

NGA Physical Property Update Procedure

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Standard Components and Physical Properties - GPA Standard 2145-16 (FPS)

Select	Name	Molar Mass Ratio (G)	Density of Ideal Gas (lbm/Cu. Ft.)	Gross Heating Value (BTU/Cu. Ft.)
<input checked="" type="checkbox"/>	methane	0.5539	0.04227	1010
<input checked="" type="checkbox"/>	ethane	1.0382	0.07924	1769
<input checked="" type="checkbox"/>	propane	1.5225	0.1162	2516
<input type="checkbox"/>	isobutane	2.0068	0.15316	3257
<input checked="" type="checkbox"/>	n-butane	2.0068	0.15316	3262
<input type="checkbox"/>	isopentane	2.4911	0.19012	4000
<input checked="" type="checkbox"/>	n-pentane	2.4911	0.19012	4008
<input checked="" type="checkbox"/>	n-hexane	2.9754	0.22709	4759
<input checked="" type="checkbox"/>	n-heptane	3.4597	0.26405	5502
<input checked="" type="checkbox"/>	n-octane	3.944	0.30101	6249
<input checked="" type="checkbox"/>	n-nonane	4.4283	0.33797	6996
<input checked="" type="checkbox"/>	n-decane	4.9126	0.37493	7742
<input type="checkbox"/>	ethylene	0.9686	0.07392	1599
<input type="checkbox"/>	propylene	1.4529	0.11089	2330
<input type="checkbox"/>	Hexanes Plus	3.21755	0.24557	5129
<input checked="" type="checkbox"/>	carbon dioxide	1.5195	0.11597	
<input type="checkbox"/>	hydrogen sulfide	1.1767	0.08981	630
<input checked="" type="checkbox"/>	nitrogen	0.9672	0.07382	
<input checked="" type="checkbox"/>	oxygen	1.1048	0.084322	

Data Source: GPA Standard 2145-16 (FPS)

Transfer Close Print Help

Diablo Analytical EZReporter 3.0 Software
NGA Physical Property Update Procedure

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Manual Revision 20170119-1458

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Update Procedure

Introduction

This guide describes how to update existing EZReporter 3.0 Natural Gas Analysis (NGA) and Natural Gas Liquids/Extended Fraction Analysis (NGL) configurations with the GPA Standard 2145-16 component physical properties (physical constants).

Disclaimer

Diablo Analytical provides this update procedure and the physical property data sources as a courtesy to our customers. However, it is the customer's responsibility to ensure that the physical properties and other settings in their configuration are correct and that the results generated by the EZReporter software are correct and valid for their intended use.

Please review the License Agreement and Limited Warranty displayed at the beginning of the printed manual for Diablo's limits on liability.

Important Information about EZReporter 3.0

EZReporter 3.0 was replaced by EZReporter 4.0 in 2015, and no new development or enhancements will be made to this older version of software. We are providing the GPA 2145-16 data source as a courtesy to our customers. However we highly recommend that you consider upgrading to EZReporter 4.0, which includes a number of additional tools to help you manage the migration to GPA 2145-16. Please contact Diablo Analytical for information about upgrading your EZReporter 3.0 licenses to EZReporter 4.0.

IMPORTANT: You must install EZReporter 3.0, version 3.0.4.4 or later in order to access the GPA 2145-16 data source. You can download this version of the software from the "Previous Versions" download page on the Diablo Analytical web site:

Make sure you choose the correct download for the chromatography data system you are using.

<https://diabloanalytical.com/products/software/ezreporter/previous-versions/>

About GPA Standard 2145-16

The GPA 2145-16 standard is published by the GPA Midstream Association and contains the component physical properties used to calculate other properties of natural gas as defined in standards such as GPA 2172, GPA 2186, GPA 2286, and others. The GPA 2145-16 standard was released in 2016 and becomes effective in January of 2017. It combines and updates component physical properties from GPA 2145, GPA TP-17, and the GPSA Engineering Data Book into one data source.

We highly recommend that you purchase a copy of this standard from the GPA Midstream Association. You can download it for free if you are a member of either the GPA Midstream Association or the Gas Processors Suppliers Association (GPSA).

GPA Midstream Association

For more information on GPA Standard 2145-16, you should contact the Gas Processors Association:

6526 East 60th Street
Tulsa, Oklahoma 74145

Phone: 918-493-3872

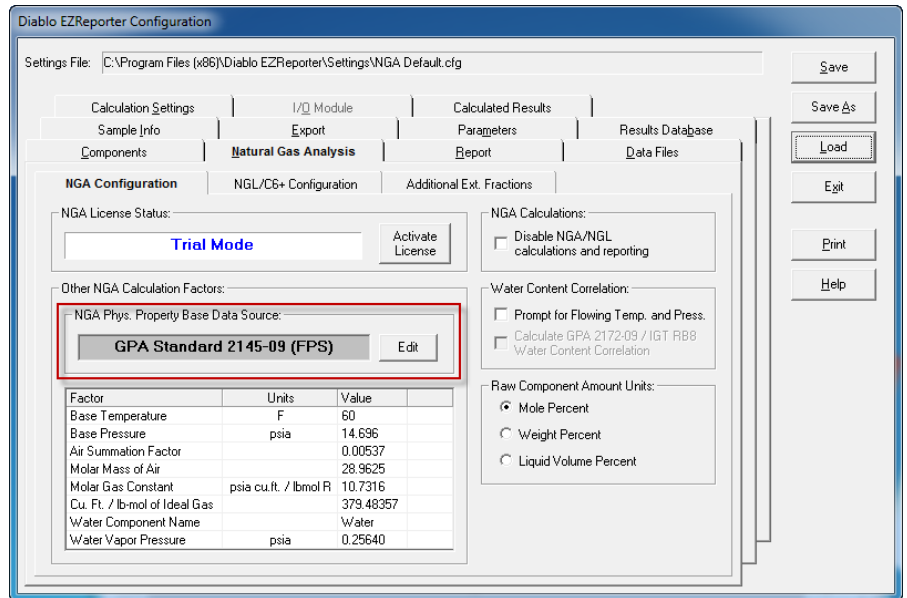
Web: www.gasprocessors.com

E-Mail: gpa@gasprocessors.com

Update your existing configuration files

To update the physical constants in an existing configuration file, you must first load that configuration by clicking the “File > Load Configuration” option in the main menu. Then:

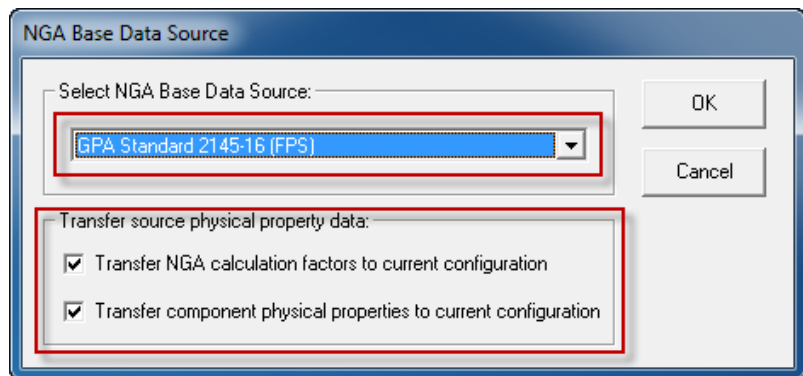
1. Open the EZReporter configuration window by clicking on the “Tools > Edit Configuration...” menu option
2. Click the “Save As” button, to save the current configuration under a new file name. This will allow you to preserve your existing configuration.
3. Switch to the “Natural Gas Analysis” tab and click the “Edit” button to change the “NGA Phys. Property Base Data Source”:



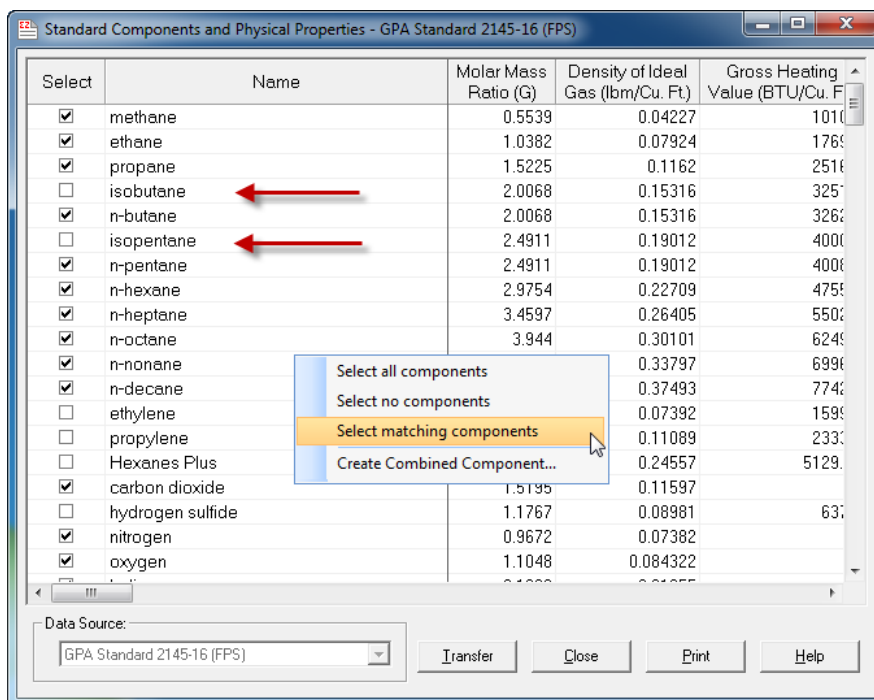
- Select "GPA 2145-16 (FPS)" from the NGA Data Source List:

NOTE: It will be located at the **bottom** of the list.

Make sure that the two "Transfer" checkboxes are also checked, and then click the "OK" button to proceed with the physical property update:



- The standard components in the GPA 2145-16 data source will be displayed. For each component in this table that is present in your configuration, click the checkbox in the left-most column so that a checkmark is displayed.

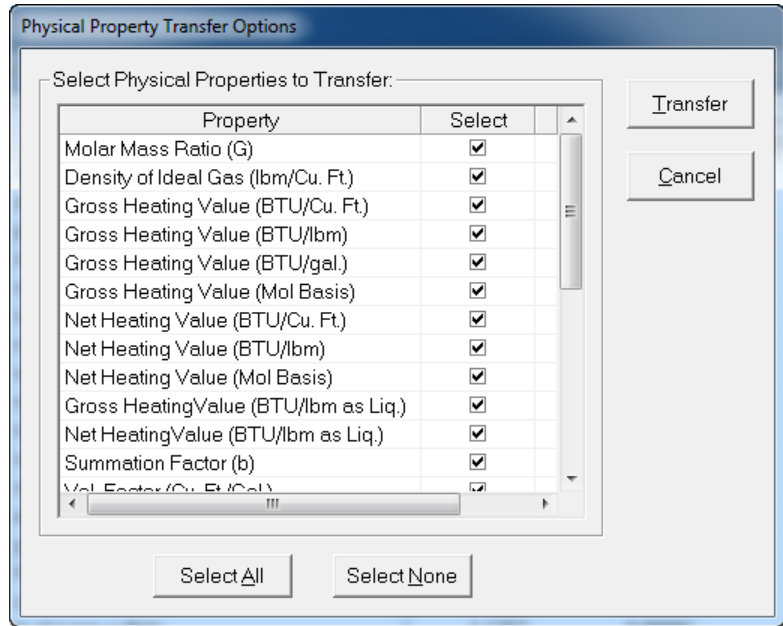


Hint: If you right-click the mouse with the cursor located anywhere on the standard component table a context menu will pop up. The pop-up menu has an option to select “matching” components. If you click this option, any component in the table that matches a component name in the current configuration will be checked automatically. However, if you have renamed any of the components in your configuration you will still have to check the corresponding component in the table manually.

Important: Several standard component names were changed in GPA 2145-16 from previous revisions of GPA 2145, TP-17, and the GPSA Engineering Data Book. In the example above, “isobutane” and “isopentane” were changed from “i-butane” and “i-pentane” as they were listed in GPA 2145-09.

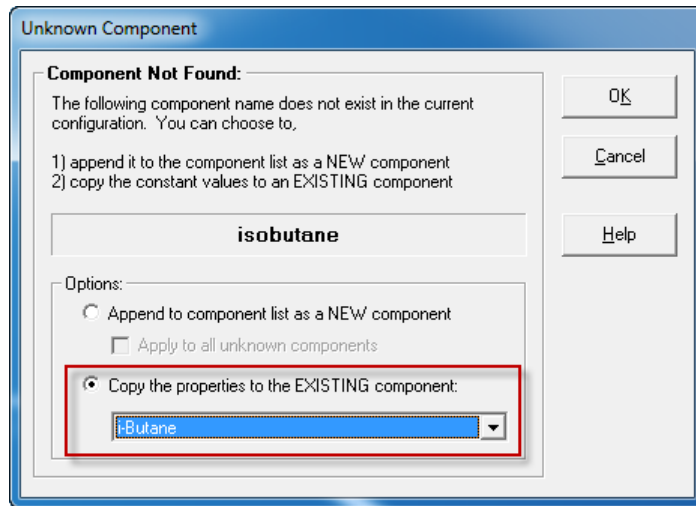
You will have to carefully review and check the names of all components that are in your configuration whose name has been changed in GPA 2145-16.

- When you are finished selecting the components, click the “Transfer” button to begin to transfer the physical property values for the selected components to your configuration. A dialog box will be displayed allowing you to choose which physical properties to transfer. Most users will want to leave all of the properties checked. Click the “Transfer” button to continue.



7. If the component names in your configuration match the standard component names as shown in this table, then your configuration will be updated without requiring further input.

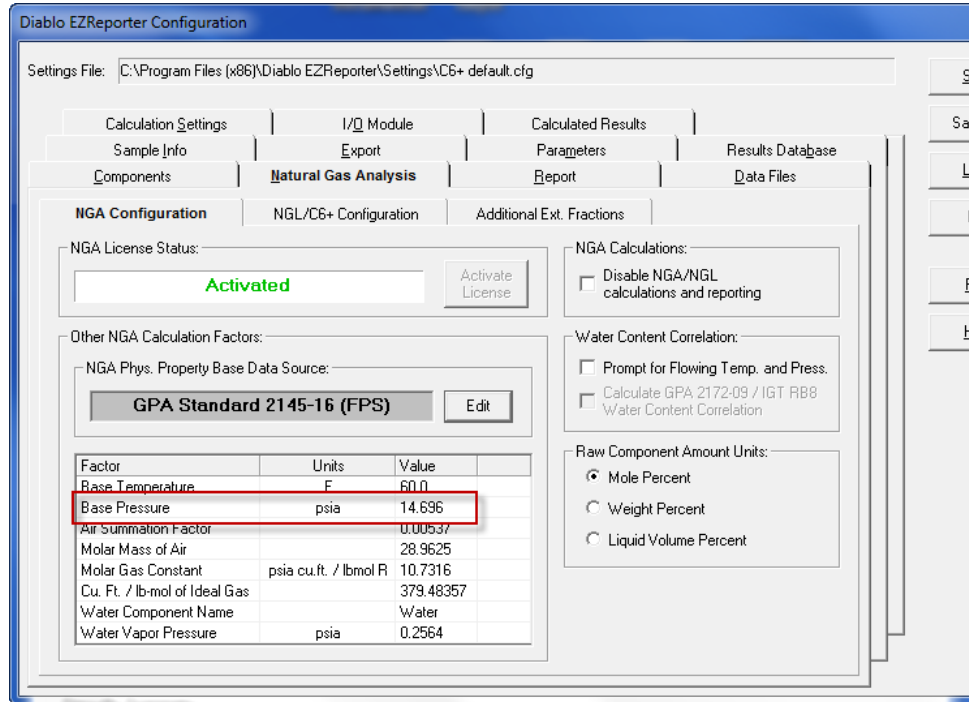
However, if any of the component names in your configuration don't match the standard component names ("i-butane" vs. "isobutane", for example). Then the "Unknown Component" dialog box is displayed.



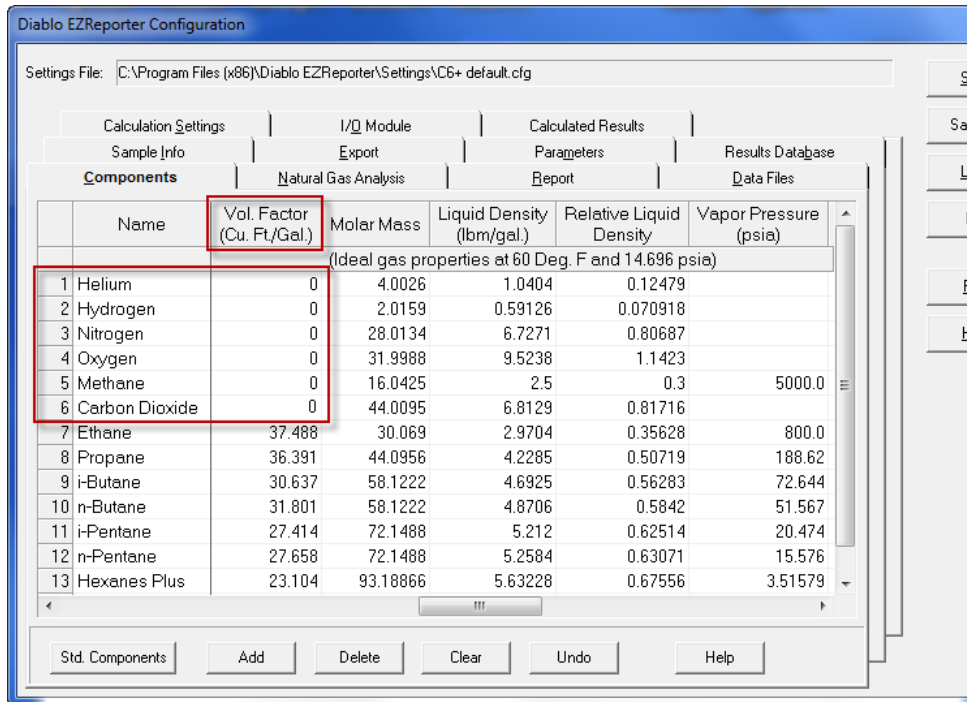
Select the "Copy the constants to an EXISTING component" option, and then choose the correct component name from your configuration from the list box. Click "OK" to transfer the standard physical properties to the selected component in your configuration.

You will have to repeat this process for each unknown component in your configuration file.

- The update procedure will reset the pressure base back to the standard value of 14.696. If you are using a different pressure base, switch to the “Natural Gas Analysis” tab and change the base pressure setting to the desired value in psia (14.73, for example):



- The update procedure will also reset the component volume factors used to calculate GPM. If you report GPM using only the C2+ or C3+ components, then you will need to set the volume factor for Methane, CO₂, Nitrogen, and any other “light” components back to 0. Switch to the “Components” tab, and scroll the table until you find the column labeled “Vol. Factor (Cu.Ft./Gal)”. Change this setting to 0 for Methane, Nitrogen, CO₂, and any other components you want to exclude from the GPM calculation:



10. Click the “Save” button to save your updated configuration.

11. It is always a good idea to save backup copies of your configuration files. You can do this automatically by selecting, “Backup current configuration files...” from the EZReporter “Tools” menu.

Important: You will need to repeat this migration procedure for each configuration file that you use.

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