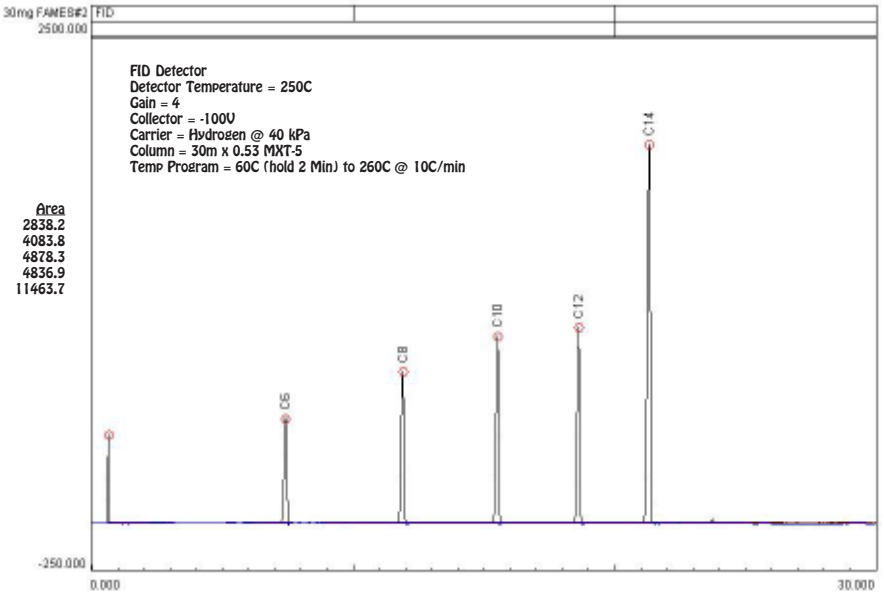
Series 600 GC

Available Configurations Include:

600-C-043 - Series 600 FAME's GC Analyzer (FID, 30m)
500-C-043 - Companion 1 Portable FAME's GC Analyzer (FID, 30m)

Companion 1 Portable GC

Faty Acid Methyl Esters - FAME's - C6 - C14



Peak	Component	Area
1	Methyl Caproate	2838.2
2	Methyl Caprylate	4083.8
3	Methyl Carpate	4878.3
4	Methyl Laurate	4836.9
5	Methyl Myristate	11463.7

11/2015
Specifications may change without notice.

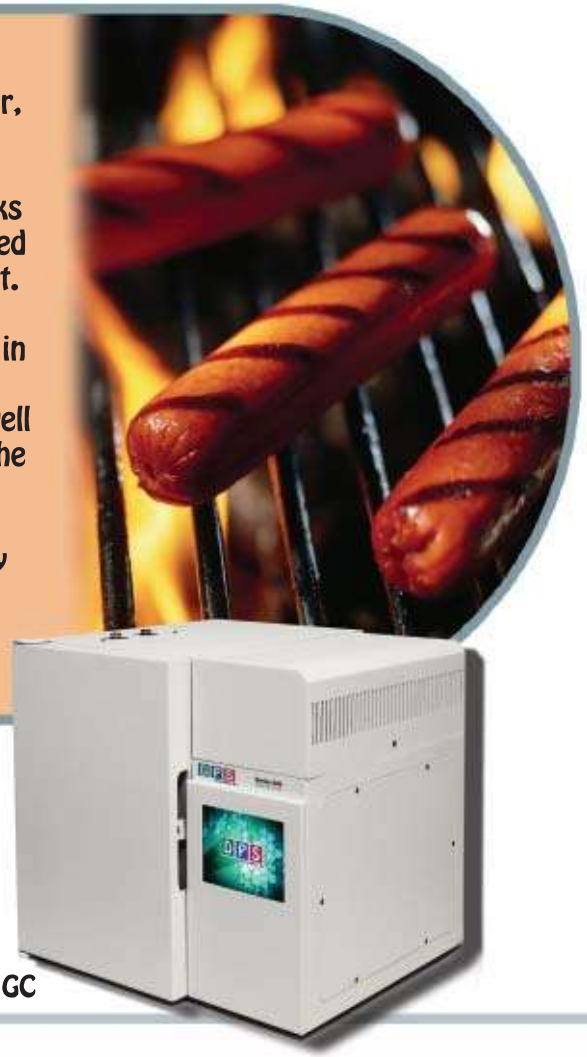
Foods, Flavors, & Fragrances

Fatty Acids

DPS Instruments, Inc.

www.dps-instruments.com

The fact is we all need fats to help nutrient absorption, promote nerve transmission, and to maintain cell membrane integrity. However, when consumed in excess amounts, fats contribute to weight gain, heart disease and certain types of cancer. Fats are not created equal. Some fats promote our health positively, while some increase our risks of heart disease. The key is to replace bad fats (trans fat and saturated fat) with good fats (monosaturated and polysaturated fats) in our diet. As much of the world is finally becoming concerned with diet and health, there is an increase needed in the analysis of the components in fats. The DPS Fatty Acid GC Analyzers measures underivatized free fatty acids in oils, animal products such as meat, fish, and dairy, as well as commercial frying oils, and vegetable oils. Capillary columns and the sensitive FID detector do the hard work. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Fatty Acid GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.



Available Configurations Include:

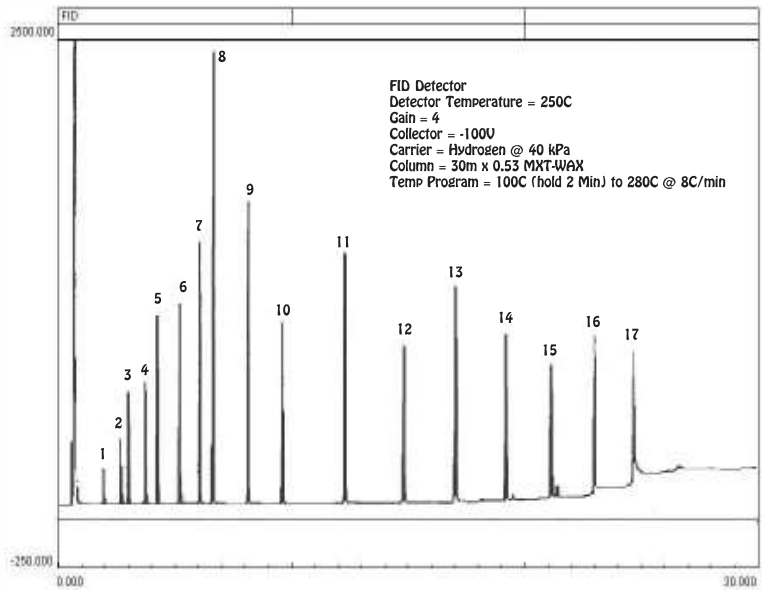
600-C-044 - Series 600 Fatty Acids GC Analyzer (FID, 30m)
500-C-044 - Companion 1 Portable Fatty Acids GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

Fatty Acids - C2 - C22

Peak	Component	Area
1	Acetic Acid	438.2
2	Proprionic Acid	583.4
3	Isobutyric Acid	678.3
4	n-Butyric Acid	736.1
5	Isovaleric Acid	1063.5
6	n-Valeric Acid	1138.7
7	Isocaproic Acid	1263.2
8	Caproic Acid	2478.9
9	Heptanoic Acid	1336.2
10	Caprylic Acid	1163.1
11	Capric Acid	1246.7
12	Lauric Acid	1063.4
13	Mysteric Acid	1218.7
14	Palmitic Acid	1083.0
15	Steric Acid	1078.6
16	Arachidic Acid	1136.5
17	Behenic Acid	963.4



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Specifications may change without notice.

Foods, Flavors, & Fragrances

Flavors & Fragrances

DPS Instruments, Inc.

www.dps-instruments.com

Although the perception of flavor is a complex phenomenon, odor is the most important single factor contributing to the overall characteristics of flavor. A large number of hydrocarbons, alcohols, acids, aldehydes, ketones, sulfides, and heterocyclic compounds have been identified as the volatile components contributing to odor in meats and plant foodstuffs. Since, it is very difficult for people to eat something that does not smell good the analysis of flavor volatiles is critically important to the perceived quality of food. The DPS Flavors & Fragrances GC Analyzers are configured to analyze the broadest range of flavor volatiles. The sensitive FID detector easily detects all of the classes of flavor compounds and the capillary column does a good job of separating the compounds. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Flavors & Fragrances GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

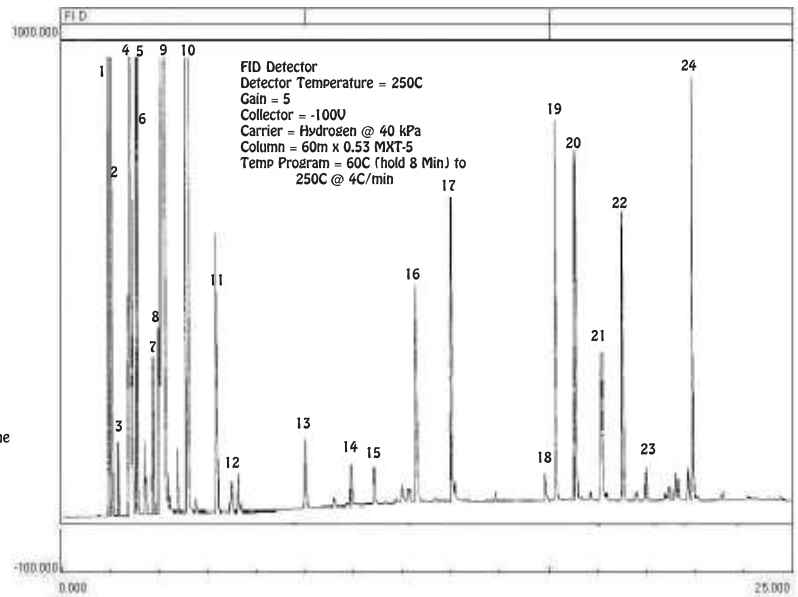
600-C-045 - Series 600 Flavors & Fragrances GC Analyzer (FID, 30m)
600-C-045 - Companion 1 Flavors & Fragrances GC Analyzer (FID, 30m)

Series 600 GC

Lemon Oil - Flavor & Fragrance

Companion 1 Portable GC

Peak	Component
1	α-Thujene
2	α-Pinene
3	Camphene
4	Sabinene
5	β-Pinene
6	Myrcene
7	α-Terpinene
8	p-Cymene
9	Limonene
10	γ-Terpinene
11	Terpinolene
12	Linalool
13	Citronellal
14	Terpinene-4-ol
15	α-Terpineol
16	Neral
17	Geranial
18	Citronellyl Acetate
19	Neryl Acetate
20	Geranyl Acetate
21	β-Caryophyllene
22	trans-α-Bergamotene
23	α-Humulene
24	β-Bisabolene



11/2015
Specifications may change without notice.

Foods, Flavors, & Fragrances

Food Contaminants

DPS Instruments, Inc.

www.dps-instruments.com

Volatile compounds from food packaging, sulfur contaminants in beer, and acrylamide in potato chips are all problems facing the quality of prepared and packaged food. Alcohols, aldehydes, ketones, and hydrocarbons all play a role in the odor of the packaged food. These odors coming from the food itself are highly desirable, whereas odors coming from the materials used to prepare, process, and package the foods are always a problem and should be limited as much as possible. The DPS Food Contaminants GC Analyzers are a great starting place, they use a built-in Purge & Trap Concentrator to fully automate the sampling and analysis of these materials and a sensitive FID detector for parts per billion (ppb) level detection of these contaminants. DPS Food Contaminants GC Analyzers are designed to meet your most demanding analysis requirements. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Food Contaminants GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

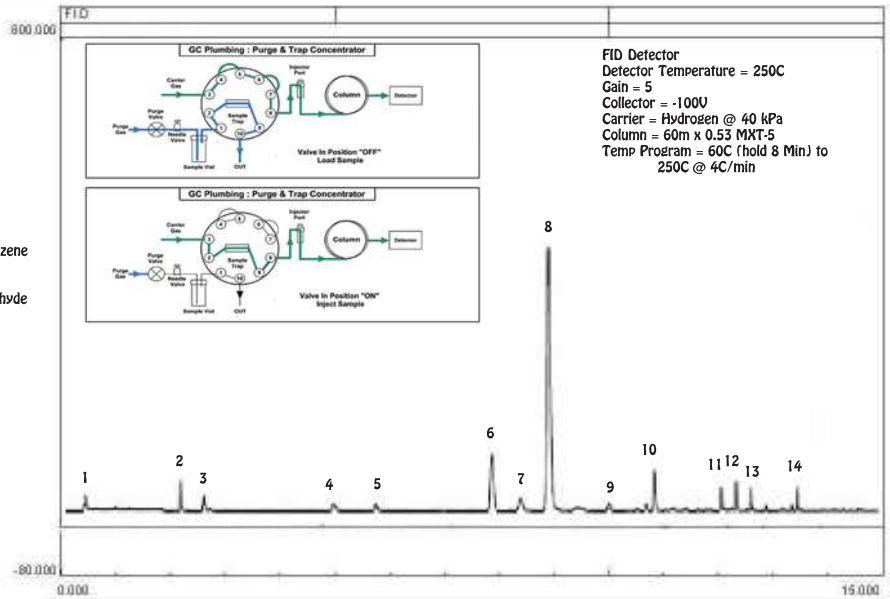
600-C-046 - Series 600 Food Contaminants GC Analyzer (FID, Purge & Trap, 30m)
500-C-046 - Companion 1 Portable Food Contaminants GC Analyzer (FID, Purge & Trap, 30m)

Series 600 GC

Potato Chip Bag - Purge & Trap

Companion 1 Portable GC
(with Purge & Trap Concentrator)

Peak	Component
1	Tetrahydrofuran
2	1-Butanol
3	Toluene
4	Hexanal
5	Ethylbenzene
6	Butyl Ether
7	Styrene
8	1-Methylethylbenzene
9	Propylbenzene
10	Benzaldehyde
11	Benzeneacetaldehyde
12	Acetophenone
13	Benzoic Acid
14	Decanal



11/2015
Specifications may change without notice.

Foods, Flavors, & Fragrances

Fruit Ripening - Ethylene

DPS Instruments, Inc.

www.dps-instruments.com

Ripening agents are used to speed up fruit ripening, allowing many fruits to be picked prior to being fully ripe, since many ripe fruits do not ship well. For example, bananas are picked when green and artificially ripened after shipment, by being gassed with the ripening agent Ethylene. In nature, Ethylene is produced and released by rapidly-growing plant tissues, such as the tips of roots, flowers, and damaged tissue. This hormone promotes the starch in the fleshy part of the fruit to be converted to sugar. DPS has configured the Ethylene GC Analyzer Systems to detect this hormone in the air surrounding the fruit. Our Air Concentrator automatically samples and traps the Ethylene, which is then detected by the sensitive FID detector in the 1-5 parts per billion (ppb) levels. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Ethylene Analyzer GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

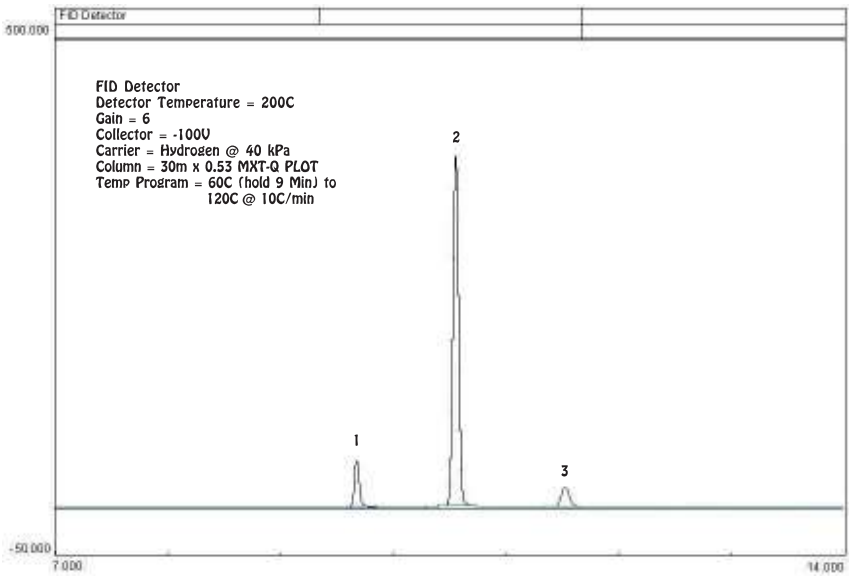
600-C-051 - Series 600 Ethylene GC Analyzer (FID, Air Concentrator, 30m)
500-C-051 - Companion 1 Ethylene GC Analyzer (FID, Air Concentrator, 30m)

Series 600 GC

Ethylene - 5 ppb

Companion 1 Portable GC
(with Air Concentrator)

Peak	Component
1	Methane
2	Ethylene
3	Ethane



5/2019
Specifications may change without notice.

Foods, Flavors, & Fragrances

Packaging Contaminants

DPS Instruments, Inc.

www.dps-instruments.com

Alcohols, aldehydes, ketones, aromatics, and other hydrocarbons all play a role in the odor of packaged food and beverages. These odors coming from the food itself are highly desirable, whereas odors coming from the materials used to package the foods are always a problem. DPS Instruments has designed and developed a convenient way to determine the contribution from the packaging materials. The DPS Packaging Contaminants GC Analyzers use a built-in Dynamic Headspace Concentrator to fully automate the sampling and analysis of these materials, and a sensitive FID detector for low ppb level detection of Benzene, Toluene, Limonene and other hydrocarbons contaminants. The concentration of volatile compounds in everything from potato chip bags to PET pellets can be determined using one of the versatile DPS Packaging Contaminants GC Analyzers. The Series 600 GC is for analyses in the lab, or use the Portable Companion 2 GC Systems for analyses right where the samples are taken. The fully integrated Packaging Contaminants GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Series 600 GC

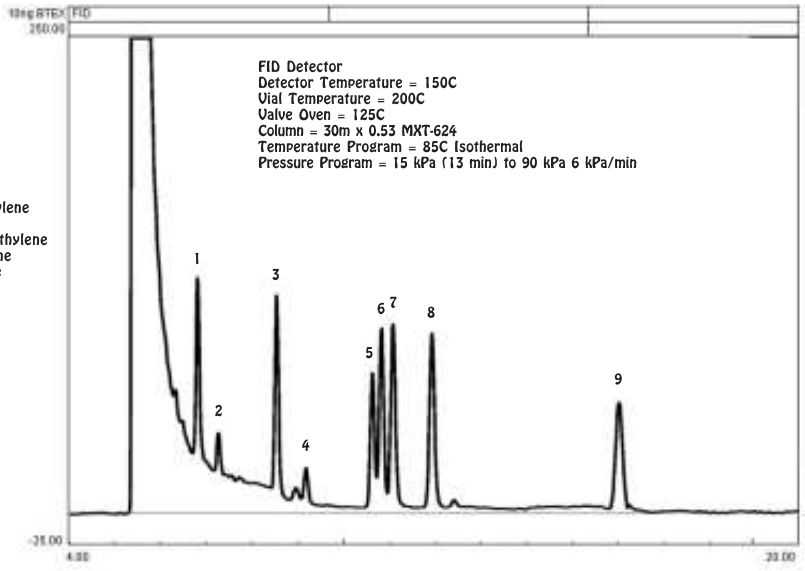
Available Configurations Include:

600-C-056 - Series 600 Packaging Contaminants GC Analyzer (FID, 30m Column, Vial Heater, Dynamic Headspace Concentrator

500-C2-056 - Companion 2 Portable Packaging Contaminants GC Analyzer (FID, 30m Column, Vial Heater, Dynamic Headspace Concentrator

Companion 2 Portable GC
With Dynamic Headspace Concentrator,
(Vial Heater, "Cathedral" Trap, Sample Valve)

10 ppb BTEX & Limonene with Dynamic Headspace Concentrator



Peak	Componenta
1	Benzene
2	Trichloroethylene
3	Toluene
4	Tetrachloroethylene
5	Chlorobenzene
6	Ethylbenzene
7	M-Xylene
8	O-Xylene
9	Limonene

2/2021
(Specifications may change without notice.

DPS Packaging Contaminants GC Layout

Companion 2 GC

Foods, Flavors, & Fragrances

Sugar Alcohols

DPS Instruments, Inc.

www.dps-instruments.com

Sugar alcohols are neither sugars nor alcohols. They are carbohydrates with a chemical structure that partially resembles sugar and partially resembles alcohol, but they don't contain ethanol as alcoholic beverages do. They are incompletely absorbed and metabolized by the body, and consequently contribute fewer calories, which is why they have recently have been used in new products. Technical advances have added to the range of sugar alcohols available for food use and they are found in sugar-free and reduced-sugar products, and in foods intended for individuals with diabetes. Since the general population over the last few decades has developed a sweet tooth, the replacement of sucrose with sugar alcohols has become big business. The DPS Sugar Alcohols GC Analyzers are configured to meet the demand of ever increasing sugar alcohol analysis requirements. The sensitive FID detector and selective capillary column combination easily separate and identify these compounds. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Sugar Alcohols GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

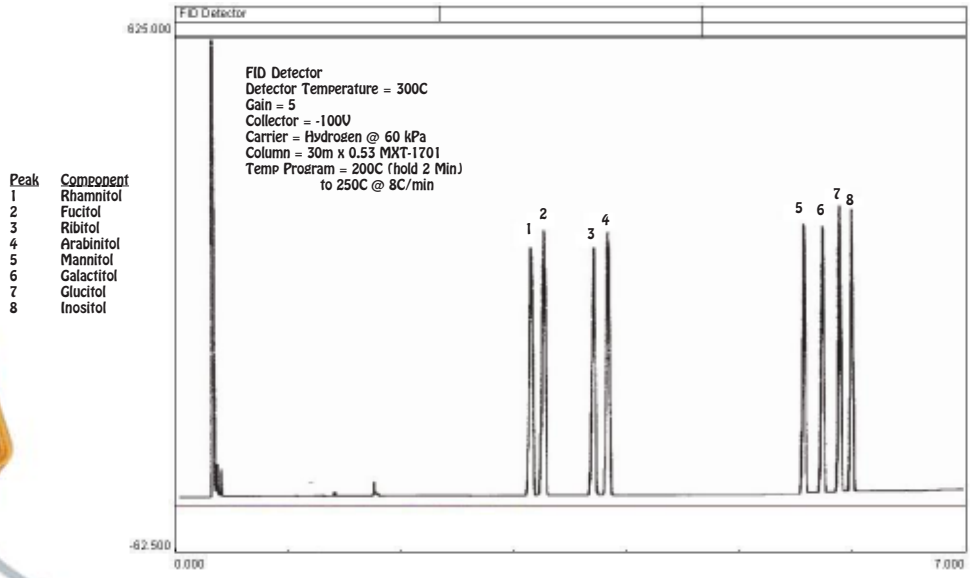
Available Configurations Include:

600-C-048 - Series 600 Sugar Alcohols GC Analyzer (FID, 30m)
500-C-048 - Companion 1 Portable Sugar Alcohols GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

Sugar Alcohols



Peak	Component
1	Rhamnitol
2	Fucitol
3	Ribitol
4	Arabinitol
5	Mannitol
6	Galactitol
7	Glucitol
8	Inositol

11/2015
Specifications may change without notice.

Foods, Flavors, & Fragrances

Triglycerides & Fats

DPS Instruments, Inc.

www.dps-instruments.com

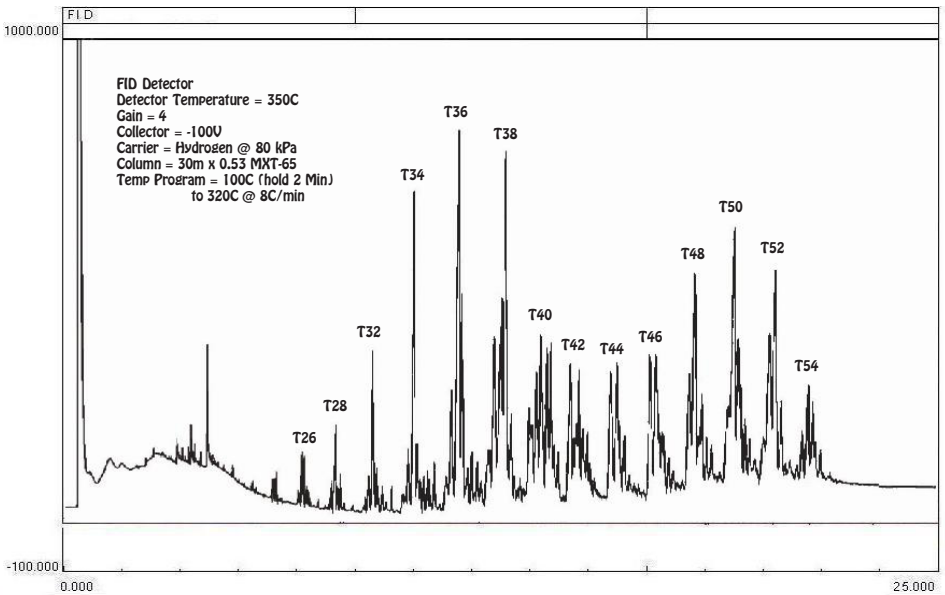
Triglycerides are the chemical form in which most fat exists in food as well as in the body. They're also present in blood plasma and, in association with cholesterol, form the plasma lipids. Triglycerides in plasma are derived from fats eaten in foods or made in the body from other energy sources like carbohydrates. Calories ingested in a meal and not used immediately by tissues are converted to triglycerides and transported to fat cells to be stored. In other words, triglycerides are the energy storehouses of the body. The DPS Triglycerides GC Analyzers are a necessary component of any laboratory monitoring the fat content of foods. The FID detector is sensitive to the hydrocarbon backbone structure of the triglycerides and the analytical column separates the fat matrix. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Triglycerides GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

600-C-049 – Series 600 Triglycerides GC Analyzer (FID, 30m)
500-C-049 – Companion 1 Portable Triglycerides GC Analyzer (FID, 30m)

Series 600 GC

Butter Triglycerides



Companion 1 Portable GC

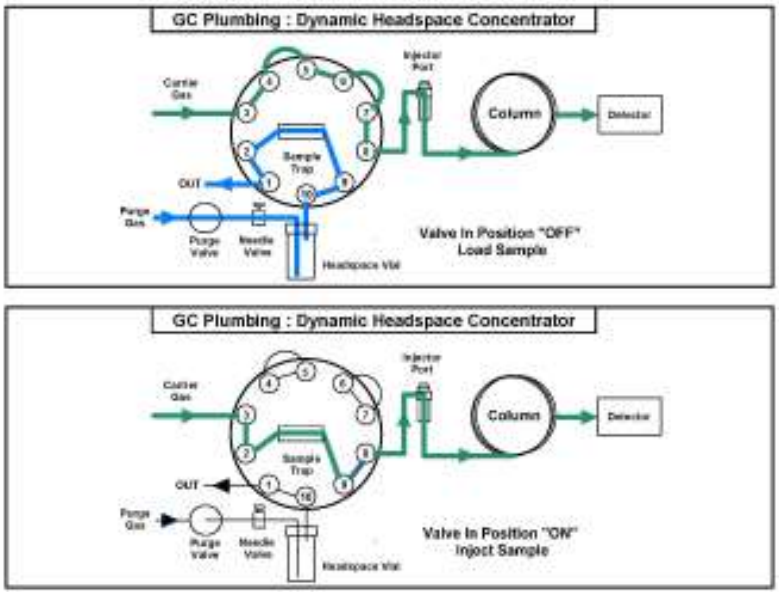
Plumbing Diagram

Dynamic Headspace Concentrator - The Dynamic Headspace Concentrator is built right in with multi-position Vial Heater, "Cathedral" Trap and Heater, 10-port Electronically actuated Valve in a Heated Valve Oven. The Headspace Vial is purged with inert gas to load the sample compounds onto the Trap. The Purge Gas is regulated with a variable flow controller for consistent sample trapping. The Automated Vial Purge, Trap, Pre-heat, Desorb, and Bake sequences of the Dynamic Headspace Concentrator are controlled through the Timeline of the DPS Control Software for the analysis of one sample at a time.

Load - The Purge Valve turns ON to start the stream of gas flowing to the Headspace Vial transfering the sample to the "Cathedral" Trap for concentration.

Inject - The carrier gas sweeps the components from the Trap to the analytical column.

Bake - Using a clean Vial the Purge Valve can be turned ON to Bake out the Trap between analyses.



Built-in Dynamic Headspace Concentrator Plumbing Diagram

Results, Data & Conncetivity

Results: In this unique plumbing configuration the sample is placed inside a heated vial. The sample can be water, pellets, packaging material, or a PET Blank. You get the same peak areas on the chromatogram no matter which source the sample comes from. For example, the results presented on the first page are from a BTEX standard spiked into clean water. The same results would be obtained if BTEX was spiked onto pellets, because in either case 10 nanograms of each component are loaded on the Trap and the detector responds with the same value.

Data and Connectivity: The built-in computer is used to collect and store the data. Data can also be copied to a USB Stick to transfer to another computer. Data can be transferred from the built-in computer to another computer on the LAN through the Ethernet port using standard Windows protocols. Or, we can use a USB cable to connect the GC to the remote computer where the data can be collected and stored on that hard drive.

GC Control Software

Easy to learn and master using a Graphical User Interface (GUI) and Color Touch Screen.

Editors let you customize the files associated with the GC Method.

Oven Temp Program Editor

Timeline Editor

Method Name

File Selection Arrows

Carrier Pressure 1 Editor

Navigation Buttons to Quickly jump from one screen to another. Most pages are one button away!

Keyboard to Enter Filenames

Number Pad for entering Values

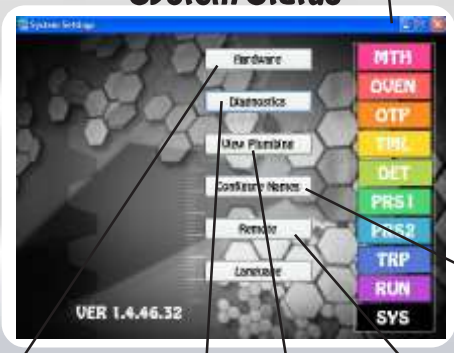
GC Status pages display the parameters in the method, both graphically and as text and values.

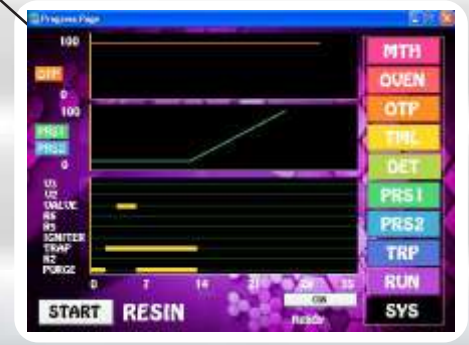
Oven Status

Method Editor

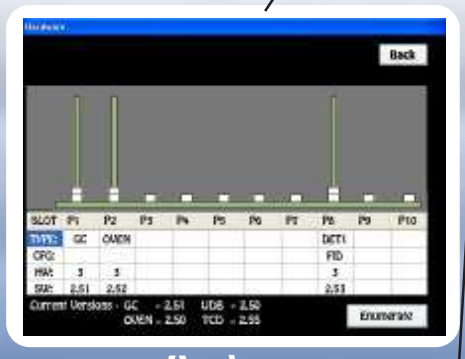
Detector Status

System Status



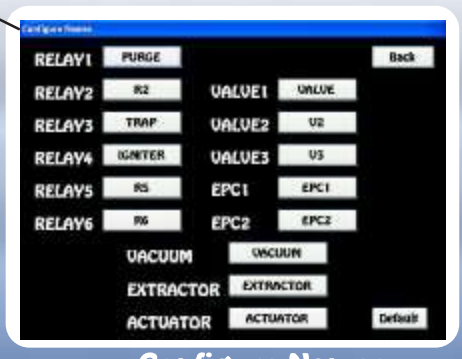


Run Status

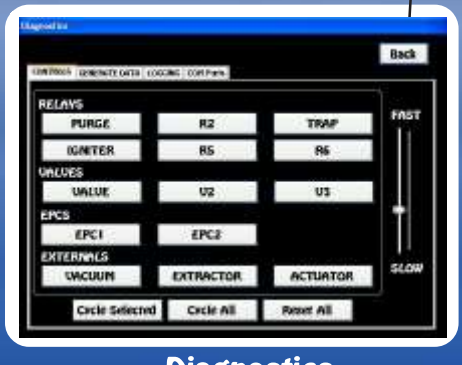


Hardware

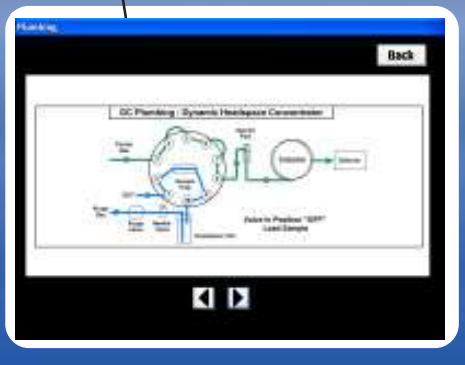
System status pages display the health and viability of the GC instrument.

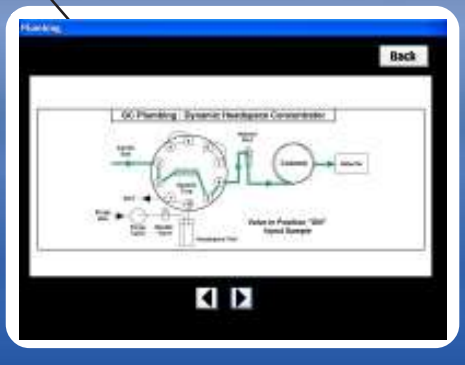


Configure Names



Diagnostics





Plumbing Load and Inject

Packaging Contaminants GC Specifications:

Electronics Module:
- Enter and store GC Methods via Color Touch Screen
- Actual and set-point display of all GC parameters
- Safety Limits on all user entered parameters
- Oven Temperature Programs (OTP) with Multiple Ramps
- Pressure Programs for Carrier Gases with Multiple Ramps
- Timeline for sequencing Relays and Valve
- Detector Control of all Parameters on one page
- Electronic Pressure Controllers (EPC's):
  Atmospheric Pressure & Temperature Compensation
  EPC Pressure Control with 0.1 kPa set-point resolution
- Plug and Play GC Control, Oven, and Detector Board
- Microprocessor Controlled
- Proprietary Digital Signal Processing
- Digital Signal Outputs for each Detector
- Universal voltage input (85 – 240 Vac) with line filter and breaker.

Detectors:
FID – Flame Ionization Detector

- 400 °C Temperature Limit with 0.1 °C set-point resolution
- 24-bit Digital Outputs for the detector via USB
- EPC Pressure Control with 0.1 kPa set-point resolution

Columns:
15m, 30m, or 60m Capillary Columns

Results:
Automatically calibration corrected and reported

Series 600 Oven Module:
- Ambient to 400°C Column Oven
- Up to 100 °C per/min Oven Ramp
- Fast Cooldown 300 °C to 50 °C in 3.5 min
- 1000 watt total Heater Elements
- Temperature Ramps with 0.1 °C set-point resolution
- 23 x 23 x 20 cm area for Glass, SS, or Capillary Columns

Companion 2 Oven Module:
- Ambient to 325 °C Column Oven
- Up to 80 °C per/min Oven Ramp
- Fast Cooldown 300 °C to 50 °C < 4 min
- 200 watt Heater Element
- Temperature Ramps with 0.1 °C set-point resolution
- 12.5 x 10.5 x 12.5 cm area for Packed, or Capillary Columns
- 12 amps at 48 Vdc total power consumption

Built-In Accessories:
- Dynamic Headspace Sample Concentrator
- Vial Heater - 3-Position
- Headspace Vial Cleaner

Injectors:
- Heated On-column Injector
- Split/Splitless Injector
- Multiple Pressure Ramps with 0.1 kPa set-point resolution

Data Communications:
- Bi-directional communication with popular Data System

Network Connectivity:
- Enterprise Compatible Network GC running Windows XPe
- Ethernet Connection using Windows Network Protocol
- On Board ETX Computer for GC Control and Data Acquisition
- Remote Control of GC and Data Acquisition over LAN

Lab Quality Analyses in the Field,
"It Goes with you Anywhere!"

DPS Instruments, Inc.

DPS Ethylene GC Layouts

Companion 1 GC

Small High Pressure Gas Cylinder

Trap & Cooling Fan

Power connection with breaker and line filter

FID Detector

Color Touchscreen

USB & Ethernet Connections

On-Column Injector

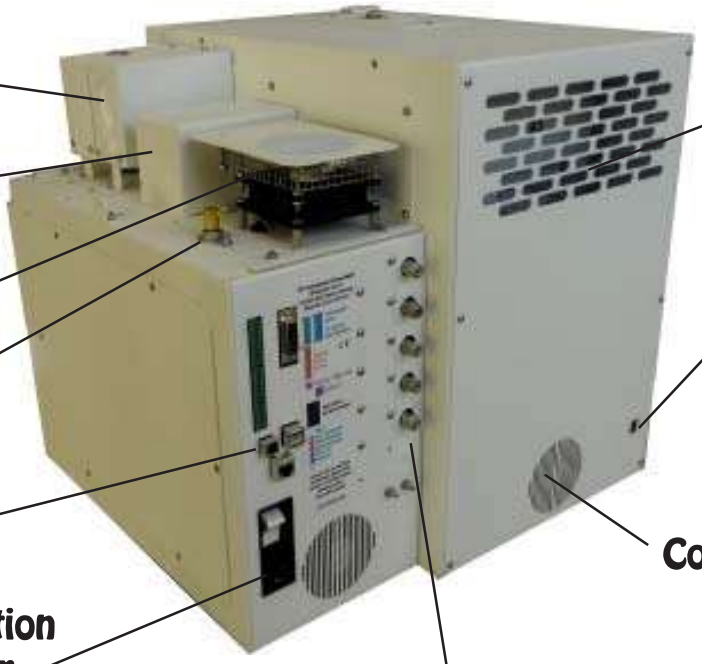
GC Oven

Rugged watertight case

Valve Oven

Gas Connections

Series 600 GC



Detector

Sample Valve and Valve Oven

Trap & Cooling Fan

Flow Controller

USB & Ethernet Connections

Power connection with breaker and line filter

Flow Through Oven Cooling

Voltage Selection (120 or 240Vac)

Cooling Fan

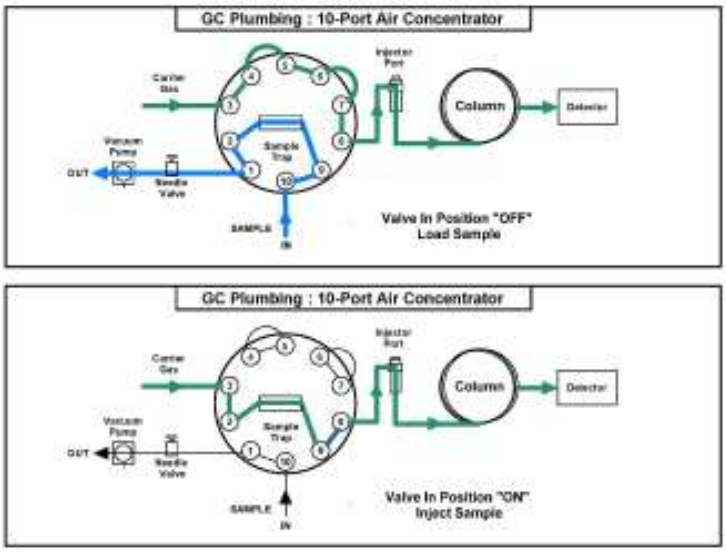
EPC Inlets

Plumbing Diagram

Air Concentrator: The Air Sample Concentrator is built right into the GC Chassis to provide both a compact portable sample concentrator and the shortest possible sample path. The valve and sample lines are heated creating a inert sample path. The Sample Flow Controller precisely meters the amount of sample loading on the Trap.

Load Air Sample: The vacuum pump draws the sample from the inlet through the Trap and then to the flow controller and pump to limit any possible cross contamination between samples. The entire sequence of the Air Sample Concentrator is automated through the Timeline of the DPS Control Software for the analysis of one sample, or the system can be set up to run unattended 24/7, collecting and analyzing samples every hour, or so.

Inject Sample: The carrier gas sweeps the components from the trap to the analytical column.



Air Concentrator
Plumbing Diagram

Results, Data & Conncetivity

Results: The Results can be saved for each sample, or they can be printed, or they can be tabulated into a .LOG file, when you are collecting a vast amount of data over a long time period. The format of the. LOG file is text, so it can be opened by any word processing program.

Data and Connectivity: The built-in computer is used to collect and store the data. Data can also be copied to a USB Stick to transfer to another computer. Data can be transferred from the built-in computer to another computer on the LAN through the Ethernet port using standard Windows protocols. Or, we can use a USB cable to connect the GC to the remote computer where the data can be collected and stored on that hard drive.

GC Control Software

Easy to learn and master using a Graphical User Interface (GUI) and Color Touch Screen.

Editors let you customize the files associated with the GC Method.

Oven Temp Program Editor

Timeline Editor

Method Name

File Selection Arrows

Carrier Pressure 1 Editor

Navigation Buttons to Quickly jump from one screen to another. Most pages are one button away!

Keyboard to Enter Filenames

Number Pad for entering Values

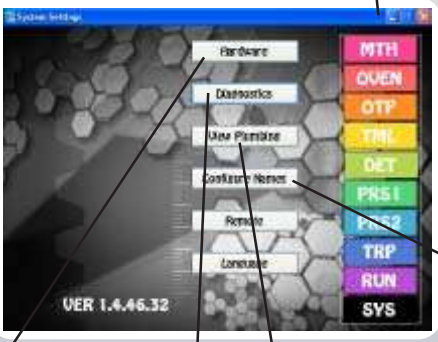
GC Status pages display the parameters in the method, both graphically and as text and values.

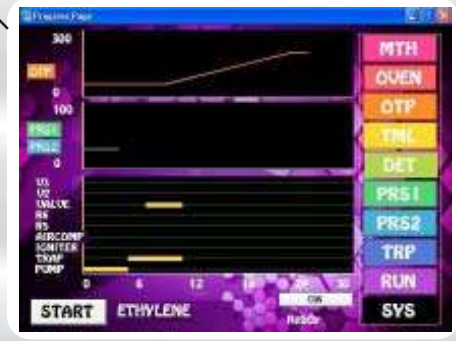
Oven Status

Method Editor

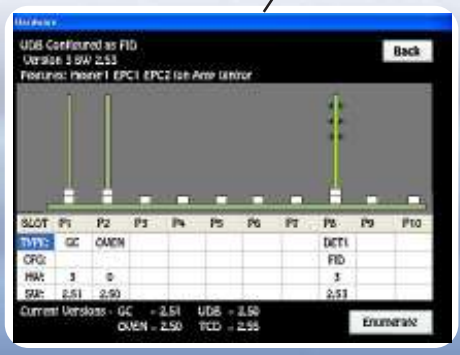
Detector Status

System Status



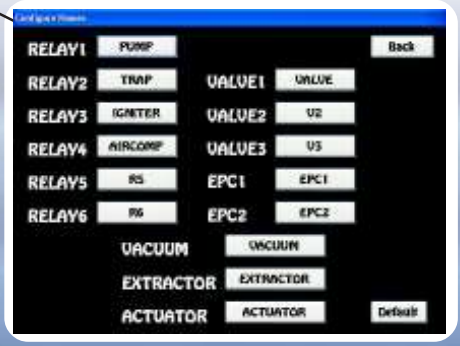


Run Status

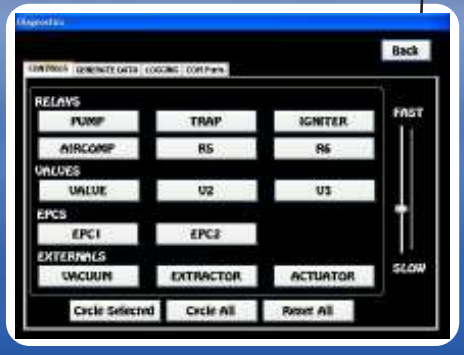


Hardware

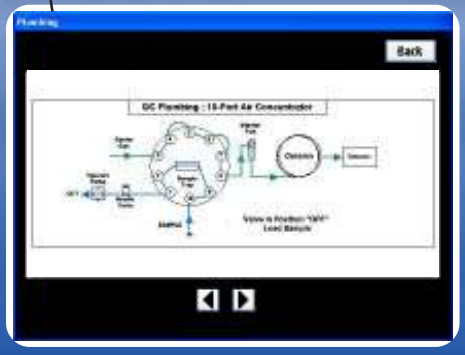
System status pages display the health and viability of the GC instrument.



Configure Names



Diagnostics



Plumbing

Ethylene GC Specifications:

Electronics Module:
- Enter and store GC Methods via Color Touch Screen
- Actual and set-point display of all GC parameters
- Safety Limits on all user entered parameters
- Oven Temperature Programs (OTP) with Multiple Ramps
- Pressure Programs for Carrier Gases with Multiple Ramps
- Timeline for sequencing Relays and Valve
- Detector Control of all Parameters on one page
- Electronic Pressure Controllers (EPC's):
  Atmospheric Pressure & Temperature Compensation
  EPC Pressure Control with 0.1 kPa set-point resolution
- Plug and Play GC Control, Oven, and Detector Board
- Microprocessor Controlled
- Proprietary Digital Signal Processing
- Digital Signal Outputs for each Detector
- Universal voltage input (85 – 240 Vac) with line filter and breaker.

Detectors:
FID – Flame Ionization Detector (1ppb Detection Limit)
- 400 °C Temperature Limit with 0.1 °C set-point resolution
- 24-bit Digital Outputs for the detector via USB
- EPC Pressure Control with 0.1 kPa set-point resolution

Columns:
Packed, or Capillary Column

Results:
Automatically calibration corrected and reported

Series 600 Oven Module:
- Ambient to 400°C Column Oven
- Up to 100 °C per/min Oven Ramp
- Fast Cooldown 300 °C to 50 °C in 3.5 min
- 1000 watt total Heater Elements
- Temperature Ramps with 0.1 °C set-point resolution
- 23 x 23 x 20 cm area for Glass, SS, or Capillary Columns

Companion Oven Module:
- Ambient to 325 °C Column Oven
- Up to 80 °C per/min Oven Ramp
- Fast Cooldown 300 °C to 50 °C < 4 min
- 200 watt Heater Element
- Temperature Ramps with 0.1 °C set-point resolution
- 12.5 x 10.5 x 12.5 cm area for Packed, or Capillary Columns
- 7 amps at 48 Vdc total power consumption

Built-In Accessories:
- Air Sample Concentrator (Vacuum Pump, Flow Controller & Trap)
- Air Compressor for FID

Injectors:
- Heated On-column Injector
- Multiple Pressure Ramps with 0.1 kPa set-point resolution

Data Communications:
- Bi-directional communication with popular Data System

Network Connectivity:
- Enterprise Compatible Network GC running Windows XPe
- Ethernet Connection using Windows Network Protocol
- On Board ETX Computer for GC Control and Data Acquisition
- Remote Control of GC and Data Acquisition over LAN

Lab Quality Analyses in the Field,

"It Goes with you Anywhere!"

DPS Instruments, Inc.

Foods, Flavors, & Fragrances

Sterols

DPS Instruments, Inc.

www.dps-instruments.com

Cholesterol and other sterols are naturally occurring compounds from fats in many plant and animal extracts. With the global rise in heart and other diseases, primarily due to the increased consumption of dietary fats, the concentrations of cholesterol and other sterols in food products are monitored by many government agencies. The increase in awareness from consumers has also fueled the food industry to respond by reducing health related compounds, such as cholesterol and trans fats in processed foods. The DPS Sterols GC Analyzers are configured with the sensitive FID detector to meet the ever increasing need for cholesterol analysis. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Sterols GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

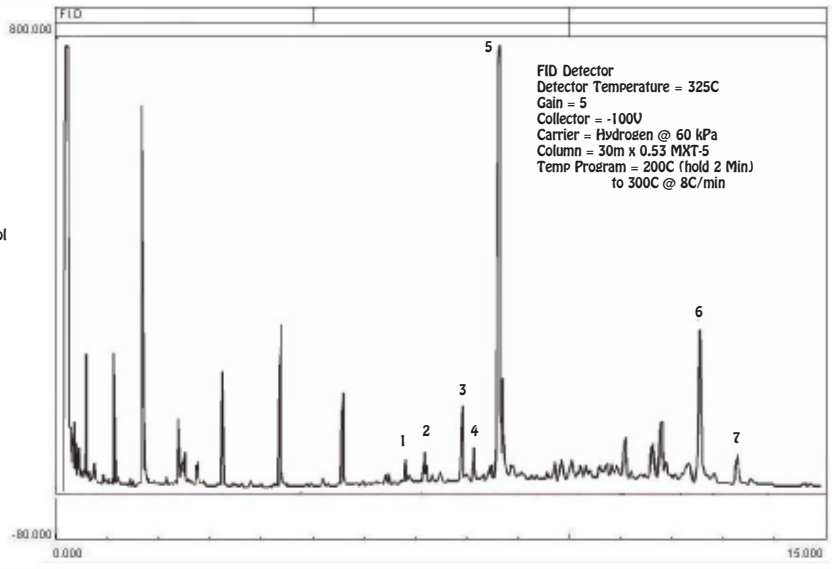
600-C-047 - Series 600 Sterols GC Analyzer (FID, 30m)
500-C-047 - Companion 1 Portable Sterols GC Analyzer (FID, 30m)

Series 600 GC

Olive Oil - Sterols

Companion 1 Portable GC

Peak	Component
1	Cholesterol
2	Brassicasterol
3	Campesterol
4	Stigmasterol
5	β-Sitosterol
6	Erythrodiol
7	Uvacol



Foods, Flavors, & Fragrances

Preservatives

DPS Instruments, Inc.

www.dps-instruments.com

Fats play an important role in nutrient absorption, nerve transmission, and to maintain cell membrane integrity. However, fats in foods are subject to oxidation and can turn rancid. Oxidation reactions still occur relative rapidly even in frozen or refrigerated foods. Antioxidants, such as tocopherols and other active Vitamin E compounds, are used as food additives and as food preservatives to prevent oils from going rancid. Vitamin E is also widely used as an inexpensive antioxidant in cosmetics. The DPS Preservatives GC Analyzer measures antioxidant compounds in oils, animal products such as meat, fish, and dairy, as well as commercial frying oils, and vegetable oils. The sensitive FID detector and analytical column combination separate and detect these preservatives. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Preservatives GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

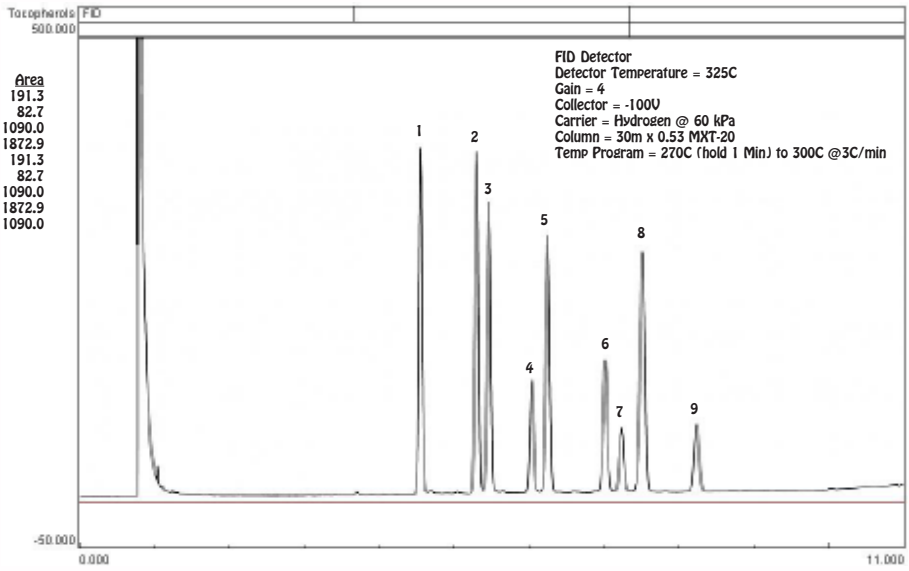
600-C-055 - Series 600 Preservatives GC Analyzer (FID, 30m)
500-C-055 - Companion 1 Portable Preservatives GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

Antioxidant Preservatives - Tocopherals

Peak	Component	Area
1	δ-Tocopherol	191.3
2	β-Tocopherol	82.7
3	γ-Tocopherol	1090.0
4	dl-δ-Tocopherol	1872.9
5	α-Tocopherol	191.3
6	dl-δ-Tocotrienol	82.7
7	dl-γ-Tocotrienol	1090.0
8	Int. Standard	1872.9
9	dl-α-Tocotrienol	1090.0



11/2015
Specifications may change without notice.

Foods, Flavors, & Fragrances

e-Cigarette

DPS Instruments, Inc.

www.dps-instruments.com

Electronic cigarettes do not burn tobacco, instead they produce an aerosol from a battery powered heating element and liquid-containing cartridge. The liquid typically consists of propylene glycol, glycerin, flavorants, and nicotine. The heating element vaporizes the liquid to form a mist, which the end user inhales, imitating tobacco smoke visually and replicating the burning sensation in the throat and lungs. These similarities to tobacco smoke, combined with the same hand-to-mouth behaviors, have contributed to it's rapid acceptance. The DPS e-Cigarette GC Analyzers are configured to meet the ever increasing demand for these analysis requirements. The sensitive FID detector and selective capillary column combination easily separate and identify these compounds. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated e-Cigarette GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

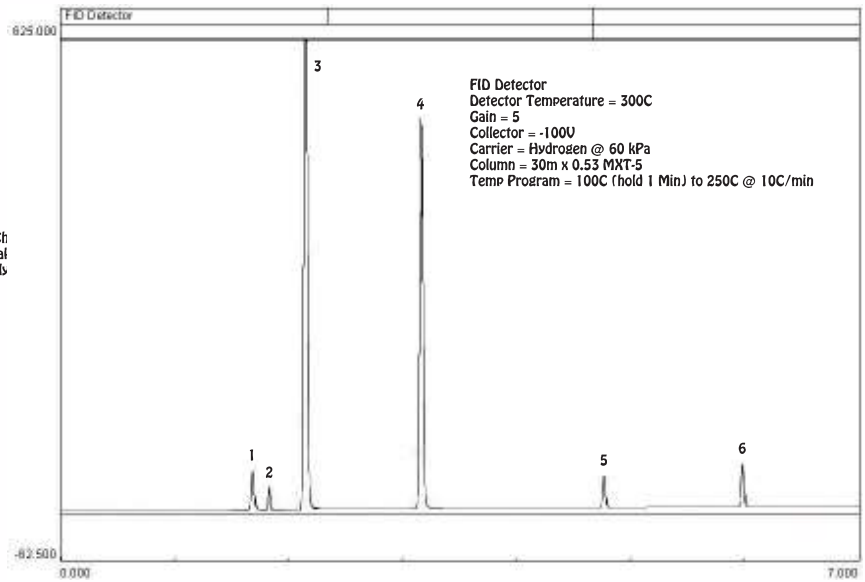
Available Configurations Include:

600-C-039 - Series 600 e-Cigarette GC Analyzer (FID, 30m)
500-C-039 - Companion 1 Portable e-Cigarette GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

e-Cigarette Liquid



Peak	Component
1	Methanol
2	Ethanol
3	Methylene Ch (Solvent Peal
4	Propylene Gly
5	Glycerin
6	Nicotine

Foods, Flavors, & Fragrances

Cork Taint

DPS Instruments, Inc.

www.dps-instruments.com

You've opened a bottle of wine that should be outstanding, but when you put your nose to the glass, it smells like something rotting in a damp basement. The problem is most likely TCA, which is 2,4,6-Trichloroanisole, a chemical so powerful that even at parts per billion (ppb), it can cause musty aromas and flavors in wines. The compound forms through the interaction of plant phenols, chlorine, and mold and most frequently occurs in natural corks. DPS has configured the Cork Taint GC System to detect this nasty smell in wine. Our sensitive PID detector and ultra-sensitive BCD detector are ideal for identifying TCA and other Chlorinated Phenols in the low (ppb) to high parts per trillion (ppt) levels. We offer Cork Taint GC Systems with both PID and BCD detectors, or just the BCD alone, which is blind to the non-chlorinated compounds in wine. The fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Cork Taint GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

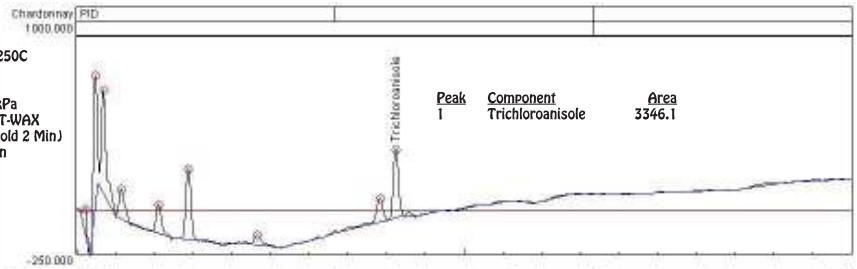
600-C-052 - Series 600 Cork Taint GC Analyzer (PID, BCD, 30m)
500-C2-052 - Companion 2 Portable Cork Taint GC Analyzer (PID, BCD, 30m)
500-C2-053 - Companion 2 Portable Cork Taint GC Analyzer (BCD, 30m)

Series 600 GC

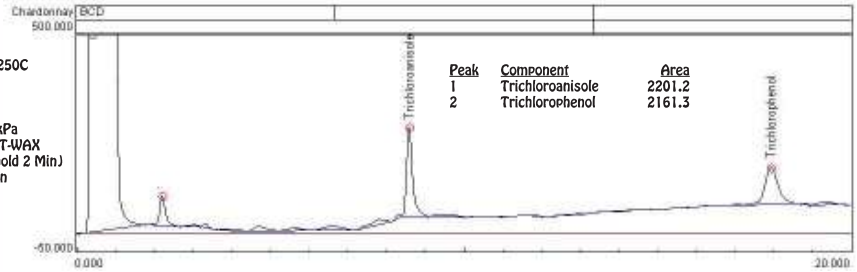
Trichloroanisole (TCA) in Chardonnay - 1 ppb

Companion 2 Portable GC

PID Detector
Detector Temperature = 250C
Gain = 6
Collector = -100V
Carrier = Helium @ 160 kPa
Column = 30m x 0.53 MXT-WAX
Temp Program = 100C (hold 2 Min) to 240C @ 10C/min



BCD Detector
Detector Temperature = 250C
Cell Temperature = 825C
Gain = 2
Collector = -100V
Carrier = Helium @ 160 kPa
Column = 30m x 0.53 MXT-WAX
Temp Program = 100C (hold 2 Min) to 240C @ 10C/min



11/2015
Specifications may change without notice.

Personal Care

Personal Care Fragrances

DPS Instruments, Inc.

www.dps-instruments.com

Eucalyptol, menthol, and camphor can be used in a surprising variety of ways. These aromatic and medicinal plants extracts enhance the flavor of many dishes, but their therapeutic virtues have been known for years. Among the best-known uses are rubbing these compounds on to soothe aching muscles, inhaling them to free up the sinuses, and also as an antiseptics. Consequently, they are found in a variety of creams, ointments, and other personal care products. The DPS Personal Care Fragrances GC Systems are designed to check the purity of the plant extract and verify the concentration of these compounds in the final product. The latest designed high resolution column and the sensitive FID detector does the hard work for you. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Personal Care Fragrances GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

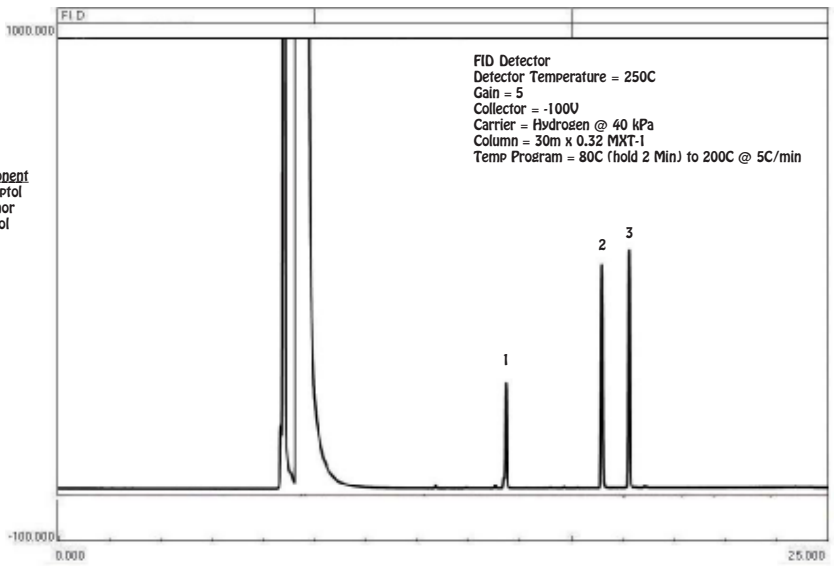
Available Configurations Include:

600-C-080 - Series 600 Personal Care Fragrances GC Analyzer (FID, 30m)
500-C-080 - Companion 1 Portable Personal Care Fragrances GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

Personal Care Product Fragrances



Peak	Component
1	Eucalyptol
2	Camphor
3	Menthol

Personal Care

Cleaning Solvents

DPS Instruments, Inc.

www.dps-instruments.com

The average cleaning products industry consumer uses a wide range of products to promote both personal and public heath. Soaps, detergents, deodorants, mouthwashes, rug cleaners, drain openers, and a host of other products make up this multi-billion dollar worldwide industry. These products are designed to improve personal hygiene, reduce levels of bacteria, improve personal appearance, and offer cleaning convenience for the consumer. To help ensure consistent product performance and environmental safety there is an ongoing need to test the solvents contained on both the raw and final products. The DPS Cleaning Solvents GC Systems, equipped with a high resolution column and the sensitive FID detector is a great place to start. The extract or a liquid sample can be directly injected by hand, or a flake, solid, or cream sample can be placed in a headspace vial and automatically heated and injected using our built-in Headspace Concentrator. The Series 600 GC is for analyses in the lab, or use the Portable Companion 1 GC Systems for analyses right where the samples are taken. The fully integrated Cleaning Solvents GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

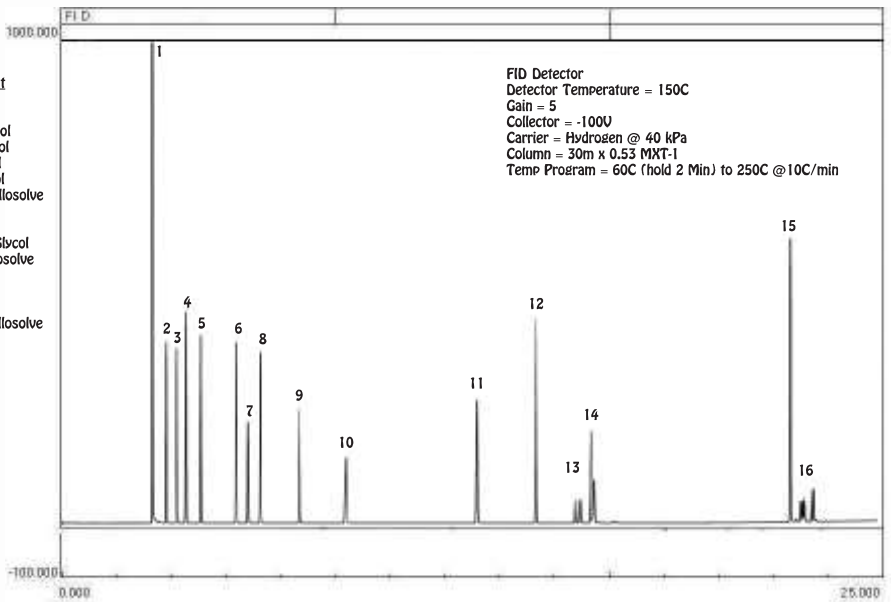
Series 600 GC

Available Configurations Include:

600-C-081 - Series 600 Cleaning Solvents (FID, Headspace, 30m)
500-C-081 - Companion 1 Portable Cleaning Solvents (FID, Headspace, 30m)

Companion 1 Portable GC
(with Headspace Concentrator)

Cleaning Solvents



Peak	Component
1	Methanol
2	Ethanol
3	iso-propanol
4	tert-Butanol
5	n-Propanol
6	iso-Butanol
7	Methyl Cellosolve
8	n-Butanol
9	Cellosolve
10	Ethylene Glycol
11	Butyl Cellosolve
12	Limonene
13	DPGMME
14	DEGEE
15	Phenyl Cellosolve
16	TPGMME