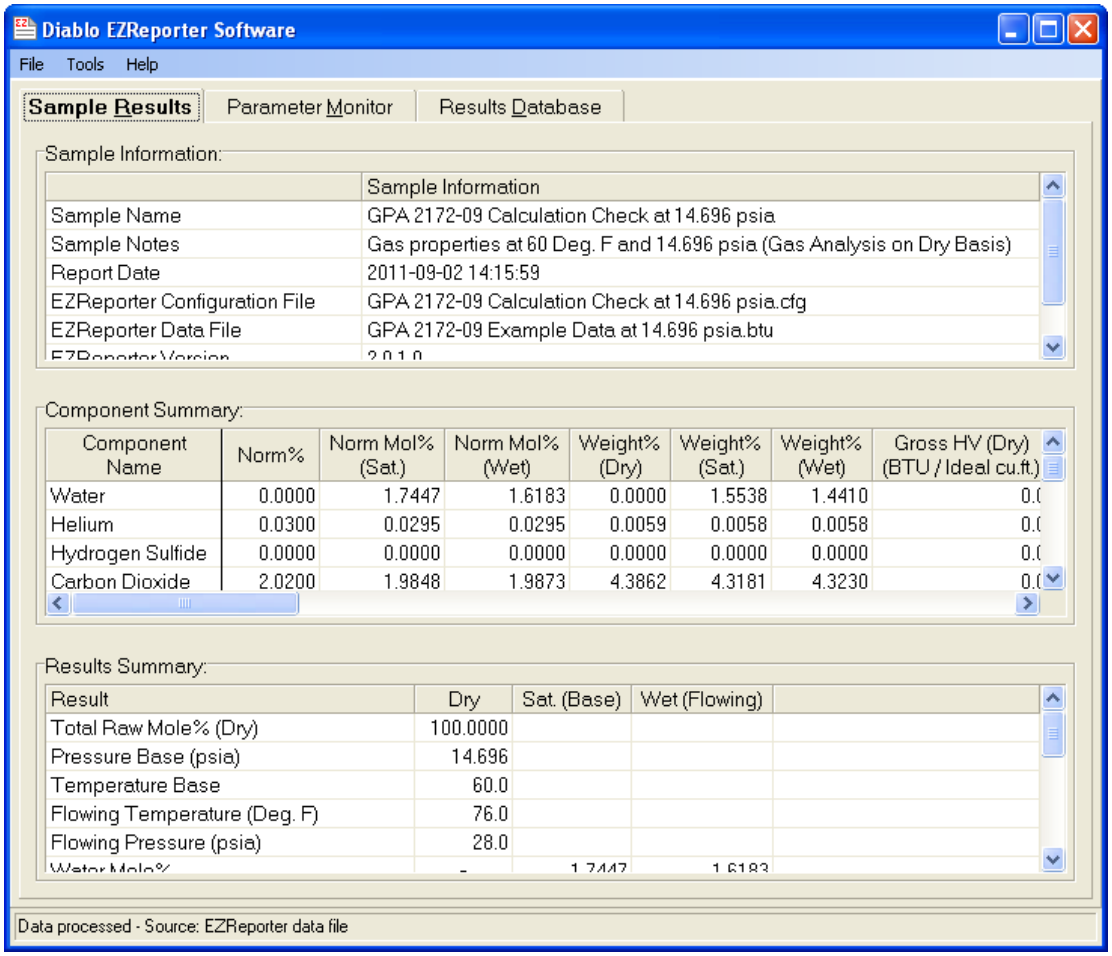
Diablo EZReporter

Quick Start Guide - ChemStation Edition



Diablo Analytical EZReporter Software

Quick Start Guide

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EZReporter Quick Start Guide

Introduction

This Quick Start guide is intended to provide instructions on installing and configuring the Diablo Analytical EZReporter software to process results automatically from the Agilent Technologies ChemStation chromatography data system. Please refer to the EZReporter Reference Manual for the details about configuring EZReporter's many features and options.

Important:

There are several places in this manual where particularly important information is identified by the "Important" call out (like this). If you read nothing else in this manual, please read these important items.

Prerequisites

1. You should have already installed the ChemStation chromatography data system, and created a method and calibration that produces external standard results. Refer to the data system help files and documentation or contact the data system vendor support for assistance in installing and configuring the data system.

Installation and Configuration Checklist

- ❑ Install the Agilent ChemStation software
- ❑ Create a calibrated method in ChemStation
- ❑ Install the Diablo EZReporter software
- ❑ Activate your EZReporter license
- ❑ Load a suitable EZReporter configuration as a starting place
- ❑ Edit the EZReporter component list to match the components reported by ChemStation
- ❑ For Natural Gas Analysis reports, set the correct base pressure for the calculations.
- ❑ Customize the EZReporter Report to meet you needs
- ❑ Save your customized EZReporter configuration to a new settings file.
- ❑ Configure the ChemStation method to call the "ezrpt.mac" macro as the post-run macro
- ❑ Save the modified ChemStation method

- ❑ Analyze or reprocess a sample in ChemStation and confirm that ChemStation and EZReporter are configured correctly

Install the EZReporter Software

To install the EZReporter software, simply run the installation program that was downloaded from our web site or provided on the installation CD-ROM. Follow the directions presented by the installation program. The installation program will install the Diablo EZReporter in trial mode on new systems, or will update licensed installations to the latest version of the software.

Important:

- You must be logged in with Administrator privileges in order to install the software.
- Any users who will be running the software under a non-administrator account must have full read/write permissions to the EZReporter directories and files. The installation program grants these rights to the "Everyone" user group. However, if the "Everyone" user group is disabled on the network, then you will have to grant these permissions manually.

Installation Paths and Folders

Windows XP and 7-32 bit: "C:\Program Files\Diablo EZReporter"

Windows 7-64 bit: "C:\Program Files (x86)\Diablo EZReporter"

EZReporter configuration and template files are saved in the "Settings" folder,

Windows XP and 7-32 bit: "C:\Program Files\Diablo EZReporter\Settings"

Windows 7-64 bit: "C:\Program Files (x86)\Diablo EZReporter\Settings r"

EZReporter data files are saved by default in the "Data" folder,

Windows XP and 7-32 bit: "C:\Program Files\Diablo EZReporter\Data"

Windows 7-64 bit: "C:\Program Files\Diablo EZReporter (x86)\Data"

Software License and Registration

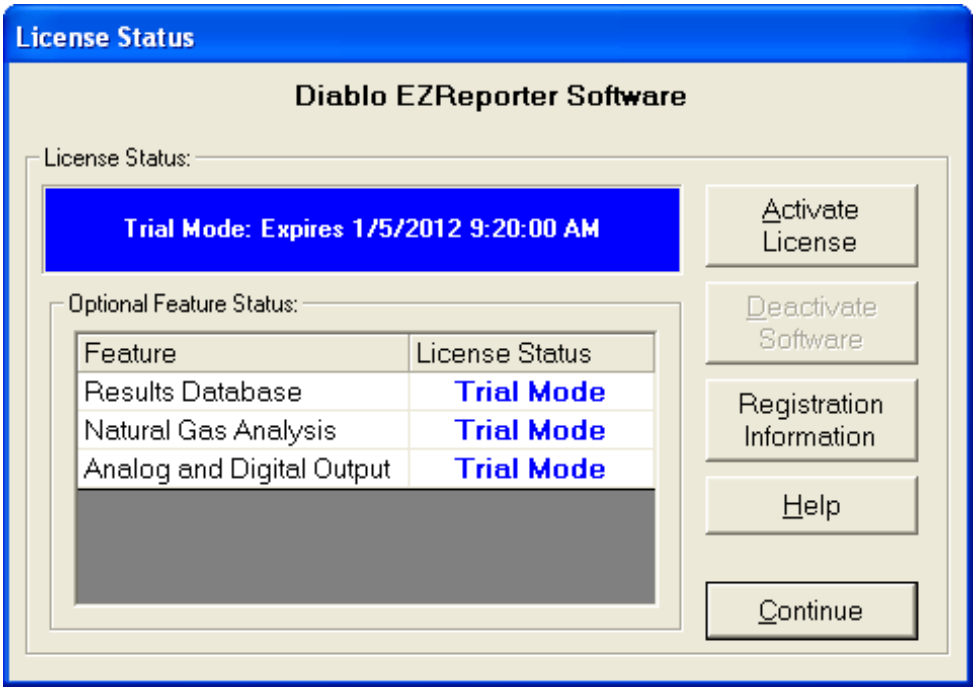
The EZReporter software is distributed as a fully functional 30-day trial application. The trial version has all of the features of the registered version, but you will be reminded that you are running the trial version with a "nag" screen each time you start the software. At the end of the 30-day trial period the application will no longer start unless you purchase a license or request an evaluation extension from Diablo Analytical.

Important:

Important: The Results Database, Natural Gas Analysis (NGA), and Analog & Digital Output Modules are add-on options that require payment of additional license fees and require separate license activation codes (unless they are included in the particular software edition that you have licensed). However, you can evaluate these features during the 30-day trial period of the base software. If you activate the base software without also activating the results database and/or natural gas analysis feature, then the unactivated features will be disabled.

Activate your License

Please refer to the Diablo Software License Guide for information on how to activate the base EZReporter module or any of the optional modules. This guide can be accessed through the "Help" button on the License Status window that is displayed when you start the software or by selecting the "License Status" option of the "Help" menu. An Adobe Acrobat (PDF) version of the guide is also saved in the EZReporter installation folder.



The EZReporter "License Status" window used to activate the software.

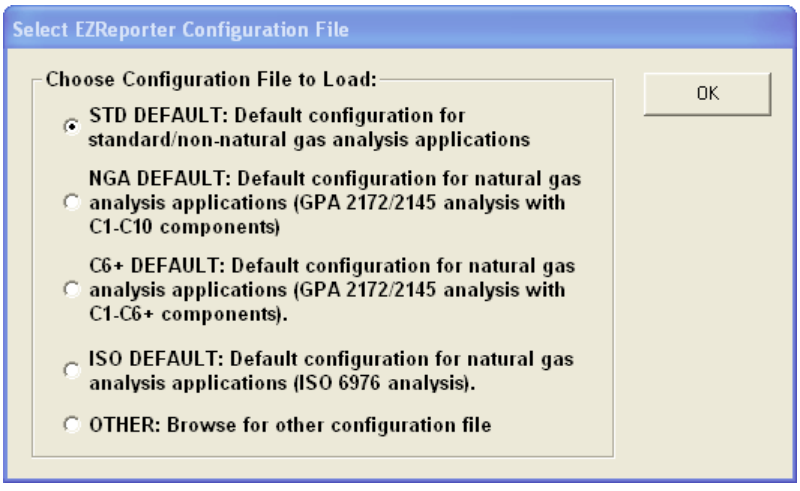
Configure EZReporter

Introduction

EZReporter ships with a number of default configuration files. The default configuration files are primarily designed for Natural Gas Analysis (NGA) and reporting. For other applications with a different list of components, you can simply clear the default component list and type in the names of your components without worrying about entering NGA physical properties.

Load and Edit the Configuration File

The first time you run EZReporter the following window will be displayed allowing you to choose the default configuration file you would like to load:



Choose the default configuration that most closely matches your application or browse for a specific configuration file. Once you have loaded the configuration file, you should configure the settings for your application. To open the configuration editor, select the "Edit Configuration.." option of the "Tools" menu..

Important

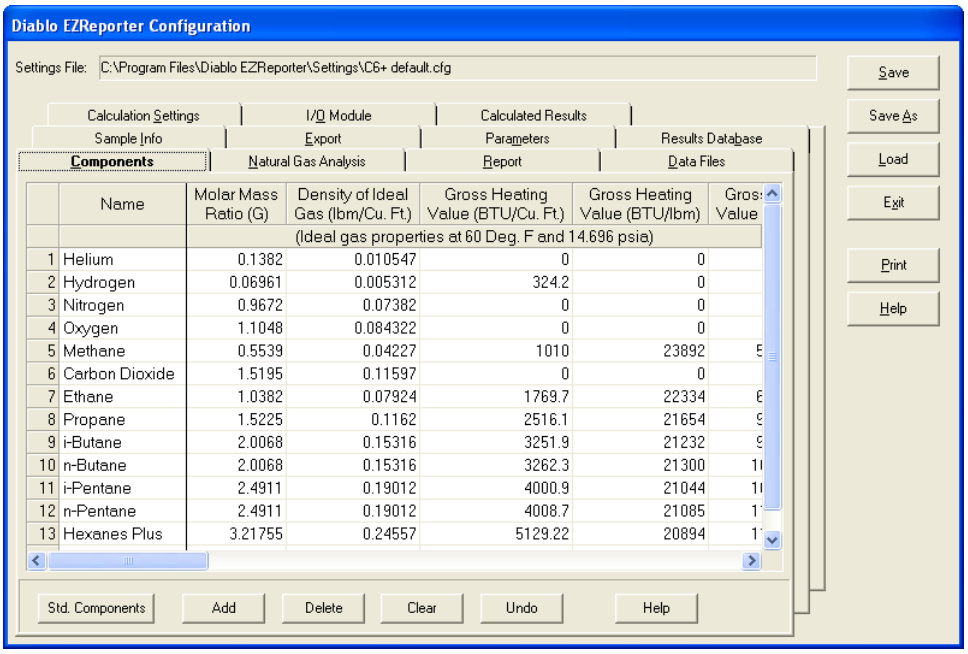
If you upgrade or re-install the EZReporter Software, all of the default configuration files listed in this table will be overwritten with the current versions. Consequently, if you use any of these default configuration files as the basis for a custom configuration, make sure to save your configuration file with a different file name.

EZReporter Standard Configuration Files	
File	**Description**
Default Configuration Files	
STD Default.cfg	The default configuration for standard/non-natural gas analysis applications. It does not include any pre-configured components. You will need to add the components required for your analysis.
NGA Default	A default configuration for natural gas analysis applications (GPA 2172/2145 analysis with C1-C10 components). The Pressure Base is set to 14.73 in this file.
C6+ Default.cfg	An alternate configuration for natural gas analysis applications (GPA 2172/2145 analysis with C1-C6+ components).. The calculation factors used for the hexanes plus component are based on a 60:30:10 mixture of hexane, heptane, and octane. The GPA 2145-09 Standard was used to calculate the Hexanes+ calculation factors.
ISO Default.cfg	A default configuration for natural gas analysis applications (ISO 6976 analysis). The physical property data are for a combustion temperature of 15 Deg. C and a metering temperature of 15 Deg. C.
ISO 6976 (0-0 Deg C).cfg	Similar to the ISO Default configuration except the physical property data are for a combustion temperature of 0 Deg. C and a metering temperature of 0 Deg. C.
ISO 6976 (15-0 Deg C).cfg	Similar to the ISO Default configuration except the physical property data are for a combustion temperature of 15 Deg. C and a metering temperature of 0 Deg. C.
ISO 6976 (25-0 Deg C).cfg	Similar to the ISO Default configuration except the physical property data are for a combustion temperature of 25 Deg. C and a metering temperature of 0 Deg. C.
ISO 6976 (15-15 Deg C).cfg	Identical to the ISO Default configuration with the physical property data for a combustion temperature of 15 Deg. C and a metering temperature of 15 Deg. C.
ISO 6976 (20-20 Deg C).cfg	Similar to the ISO Default configuration except the physical property data are for a combustion temperature of 20 Deg. C and a metering temperature of 20 Deg. C.
ISO 6976 (25-20 Deg C).cfg	Similar to the ISO Default configuration except the physical property data are for a combustion temperature of 25 Deg. C and a metering temperature of 20 Deg. C.
NGL Default (WtPct-Combined).cfg	A default configuration for Natural Gas Liquids (NGL) with "combined" extended fraction reporting. With this calculation and reporting method the extended fraction results are reported separately and are also combined into the standard /total results through the specified combined component (usually Hexanes Plus). This configuration includes the full component list from GPA TP-17.
NGL Default (WtPct-Combined-Corrected).cfg	A default configuration for Natural Gas Liquids (NGL) with "combined" extended fraction reporting. This configuration file is the same as the "Combined" configuration, but it is also set up to correct the raw component amounts in the extended fraction using a correction ("bridge") factor calculated from the iso-pentane and n-pentane amounts from the standard component range (usually from the TCD detector) and the extended component range (usually from the FID detector).
NGL Default (WtPct-Separate).cfg	A default configuration for Natural Gas Liquids (NGL) with "separate" extended fraction reporting. With this calculation and reporting method, the extended fraction results are reported separately from the standard/total results. This configuration includes the full

EZReporter Standard Configuration Files	
File	**Description**
	component list from GPA TP-17.
GPA 2145-03.cfg	Contains the components and factors in the GPA 2145-03 Standard. The Pressure Base is set to 14.696 in this file.
GPA 2145-09.cfg	Contains the components and factors in the GPA 2145-09 Standard. The Pressure Base is set to 14.696 in this file.
GPA 2177-03.cfg	A configuration based on the GPA 2177-03 standard. The pressure base is set to 14.696 in this file.
ASTM D3588-98 (2003).cfg	Contains a sub-set of the components and factors in the ASTM D3588-98 (2003) standard. The Pressure Base is set to 14.696 in this file.
Refinery Gas.cfg	A configuration containing common components found in refinery gas. Physical properties are taken from GPA 2145-09, ASTM D3588 (98), GPSA Engineering Data Book (2004) and other sources.
Calculation Check Configuration Files	
GPA 2172-09 Calculation Check at 14.696 psia.cfg	A configuration designed to check the GPA 2172-09 NGA calculations made at a bas pressure of 14.696 psia. Simply load the corresponding data file (GPA 2172-09 Example Data at 14.696 psia.btu) and switch to the "Parameters" table.
GPA 2172-09 Calculation Check at 14.65 psia.cfg	Same as above except it is designed to check the calculations at a bas pressure of 14.65 psia. Make sure to load the correct data file (GPA 2172-09 Example Data at 14.65 psia.btu)
GPA 2177-03 Calculation Check (VolPct).cfg	A configuration designed to check the GPA 2177-03 calculations made at a baes pressure of 14.696 psia. Simply load the corresponding data file (GPA 2177-03 (VolPct).btu) and switch to the "Parameters" table.
GPA 2186-02 Calculation Check (MolPct-Separate).cfg	A configuration designed to check the GPA 2186-02 NGL calculations using the Mole% component amounts and separate extended fraction report. Simply load the corresponding data file (GPA 2186-02 Calculation Check (MolPct-Separate).btu) and switch to the "Parameters" table.
GPA 2186-02 Calculation Check (WtPct-Combined).cfg	A configuration designed to check the GPA 2186-02 NGL calculations using the Weight% component amounts and combined extended fraction report. Simply load the corresponding data file (GPA 2186-02 Calculation Check (WtPct-Combined).btu) and switch to the "Parameters" table.
GPA 2186-02 Calculation Check (WtPct-Separate).cfg	A configuration designed to check the GPA 2186-02 NGL calculations using the Weight% component amounts and separate extended fraction report. Simply load the corresponding data file (GPA 2186-02 Calculation Check (WtPct-Separate).btu) and switch to the "Parameters" table.
ISO 6976 Calculation Check.cfg	A configuration designed to check the ISO 6976 NGA calculations. Simply load the corresponding data file (ISO 6976 Calculation Check.btu) and switch to the "Parameters" table.

Edit Component List

In order for EZReporter to recognize the ChemStation component results, the component names in the EZReporter component list must match the names used in the ChemStation peak tables and reports. To access the EZReporter component table simply click the "Tools > Edit configuration…" menu option and select the "Components" tab.

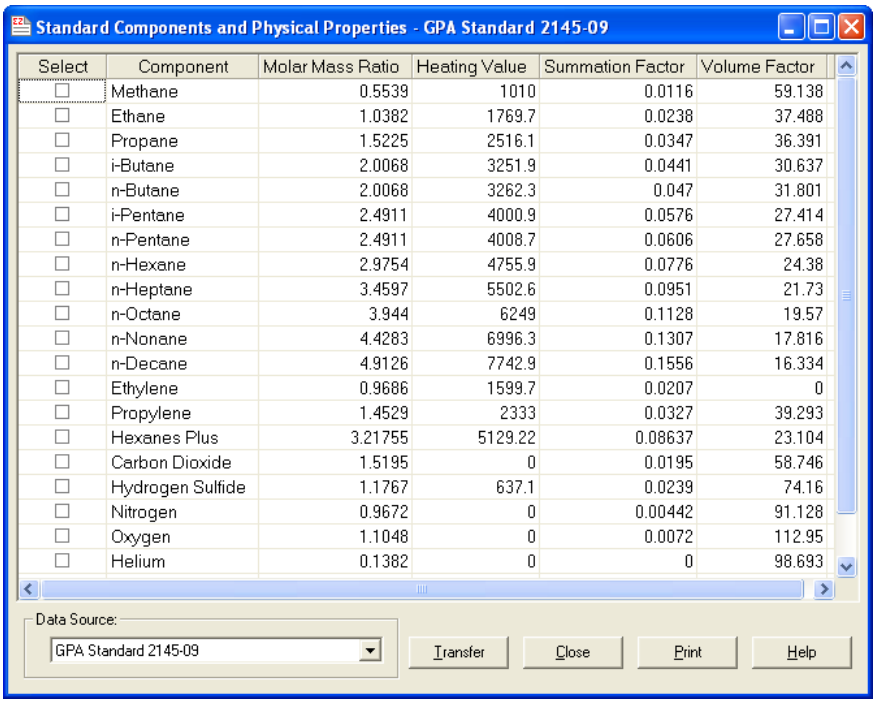


EZReporter configuration screen – Components Tab

Renaming Components: To rename existing components, simply double click the name in the component table and edit it in place.

Adding New Components: To add a new component to the configuration you can click the "Add" button to add a new row to the component table and then fill in the component name and other details manually.

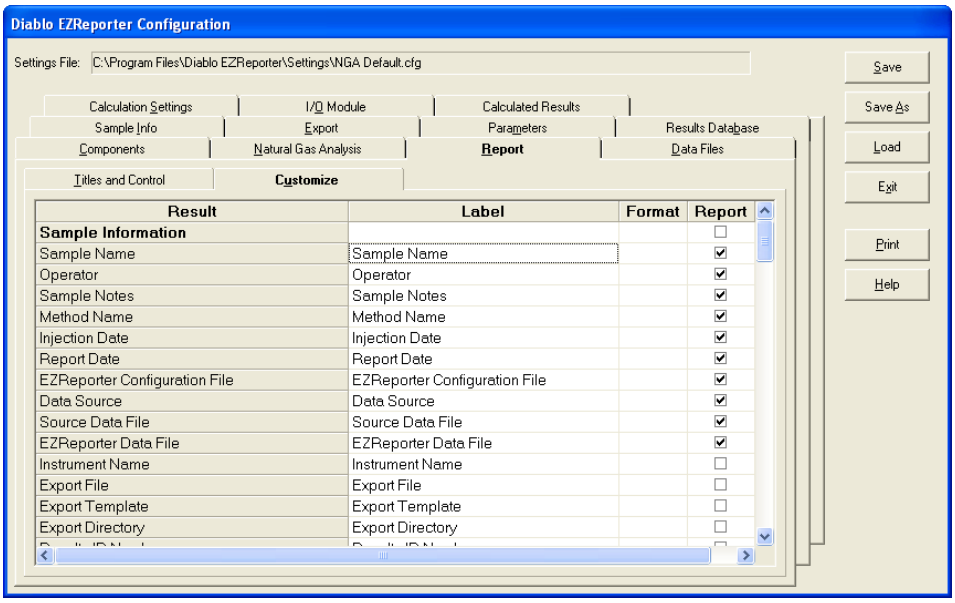
Alternatively for Natural Gas Analysis applications, click the "Std Components" button and choose the desired component from one of the standard data sources. Choose the desired "Data Source", check the desired components to add to your configuration, and then click the "Transfer" button.



Standard Components for Natural Gas Analysis

Customize the Report

You can customize the results and sample information that are included in the displayed/printed report. To customize the EZReporter report simply click the "Tools > Edit configuration…" menu option and select the "Report" tab and "Customize" sub tab.



EZReporter configuration screen – Report - Customize Tab

Simply check the sample information, component results, and total/summary results that you want to have displayed in the report. You can also customize the label that is displayed for each result in the report.

Specify Other NGA Calculation Parameters

Pressure Base: Make sure to set the Pressure Base to the correct value for your location or your contractual requirements. All of the default configuration files use a Pressure Base of 14.696 or 14.73 psia. It is the customer's responsibility to determine the correct Pressure Base to use for their specific requirements. Note that the North American Energy Standards Board (NAESB) specifies a standard pressure base of 14.73 psia. Consequently many companies are adopting 14.73 as the standard pressure base for these calculations. You can change the pressure base used in the calculations in the "Natural Gas Analysis" tab of the configuration editor. ISO configuration files all use a base/reference pressure of 101.325 kPa.

Configure the ChemStation

Configure the Agilent Technologies GC/LC ChemStation

The Diablo EZReporter software supports automated processing of calibrated peak results generated by the Agilent Technologies GC or LC ChemStation data system. This support is accomplished using a post-run macro as described below.

Important:

Important: In order to process results from the Agilent Technologies ChemStation data system, you must first make sure that the names in the EZReporter component settings table match the compound names in the ChemStation calibration tables. For example, if a compound is named "Hexane" in the ChemStation calibration table, it must also be entered as "Hexane" in the component settings table (not "n-Hexane", or "nC6").

Configure the ChemStation Method

To configure a ChemStation method for automatic processing with the EZReporter software, open the "Run-Time Checklist" dialog box via the "Method > Run Time Checklist…" menu option and configure this dialog bog as follows.

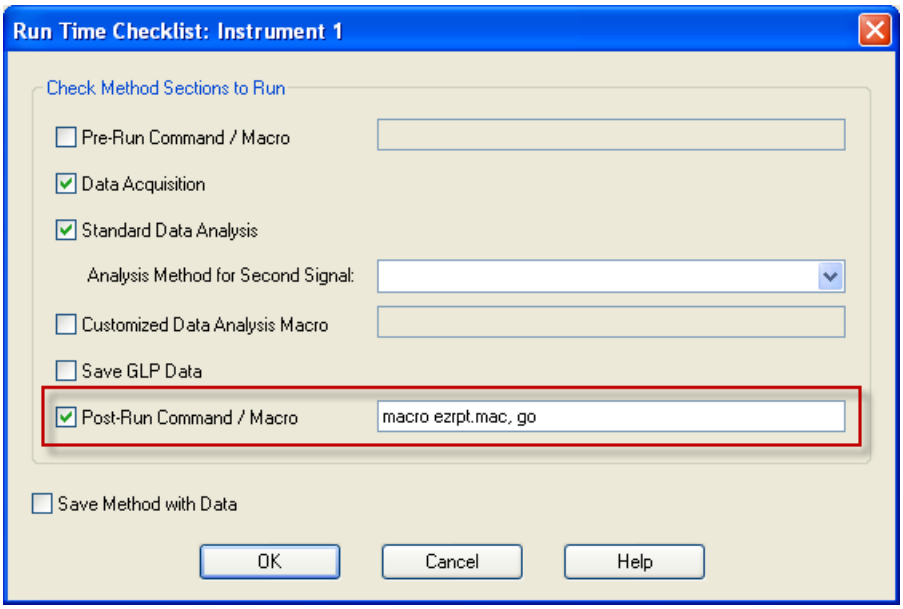
1. Check the "Post-Run Command/Macro checkbox.
2. Enter the following command:

   macro ezrpt.mac, go

3. Click "OK".

Important:

Important: Make sure to save the ChemStation method once you have made these modifications.



The Agilent ChemStation "Run Time Checklist" dialog box configured to send results automatically to the EZReporter software at the end of each run.

Note: If the EZReporter installation program detects the presence of the ChemStation software on the computer, it will automatically copy the post-run macro, "ezrpt.mac" to the proper folder in the ChemStation directory structure (the "Core" folder). If the ChemStation software is not detected, then the macro will be installed to the EZReporter installation folder and it will need to be copied manually to the ChemStation "Core" folder.

Processing ChemStation Results

Automatic Processing of ChemStation Results

If you have configured the ChemStation method for automatic post-run processing using the "**ezrpt.mac**" macro, then the results for calibrated peaks in all signals will be sent to the EZReporter software at the end of the run.

The macro accomplishes this by saving the peak results and other sample information to the file "ezrpt.txt" in the data file, ".D" folder. The macro then calls the ChemStation Connector program, "**ProcessChemStationData.exe**", which reads the text file, and sends the results to the EZReporter software.

If this program successfully reads the results from the text file and the EZReporter software runs successfully, then the program will close automatically. However, if any errors occur, the program will remain open to allow you to check the log window for information about the error.

Important:

Important: It is best to start the Diablo EZReporter software before processing results from the ChemStation software.

Reprocessing Results in ChemStation Data Analysis

You can also reprocess results manually from the ChemStation Data Analysis view as follows:

1. Start the ChemStation software and switch to the Data Analysis View

2. At the ChemStation command line, type the following command followed by the "Enter" key:

   ```
   macro "ezrpt.mac"
   ```

   Note: You will need to reload the macro from the Data Analysis view any time you restart the ChemStation software.

3. When the macro is loaded a new option will be added to the Data Analysis "Report" menu: Report > Generate EZReport".

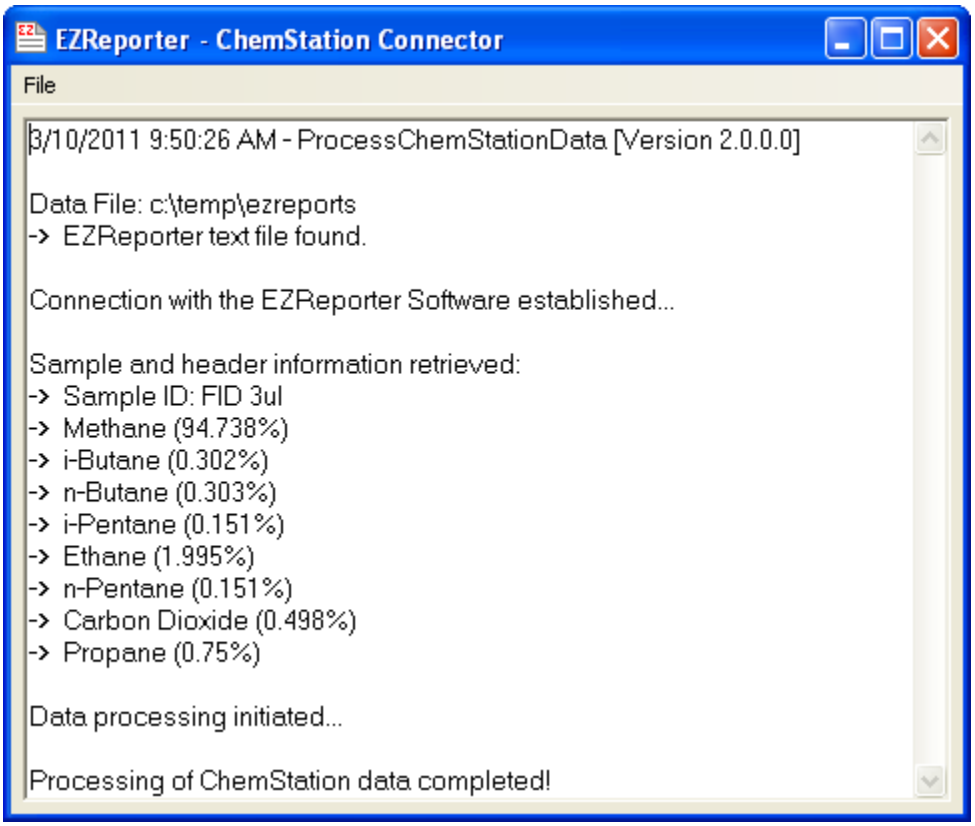
4. **Important**: before sending results to EZReporter you must first generate a ChemStation report to ensure that all of the external standard results are calculated: "Report > Print Report"

5. **Important**: Make sure that you have already started the EZReporter software before sending results.

6. Click the "Report > Generate EZReport" menu option to send the current results to EZReporter for processing.

The ChemStation Connector

Once you have configured the ChemStation software as described above, the "ezrpt.mac" macro will create the "ezrpt.txt" file in the data file folder each time a sample is analyzed or-reanalyzed. After creating the exrpt.txt files the macro automatically runs the ChemStation Connector program, "ProcessChemStationData.exe". The ChemStation Connector program will check the data file folder for the presence of the ezrpt.txt file and if it is found, read the sample information and component data and pass it to the EZReporter software for processing.



The ChemStation Connector's status/log window

If the ChemStation Connector is able to read the "ezrpt.txt" file and send results to EZReporter successfully, it will automatically close. However, if any errors occur, the software will remain open and any error message will be displayed in the Status/Log window shown above.

Hints, Tips, and Troubleshooting

Frequently Asked Questions

Question:

Why am I not seeing any results in EZReporter after making a run in my chromatography data system?

Answer:

1. EZReporter wasn't started when you tried to process results from your chromatography data system.
2. The component names in your data system peak table and report don't match any of the component names in the EZReporter component table.
3. You switched to a method that isn't set up to run the "ezrpt.mac" macro as the post-run command.
4. After activating the EZReporter license, you should close and then re-open EZReporter before trying to process results from your chromatography data system.

Question:

Why are some of the component amounts in EZReporter reported as "0" when I know they are correct in the chromatography data system?

Answer:

1. Most likely the component name is spelled differently in the data system's Peak Table than it is in the EZReporter component table.

Question

Why do my natural gas analysis results not match previous results from the same sample or reported from another software program or laboratory?

Answer

There could be many reasons for this. Here are a few of the most common possibilities:

1. Small differences may simply be due to rounding error if a different number of decimal places were used for component amounts or any of the physical properties or factors used in the calculation.
2. If the results were calculated from a different chromatography run, then small differences are expected. The GPA publishes acceptable repeatability limits (same sample analyzed in the same lab) and reproducibility limits

(same sample analyzed in a different lab). In addition, if the samples were taken at different times from a flowing source like a well, then it is expected that results will vary from sample to sample.

3. You are using a different set of physical properties in EZReporter than were used previously. The GPA updates the physical properties used in the calculations from time to time. The last update was in early 2010 when the GPA 2145-09 standard was published.
4. You are using a different base pressure in the calculations. This can have a significant impact on the "Real" results, which are corrected for base pressure.

Question

EZReporter is only reporting "Dry" results. How do I configure EZReporter to report 'Saturated' results?

Answer

In order to generate "Saturated" results you must add "Water" as a component to the component list in the configuration.

Hints and Best Practices

Here is a list of hints and best practices for EZReporter.

1. After successfully activating the software license, close and then restart the software before trying to process results automatically from your chromatography data system.
2. Always start the EZReporter Software before trying to process results automatically from your chromatography data system.
3. Make sure that you have set the pressure base in each configuration file you use to the correct value for your location or your contracts. The pressure base used for calculations is often agreed to contractually with your customers.
4. If you customize one of the default configuration files by changing any of the settings in the configuration editor, you should save it to a different file name using the "Save As" option in order to prevent it from being overwritten when you install a new version of the software.
5. Always save backup copies of your configuration file and export template file (if you use this feature) to a flash drive or other secure location that is not located on the same hard drive as the EZReporter software. This will allow you to recover quickly from a hard drive failure. Make new backup copies whenever you make any changes to the configuration or export template. The latest versions of EZReporter have a menu option that makes it convenient to backup your configuration files to a date and time-stamped zip file.
6. In order for the EZReporter software to process results from your chromatography data system properly, it is important that the component names in the "Components" tab of the configuration editor match the component names in your chromatography data system peak tables. One hint that you may have mismatched component names is if the component mole% is reported as 0 in EZReporter, while it is non-zero in the your chromatography data system results for that sample.
7. If you want the EZReporter to report "Saturated" results in addition to "Dry" results, simply add "Water" as a component to the component list in the configuration.
8. The physical properties for "Hexanes Plus" are calculated based on a 60/30/10 ratio of the individual physical properties of n-hexane, n-heptane, and n-octane. If you want to use some other ratio for your own calculations, we have provided an Excel spreadsheet, "Hexanes Plus Factors.XLS", in the EZReporter installation folder to facilitate this.

9. Make sure that you have configured and calibrated your GC in your chromatography data system, and are generating accurate mole% results before sending results to EZReporter.

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