Pharmaceuticals

Antihistamines

DPS Instruments, Inc.

www.dps-instruments.com

Antihistamines are medicines that help stop allergy symptoms such as itchy eyes, sneezing and a runny nose. They work by preventing the effects of a substance called histamine, which is produced by the body in response to an allergic reaction. In some people histamine can also close up air passages of the lungs making breathing difficult. The DPS Antihistamines GC Systems are configured with the latest designed high resolution capillary columns and the sensitive FID detector to quickly detect 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 fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Antihistamines GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

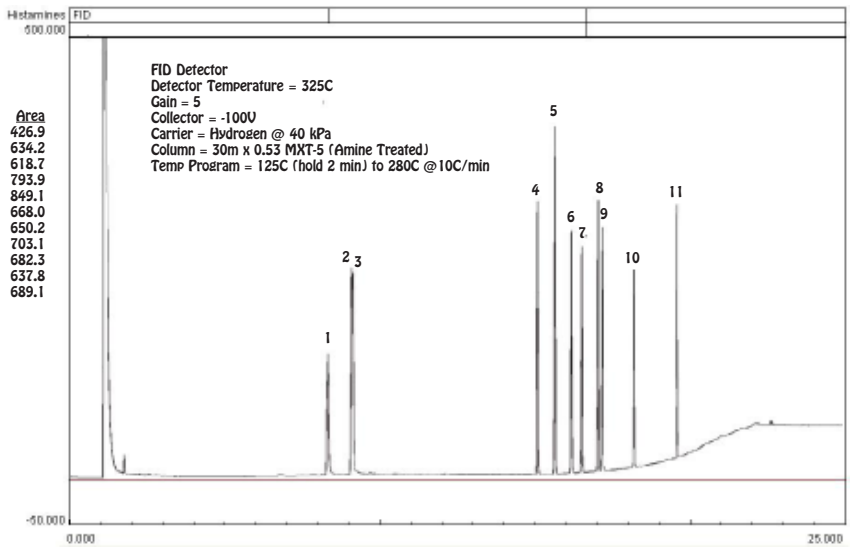
600-C-102 - Series 600 Antihistamines GC Analyzer (FID, 30m)
500-C-102 - Companion 1 Portable Antihistamines GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

Antihistime Drugs

Peak	Component	Area
1	Phenylpropanolamine	426.9
2	Ephidrine	634.2
3	Pseudoephidrine	618.7
4	Pheniramine	793.9
5	Diphenhydramine	849.1
6	Doxylamine	668.0
7	Phenyltoloxamine	650.2
8	Methapyrilene	703.1
9	Chlorpheniramine	682.3
10	Brompheniramine	637.8
11	Triprolidine	689.1



Pharmaceuticals

Cold Medicines

DPS Instruments, Inc.

www.dps-instruments.com

One of the most important pharmaceutical applications is the GC analysis of basic drugs. This broad category encompasses a variety of stimulants, and sedatives, which includes cold medicines. Each of these drugs has rigid specifications placed on the purity of the products formulation, which we as consumers appreciate most when we feel the onset of the common cold. The DPS Cold Medicines GC Systems are designed with safety in mind to check the drug purity throughout the manufacturing process. Each GC System is configured with the latest high resolution capillary column and the sensitive FID detector to quickly detect 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 fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Cold Medicines GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

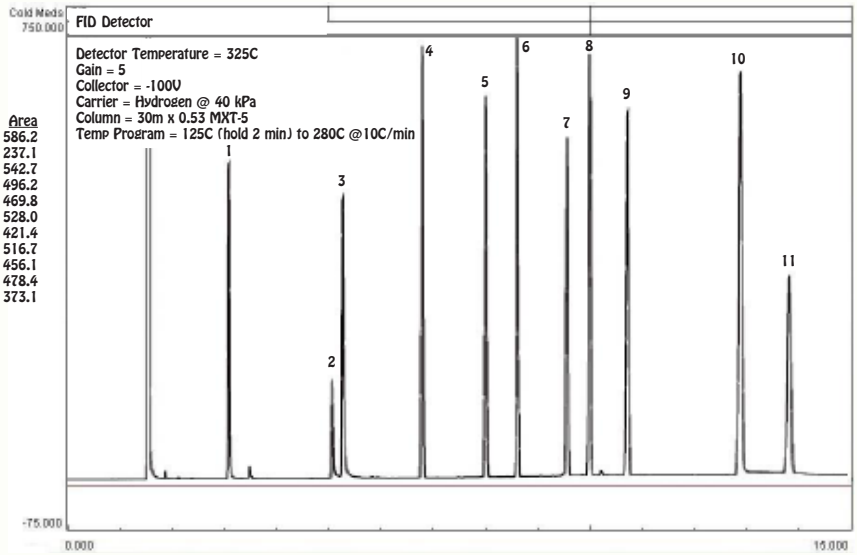
600-C-124 - Series 600 Cold Medicines GC Analyzer (FID, 30m)
500-C-124 - Companion 1 Portable Cold Medicines GC Analyzer (FID, 30m)

Series 600 GC

Cold Medicines

Companion 1 Portable GC

Peak	Component	Area
1	Phenylpropanolamine	586.2
2	Phenylephrine	237.1
3	Guaifensin	542.7
4	Pheniramine	496.2
5	Phenyltoloxamine	469.8
6	Chlorpheniramine	528.0
7	Brompheniramine	421.4
8	Dextromethorphan	516.7
9	Pyrilamine	456.1
10	Codeine	478.4
11	Hydrocodone	373.1



Pharmaceuticals

Antidepressants

Instruments, Inc.

www.dps-instruments.com

Antidepressants drugs help reduce the extreme sadness, hopelessness, and lack of interest in life that are typical in people with depression. Most antidepressants are believed to work by slowing the removal of certain neurotransmitters, such as serotonin and norepinephrine, from the brain. Neurotransmitters are needed for normal brain function and are involved in the control of mood and in other responses and functions, such as eating, sleep, pain, and thinking. The DPS Antidepressants GC Systems are configured with the latest designed high resolution capillary columns and the sensitive FID detector to quickly detect 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 fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Antidepressants GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

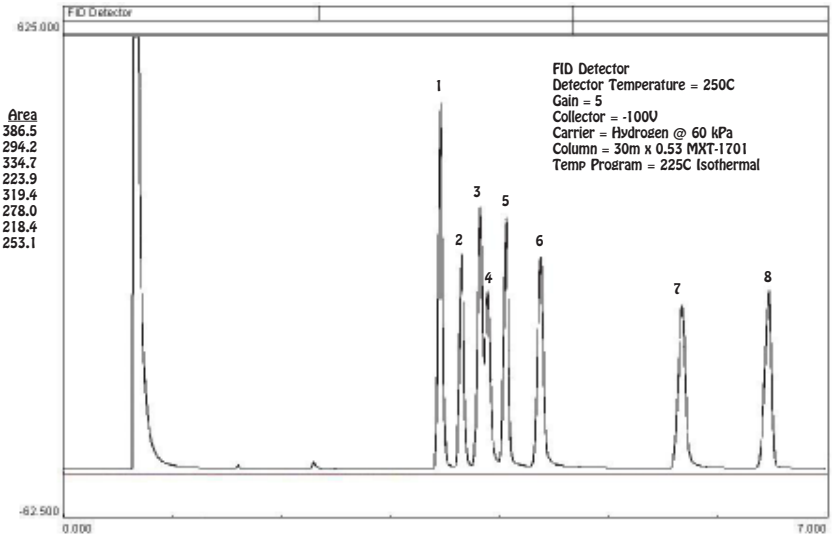
600-C-100 - Series 600 Antidepressants GC Analyzer (FID, 30m)
500-C-100 - Companion 1 Portable Antidepressants GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

Antidepressant Drugs

Peak	Component	Area
1	Amitriptyline	386.5
2	Trimipramide	294.2
3	Imipramine	334.7
4	Nortriptyline	223.9
5	Doxepin	319.4
6	Desipramine	278.0
7	Maprotyline	218.4
8	Clomipramine	253.1



Pharmaceuticals

Antihistamines

DPS Instruments, Inc.

www.dps-instruments.com

Antihistamines are medicines that help stop allergy symptoms such as itchy eyes, sneezing and a runny nose. They work by preventing the effects of a substance called histamine, which is produced by the body in response to an allergic reaction. In some people histamine can also close up air passages of the lungs making breathing difficult. The DPS Antihistamines GC Systems are configured with the latest designed high resolution capillary columns and the sensitive FID detector to quickly detect 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 fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Antihistamines GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

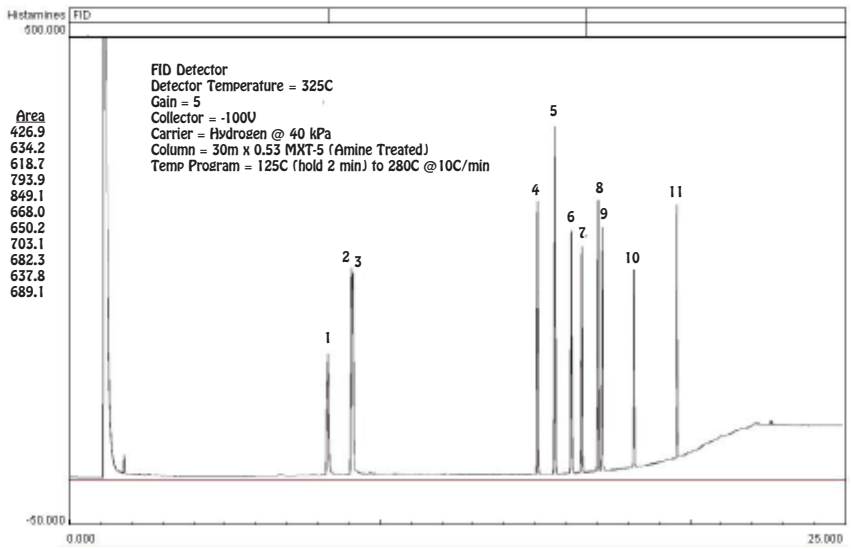
600-C-102 - Series 600 Antihistamines GC Analyzer (FID, 30m)
500-C-102 - Companion 1 Portable Antihistamines GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

Antihistime Drugs

Peak	Component	Area
1	Phenylpropanolamine	426.9
2	Ephidrine	634.2
3	Pseudoephidrine	618.7
4	Pheniramine	793.9
5	Diphenhydramine	849.1
6	Doxylamine	668.0
7	Phenyltoloxamine	650.2
8	Methapyrilene	703.1
9	Chlorpheniramine	682.3
10	Brompheniramine	637.8
11	Triprolidine	689.1

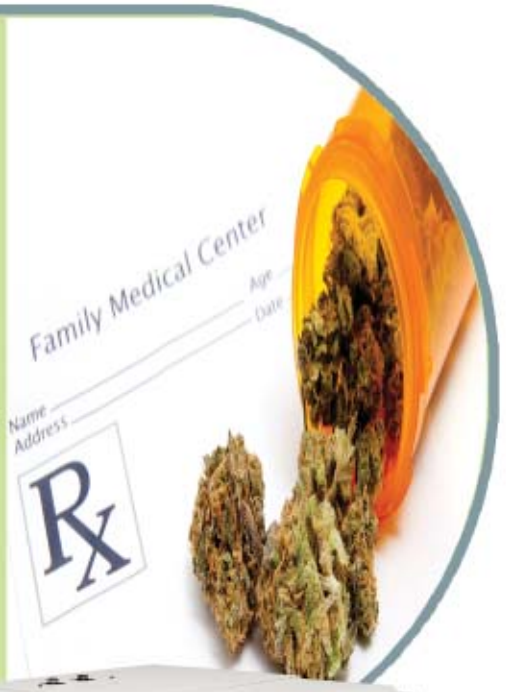


Pharmaceuticals

DPS Instruments, Inc.

www.dps-instruments.com

Medical cannabis, also referred to as medical marijuana, refers to the use of constituents of cannabis, THC and other cannabinoids, as a physician-recommended form of medicine therapy. The medicinal value of cannabis has several well-documented beneficial effects, such as the amelioration of nausea and vomiting, stimulation of hunger in chemotherapy and AIDS patients, lowered intraocular eye pressure for treating glaucoma, as well as general analgesic pain relieving effects. DPS has configured the Cannabis GC Systems with the sensitive FID detector to identify the major cannabinoids THC, CBD, and CBN as well as identifying and determining Terpene concentrations. For extra product safety we can add our ultra-sensitive BCD Detector to analyze for Pesticide contamination at the same time. The Series 600 GC is for analyses in the lab, or use the Portable Companion 2 GC System for analyses in the growing fields, or at the dispensary. The fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Cannabis GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

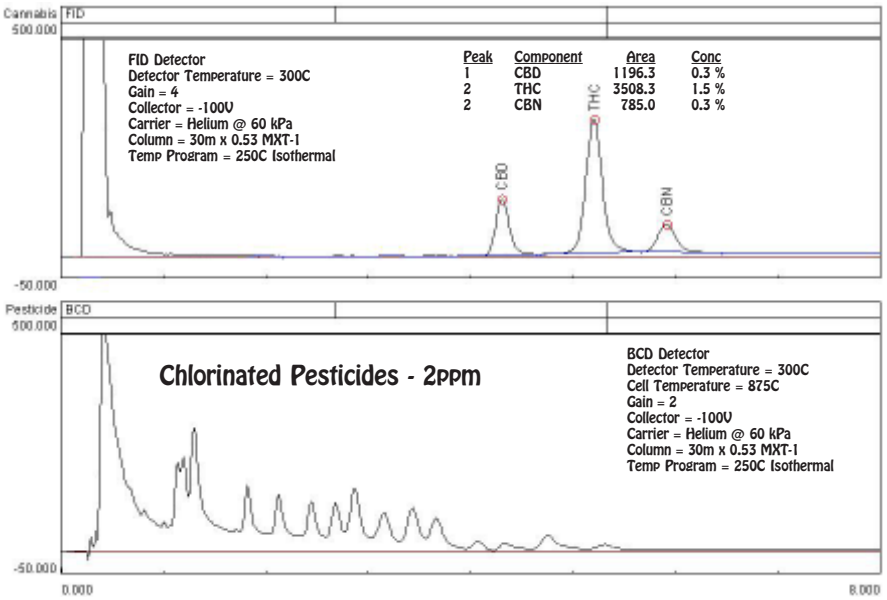


Series 600 GC

Available Configurations Include:

600-C-107 - Series 600 Cannabis GC Analyzer (FID, BCD, 2 x 30m)
500-C2-107 - Companion 2 Portable Cannabis GC Analyzer
(FID, BCD, 2 x 30m)

Cannabinoids & Pesticides



Companion 2 Portable GC

Pharmaceutical

DPS Instruments, Inc.

www.dps-instruments.com

There is no way around it, residual process solvents are commonly detected in pharmaceutical products. Consequently, many government agencies have made it mandatory to measure the residual solvents for the release testing of all active pharmaceutical ingredients. Analyses are also routinely performed on process intermediates used during the drug synthesis. The help with these regulations the DPS Residual Solvents GC Analyzers use a built-in Headspace Concentrator to fully automate the sampling and analysis and a sensitive FID detector for low level detection of these residual solvents. Liquid samples can also be analyzed in these GC Analyzers by direct injection. 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 Residual 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:

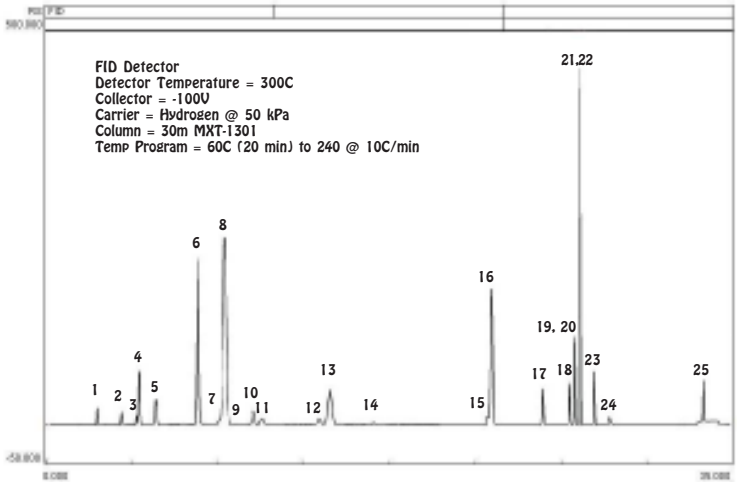
600-C-145 - Series 600 Residual Solvents GC Analyzer (FID, Headspace Concentrator, 30m Column)

500-C2-145 - Companion 2 Portable Residual Solvents GC Analyzer (FID, Headspace Concentrator, 30m Column)

Companion 2 Portable GC
(with Headspace Concentrator)

Residual Solvents Analysis

Peak	Component
1	Methanol
2	1,1-Dichloroethane
3	Acetonitrile
4	Methylene Chloride
5	Hexane
6	cis-1,2,-Dichloroethane
7	Chloroform
8	1,1,1-Trichloroethane
9	Carbon Tetrachloride
10	Benzene
11	1,1-Dichloroethane
12	1,1,2-Trichloroethene
13	Methylcyclohexane
14	1,4-Dioxane
15	Pyridine
16	Toluene
17	2-Hexanone
18	Chlorobenzene
19	DMF
20	Ethylbenzene
21	m-Xylene
22	p-Xylene
23	0-Xylene
24	N,N-Dimethylacetamide
25	1,2,3,4-Tetrahydronaph

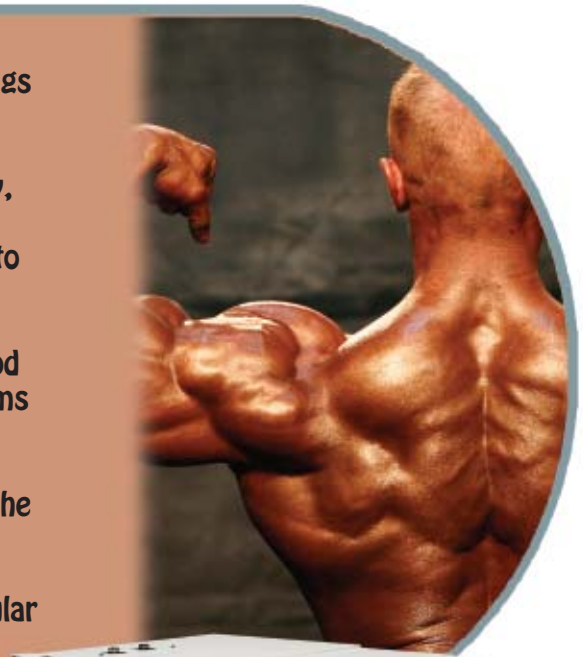


Pharmaceuticals

DPS Instruments, Inc.

www.dps-instruments.com

Steroids, androgenic and anabolic, are a class of synthetic drugs related to male sex hormones. Androgenic steroids are used to increase masculine characteristics when the body produces abnormally low amounts of testosterone, such as delayed puberty, some types of impotence, and body wasting, as in patients with AIDS. Anabolic steroids, on the other hand, are used by athletes to enhance performance and also to improve physical appearance. Abuse of anabolic steroids can lead to serious health problems including, liver tumors, cancer, jaundice, fluid retention, high blood pressure, and increased cholesterol. The DPS Steroids GC Systems are configured with the latest designed high resolution capillary columns and the sensitive FID detector to quickly detect 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 Steroids GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.



Available Configurations Include:

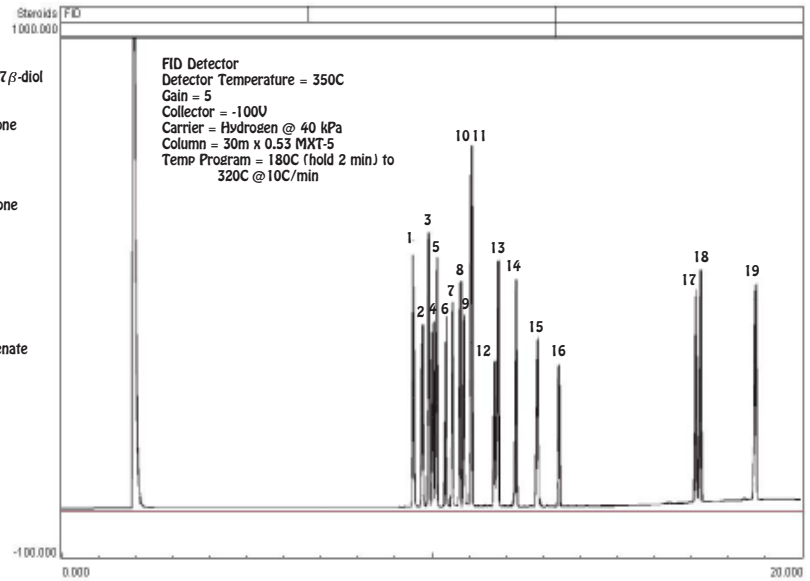
600-C-106 - Series 600 Steroids GC Analyzer (FID, 30m)
500-C-106 - Companion 1 Portable Steroids GC Analyzer (FID, 30m)

Series 600 GC

Companion 1 Portable GC

Steroids

Peak	Component
1	5-Androstene-3β,17β-diol
2	17α-Methyl-5-5androstene-3β,17β-diol
3	5α-Androstan-17β-ol-3-one
4	19-Nortestosteronel
5	17α-Methylandrostan-17β-ol-3-one
6	Mesterolone
7	Testosterone
8	17α-Methyltestosterone
9	1-Dehydrotestosterone
10	1-Dehydro-17α-methyltestosterone
11	Bolasterone
12	Oxymethalone
13	19-Nortestosterone-17-acetate
14	Testosterone Propionate
15	Fluoxymesterone
16	4-Chlorotestosterone-17-acetate
17	Testosterone-17β-cypionate
18	1-Dehydotestosterone Benzoate
19	1-Dehydrotestosterone Undecylenate



11/2015
Specifications may change without notice.

Pharmaceuticals

DPS Instruments, Inc.

www.dps-instruments.com

Barbiturates are sedatives which depress or slow down the body's functions. Often these drugs are referred to as tranquilizers and sleeping pills, or sometimes just as sedatives. Their effects range from calming down anxious people to promoting sleep. Both tranquilizers and sleeping pills can have either effect, depending on how much is taken. At high doses or when they are abused, many of these drugs can even cause unconsciousness and death. The DPS Barbiturates GC Systems are configured with the latest designed high resolution capillary columns and the sensitive FID detector to quickly detect 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 fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Barbiturates GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Series 600 GC

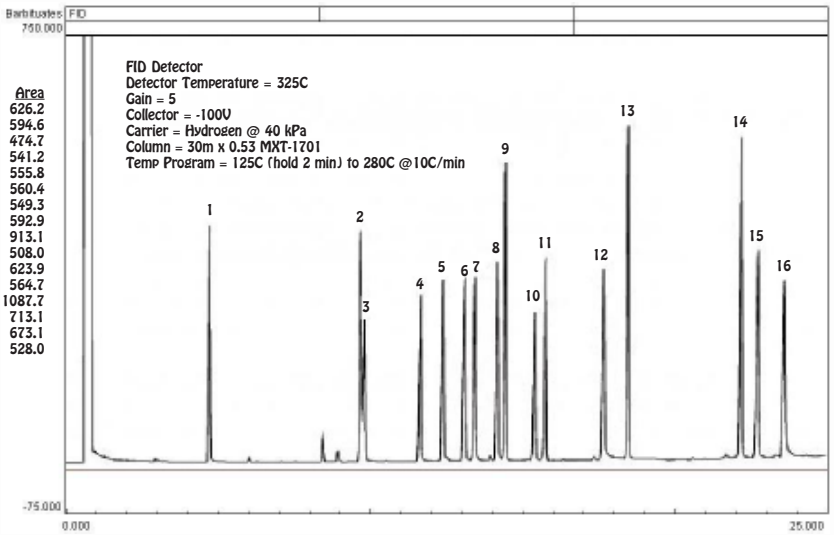
Available Configurations Include:

600-C-103 - Series 600 Barbituates GC Analyzer (FID, 30m)
500-C-103 - Companion 1 Portable Barbituates GC Analyzer (FID, 30m)

Companion 1 Portable GC

Barbiturate Drugs

Peak	Component	Area
1	Ethosuximide	626.2
2	Barbital	594.6
3	Methyprylon	474.7
4	Aprobarbital	541.2
5	Butalbital	555.8
6	Amobarbital	560.4
7	Pentobarbital	549.3
8	Secobarbital	592.9
9	Glutethimide	913.1
10	Meprobamate	508.0
11	Carisoprodal	623.9
12	Phenobarbital	564.7
13	Methaqualone	1087.7
14	Carbamazepine	713.1
15	Primidone	673.1
16	Diphenylhydantoin	528.0



Pharmaceuticals

Antiepileptics

DPS Instruments, Inc.

www.dps-instruments.com

Antiepileptics are anticonvulsants that belong to a diverse group of pharmaceuticals used to prevent seizures. The goal is to suppress the rapid and excessive firing of neurons that start a seizure. If the seizure can not be prevented, then a good anticonvulsant will limit the spread of the seizure within the brain and offer protection against possible brain damage. The DPS Antiepileptics GC Systems are configured with the latest designed high resolution capillary columns and the sensitive FID detector to quickly detect 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 fast heating and rapid cooling column oven in every DPS GC vastly increases your sample throughput. The fully integrated Antiepileptics GC Analyzer Systems are small and lightweight and all DPS systems are modular for expandability, upgrades, and easy service.

Available Configurations Include:

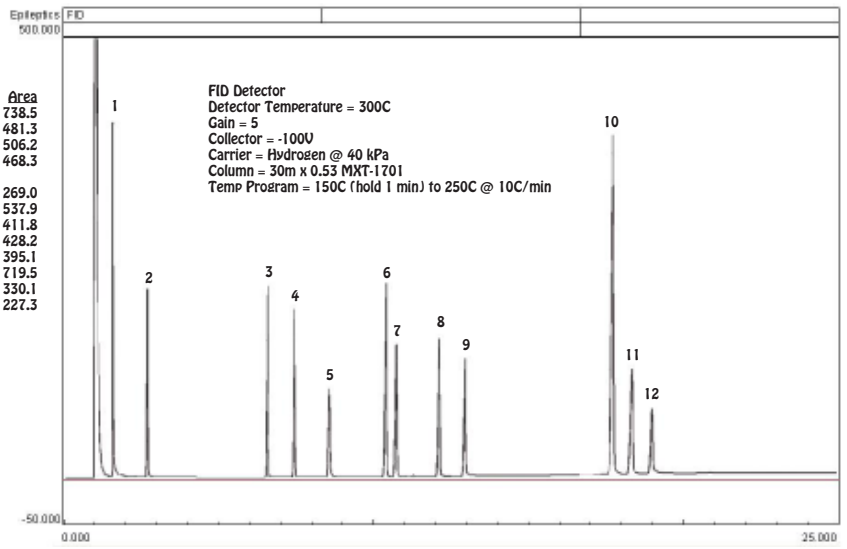
600-C-101 - Series 600 Antiepileptics GC Analyzer (FID, 30m)
500-C-101 - Companion 1 Portable Antiepileptics GC Analyzer (FID, 30m)

Series 600 GC

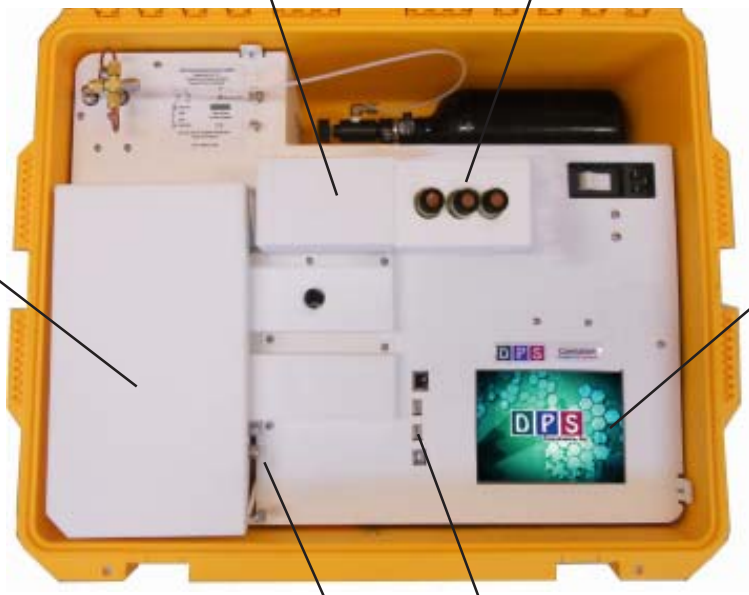
Companion 1 Portable GC

Antiepileptic Drugs

Peak	Component	Area
1	Valproic Acid	738.5
2	Ethosuximide	481.3
3	Methsuximide	506.2
4	Phensuximide	468.3
5	Desmethyl Methsuximide	269.0
6	Mephenytoin	537.9
7	Ethotoin	411.8
8	PEMA	428.2
9	Phenobarbitoal	395.1
10	Primidone	719.5
11	Carbamazepine	330.1
12	Diphenylhydantoin	227.3



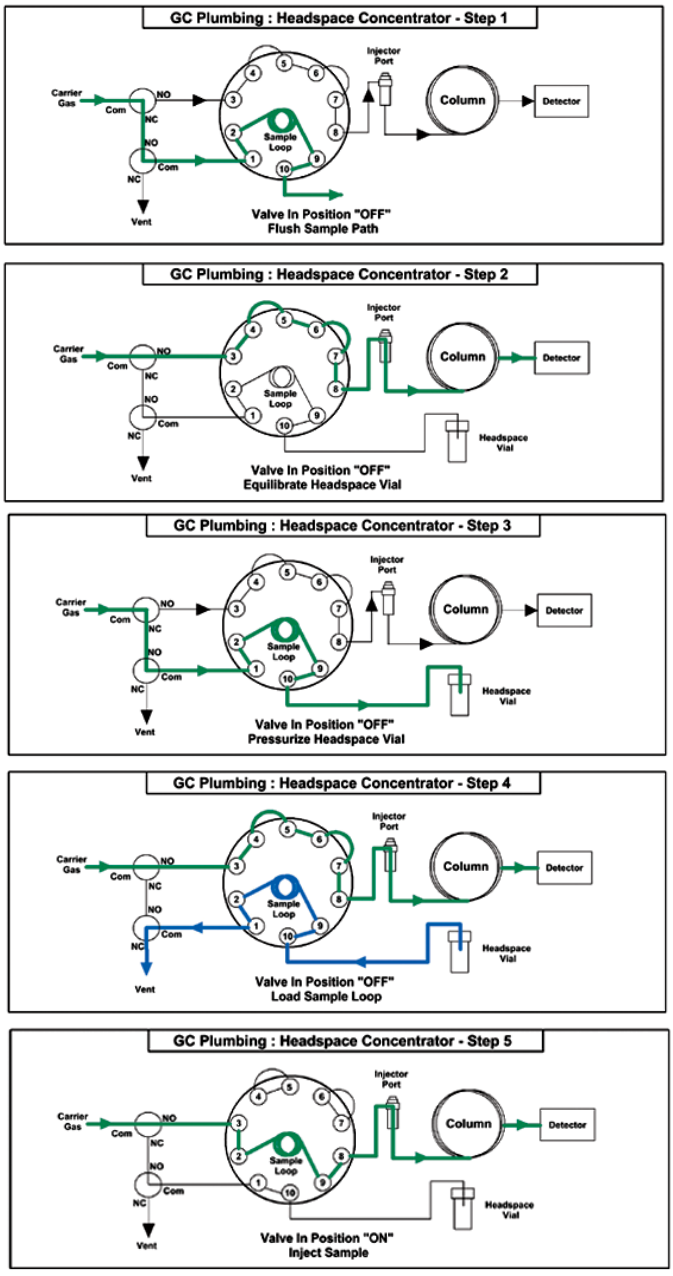
DPS Companion 2 Residual Solvents Layout



Plumbing Diagram

Headspace Concentrator - The Headspace Concentrator for Series 600's and Companion GC's are built right in to provide the shortest possible sample path. The Sample Vial is heated and then consistently Pressurized before loading the Sample Loop. A fixed Sample Loop ensures reproducible sampling and the sample lines are Flushed between analyses to limit any cross over contamination. The entire sequence of the Headspace Concentrator is automated through the Timeline sequence of the DPS GC Control Software for the analysis of one sample at a time, while two other samples are heated and allowed to equilibrate.

Plumbing Diagram - In the 1st Step the carrier gas is diverted to Flush out the Sample Lines between runs. During the 2nd Step the carrier gas flows to the analytical column and the Headspace Vial is heated with the Vial Heater and allowed to equilibrate. The Sample Probe is then inserted into the Headspace Vial. During the 3rd Step the Headspace Vial is pressurized for a few seconds. In the 4th Step the sample is loaded onto the Sample Loop by releasing the pressure in the headspace vial. In the 5th Step the Sample Valve is rotated to the ON position and the carrier gas sweeps the components from the Sample Loop onto the analytical column.



Headspace Plumbing Diagram

Results, Data & Conncetivity

Results: In this Headspace plumbing configuration the sample is placed inside a vial and then heated. The sample can be raw materials, tablets, pellets, or packaging material. The detector will respond with the same peak areas for the same concentration no matter which source the sample comes from.

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

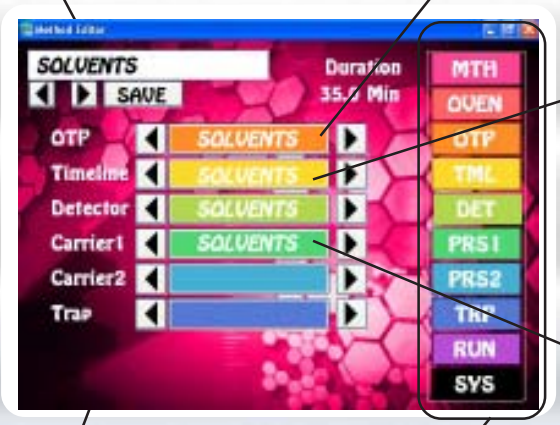
Easy to learn and master using a Graphical User Interface (GUI) and Color Touch Screen.

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

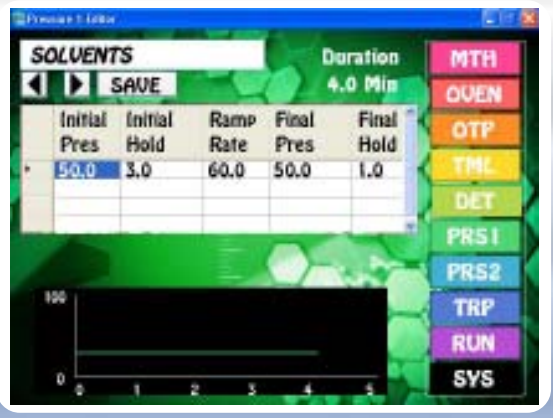
Oven Temp Program Editor

Timeline Editor

Method Name



File Selection Arrows



Carrier Pressure 1 Editor

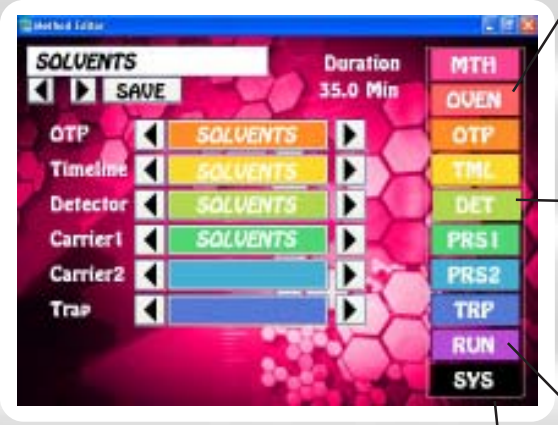
Navigation Buttons to Quickly jump from one screen to another. Most pages are one button away!

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.

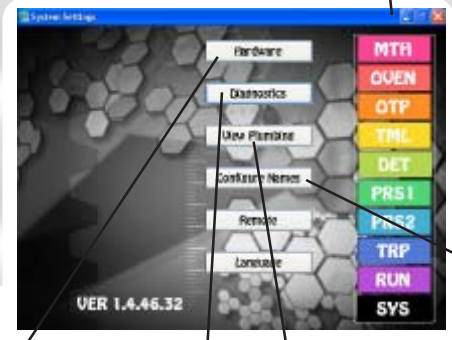
Oven Status

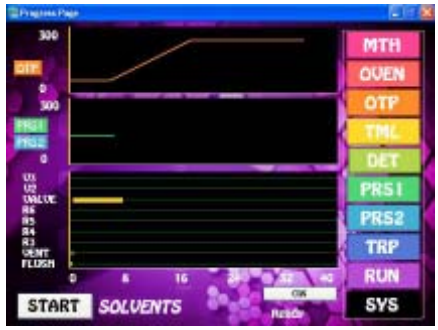


Method Editor

Detector Status

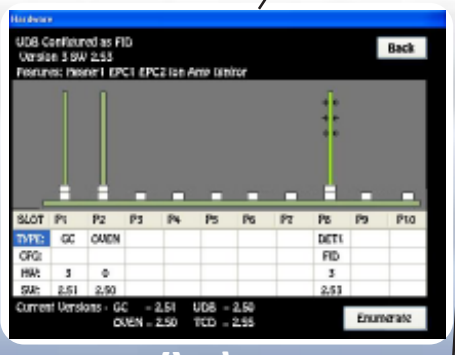
System Status



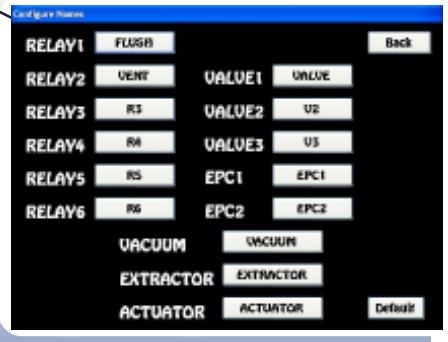


Run Status

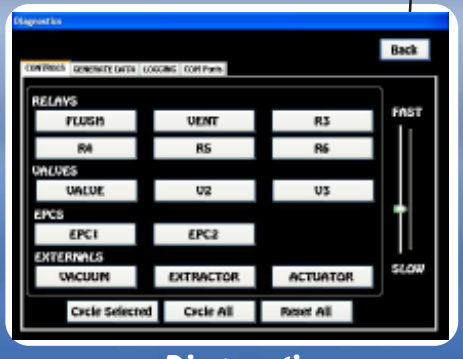
System status pages display the health and viability of the GC instrument.



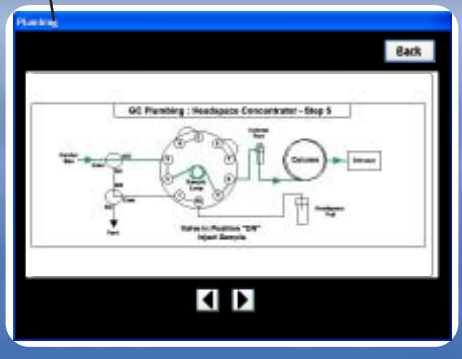
Hardware



Configure Names



Diagnostics



Plumbing

Residual Solvents 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.

Detector:
FID – Flamelonization Detector (1ng detection limit, dependent on sample loop size)

- 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:
30m Capillary

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
- 14 amps at 48 Vdc total power consumption

Built-In Accessories:
- Sample Valve - Electronically Actuated
- Heated Valve Oven
- Headspace Concentrator
- Flow Control Solenoids

Injector:
- 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.