Agilent GC Control Software for EZChrom Elite CDS and Agilent OL Operating System for the Laboratory
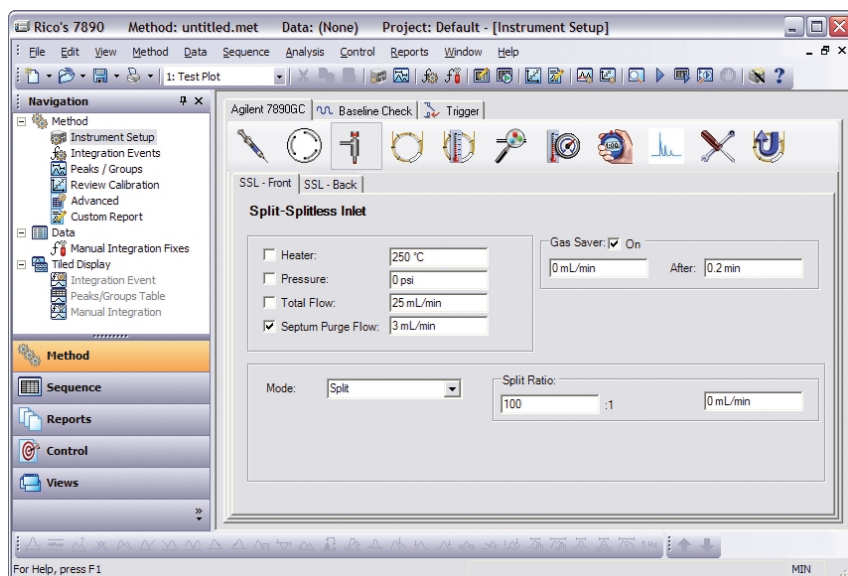

Figure 1. The EZChrom Elite CDS software and Agilent OL operating system for the laboratory provide a uniform software interface for all Agilent GCs. Graphical screens display all GC parameters on tabs allowing users to setup instrument control as part of their overall software method.

Control the Agilent 7890, 6890, 6850, 5890 and MicroGCs

Gas chromatographs from Agilent Technologies are in widespread use in chemical, petrochemical, pharmaceutical and environmental laboratories throughout the world. Agilent offers instrument control software for the Agilent 7890, 6890, 6850 and 5890 GCs and the 3000 MicroGC in combination with its EZChrom Elite CDS and Agilent OL Operating System for the Laboratory. This allows software control of these GCs along with a rich set of data handling and data analysis capabilities. Agilent's vast library of instrument control software includes Agilent GCs as well as many other instrument vendors so that well over 300 different chromatographs and chromatography devices can be software controlled in the EZChrom Elite and Agilent OL systems.

Specifications

The optional Agilent GC Control Software controls the following Agilent GC components (subject to the capability in the hardware model):

• Total control of all components and options of the Agilent 7890 GC, including micro-fluidics, backflush and all inlets, detectors and valves.

• Complete control of thermal zones, including column oven, injector zone, detector zone, and auxiliary heated zone.

• Support is included for the split/splitless, and on column injectors.

• Up to two valves are supported with the 6850, one configured as a multiposition valve, the other as a gas sampling valve. Up to four valves are supported with the 6890.

• Control is included for flow and temperature settings for both flame ionization detector and thermal conductivity detector.

• Optional drivers are available for the Agilent G1888A and 7694B Headspace Samplers.

• Support for Dual Tower GC modes for maximum throughput operations.

Agilent Technologies

Control All GCs Through the Same Software Interface

Regardless of the model of Agilent GC, EZChrom Elite and Agilent OL software simplify operation by providing the same software interface for all instruments. Users can create software methods for each type of Agilent GC using the same software displays and parameter entries to minimize learning time.

The Agilent GC Control Software provides temperature control (oven, zones and temperature programming), inlet temperature and pressure controls, valve programming and detector signal controls. Split/Splitless control and on column injector control, pressure and detector temperature control are also provided where applicable. Direct digital data acquisition from detectors avoids the unnecessary cost of analog/digital converters.

Apply Powerful Software to GC Data

EZChrom Elite and Agilent OL software provide built in features to handle a wide variety of GC data ranging from routine GC runs to runs with highly involved temperature programming and pressure programming. Specific instrument control features will depend on the type of Agilent GC being used. Sophisticated baseline determination, multiple quantitation techniques, and a variety of report options are also provided. Each GC run is stored with an embedded copy of the entire method, including instrument parameters and conditions, so that users can easily trace the exact instrument conditions used with any run. GLP/GMP facilities may utilize the built-in security features such as locking the GC keyboard when the GC is under software control, instrument logs and audit trails to document who has made changes and what parameters were changed, and 21 CFR Part 11 features for electronic signature as well.
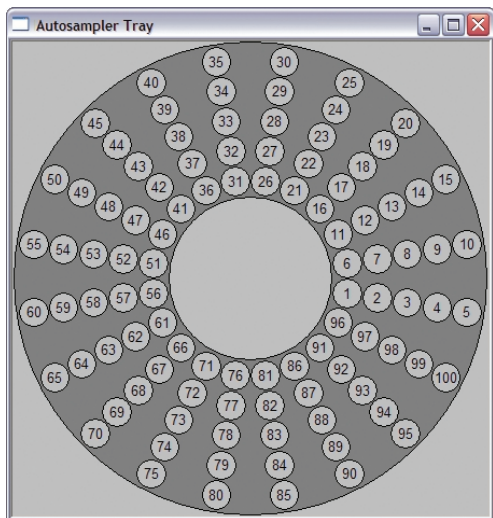

Figure 2. Software controls for the Agilent autosamplers make it easy to load, setup and view status of the sample

Integrated Autosampler Control

Autosamplers associated with each Agilent GC are also controlled. The autosampler control is fully integrated into the Agilent GC Control Software to make setup quick and easy.

For the 6850 and 6890GCs, the Agilent GC Control Software supports the 7673A, 7683A (G2613A), and 7683B (G2913A) Autosamplers. Control for the 7683B (G2913A) Autosamplers includes solvent saver mode, tower fan control, use of multiple wash bottles and waste bottle designation.

Headspace Sampler Control

Optional software is also available to control the Agilent 7694B and G1888A Headspace Samplers. The driver features full control of all headspace parameters, including timing, sampling and temperature management. Sample throughput is maximized by support for overlapping pretreatment of samples, which allows incubation of subsequent samples during analysis.

Special Dual Tower Software Control

Agilent GCs equipped with the special Dual Tower configuration are supported in EZChrom Elite and Agilent OL as well. This Dual Tower software control provides extended control of both towers for maximum throughput on the GC. The 7673, 7683A and the 7683B autosamplers can be controlled in this mode.
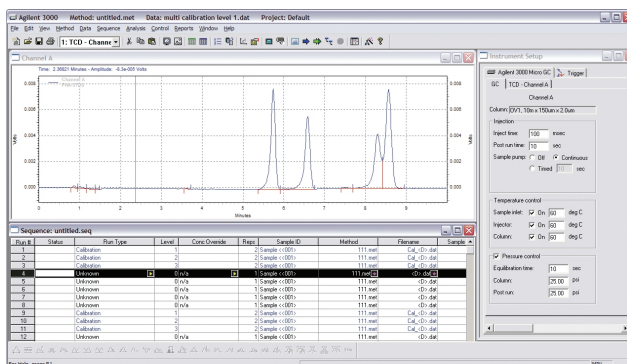

Figure 3. Software screen of the Agilent 3000 MicroGC. The chromatogram, sequence of injections, and instrument settings can be easily seen on one screen.

Hardware Requirements

Depending on the model of Agilent GC, various hardware communications and connections may be required.

Agilent 7890 is connected using LAN. An appropriate LAN version Agilent Instrument Controller is needed for network deployments in Agilent OL or EZChrom Elite Client/Server.

Agilent 5890 and 6890 GCs can be connected using RS232, IEEE-488 or LAN communications. An appropriate RS232, IEEE-488, or LAN version Agilent Instrument Controller is needed for network deployments in Agilent OL or EZChrom Elite Client/Server. Stand Alone workstation versions of EZChrom Elite will require the appropriate communications card occupying a PCI slot.

Agilent 6850 can be connected using RS232 or LAN. An appropriate RS232 or LAN version Agilent Instrument Controller is needed for network deployments in Agilent OL or EZChrom Elite Client/Server. Stand Alone workstation versions of EZChrom Elite will require the appropriate communications card occupying a PCI slot.

The Agilent 3000 MicroGC can be connected using LAN. An appropriate LAN version Agilent Instrument Controller is needed for network deployments in Agilent OL or EZChrom Elite Client/Server. Stand Alone workstation versions of EZChrom Elite will require the appropriate communications card occupying a PCI slot.

Unique EZChrom SI Configurations

Users who wish to operate only one Agilent GC and who require only basic EZChrom Elite features will want to consider the EZChrom SI software with Agilent GC control. This provides the EZChrom SI software with the appropriate Agilent GC control for a single GC. Intended for single user/single instrument operations that do not require the full capability of standard EZChrom Elite, the EZChrom SI systems are ideal low cost entries into the EZChrom Elite platform.

Scalable and Flexible Deployment

EZChrom Elite and Agilent OL provide a wide range of flexible deployments. Whether your needs call for a single user workstation, a scalable client/server operation or the use of web clients across the enterprise, Agilent can provide the ideal solution for collecting data and controlling Agilent GCs.

As a truly scalable application, EZChrom Elite allows ease and flexibility of deployment. The software can be installed on a single PC workstation to directly control and process data from one to four Agilent GCs. Additional PCs in the laboratory can be installed with EZChrom Offline Reprocessing licenses so that collected data can be reviewed and analyzed conveniently and safely on PCs in the office or in other networked locations. Or, the application can be installed in a client/server configuration so that different PC clients on the network can safely monitor, take control, and re-analyze data from all instruments on the network in real time.

Manage All Instrument Data with Agilent OL

The unique Agilent OL Operating System for the Laboratory provides powerful content management of all raw data and results from Agilent GCs and other chromatography instruments. "Smart" electronic filters specific for the Agilent GC results are used to extract key metadata from each GC run and store that information in a database. All results are automatically deposited in a safe, secure repository and made fully searchable.

Users can readily find their data based on queries that not only specify criteria such as instrument, username and Sample ID, but even extend to detailed results such as component names and concentration ranges. Three different types of database searches are provided in Agilent OL to accommodate different situations and make it easy for users to find the results of their searches.

Agilent OL manages all the electronic information in the laboratory. In addition to all Agilent GC raw data and results, Agilent OL can manage Microsoft Office files, e-mails, Adobe pdf files, chromatography data from EZChrom Elite and other CDS packages, mass spectrometry files, and much more. No other package offers this powerful capability to handle all electronic information and documents generated in the laboratory. Conduct quick, focused searches across all your data to find hits from various Agilent GC results, as well as Excel spreadsheets, Word documents, pdf reports, and more.

Furthermore, Agilent OL's management of the information makes it easier and safer to collaborate and share results with others with its powerful "check-in/check out" capabilities and electronic signoff capabilities.
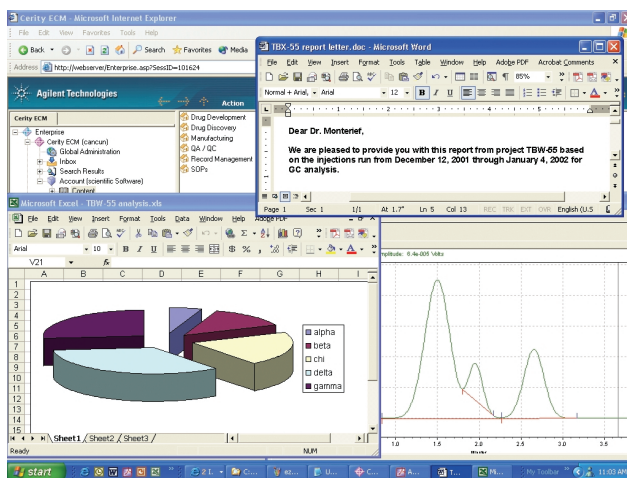

Figure 4. Agilent OL enables total content management of instruments as well as general laboratory information. Database searches across the entire enterprise can locate specific Agilent GC results, word documents, Excel summaries, and even emails that match desired search criteria.

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