Diablo BTU Calculator 2.0

GPA 2145-09 Migration Guide

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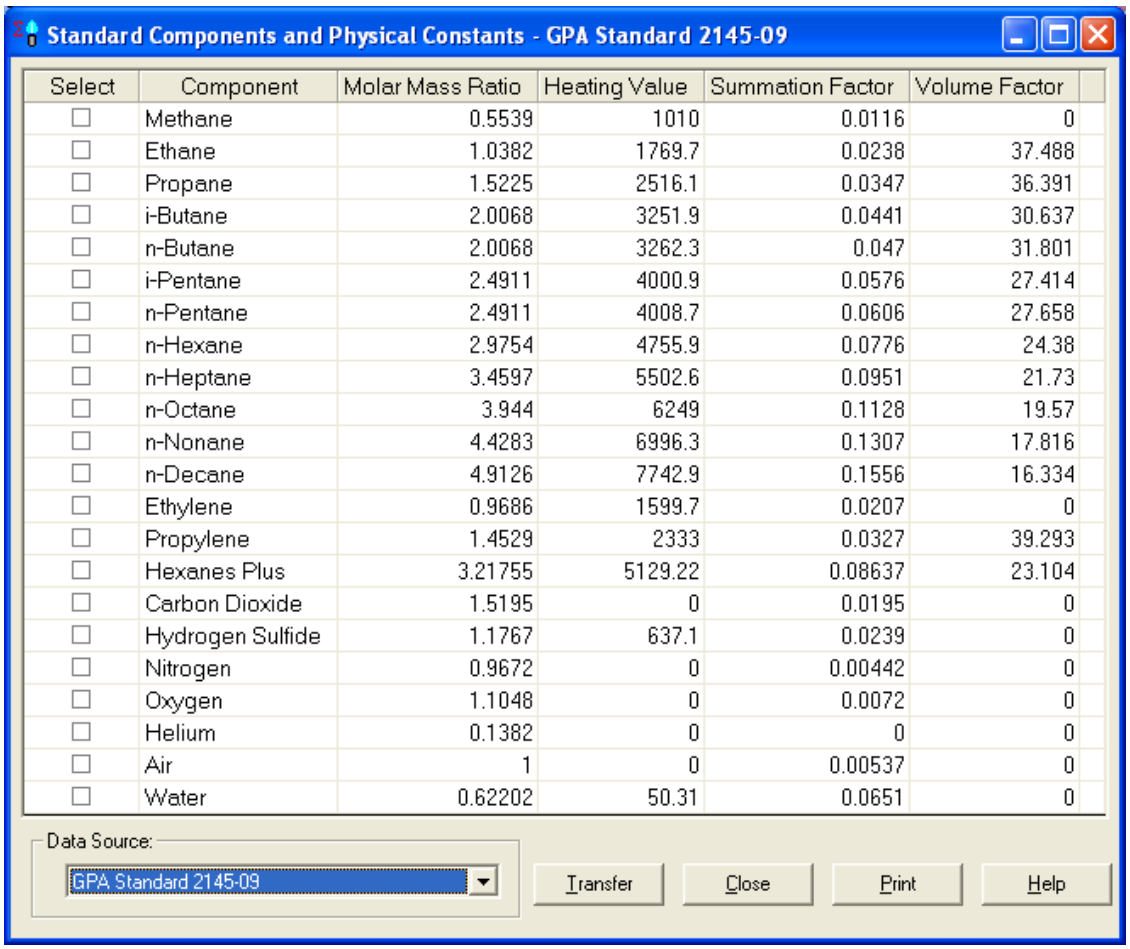

Select	Component	Molar Mass Ratio	Heating Value	Summation Factor	Volume Factor
☐	Methane	0.5539	1010	0.0116	0
☐	Ethane	1.0382	1769.7	0.0238	37.488
☐	Propane	1.5225	2516.1	0.0347	36.391
☐	i-Butane	2.0068	3251.9	0.0441	30.637
☐	n-Butane	2.0068	3262.3	0.047	31.801
☐	i-Pentane	2.4911	4000.9	0.0576	27.414
☐	n-Pentane	2.4911	4008.7	0.0606	27.658
☐	n-Hexane	2.9754	4755.9	0.0776	24.38
☐	n-Heptane	3.4597	5502.6	0.0951	21.73
☐	n-Octane	3.944	6249	0.1128	19.57
☐	n-Nonane	4.4283	6996.3	0.1307	17.816
☐	n-Decane	4.9126	7742.9	0.1556	16.334
☐	Ethylene	0.9686	1599.7	0.0207	0
☐	Propylene	1.4529	2333	0.0327	39.293
☐	Hexanes Plus	3.21755	5129.22	0.08637	23.104
☐	Carbon Dioxide	1.5195	0	0.0195	0
☐	Hydrogen Sulfide	1.1767	637.1	0.0239	0
☐	Nitrogen	0.9672	0	0.00442	0
☐	Oxygen	1.1048	0	0.0072	0
☐	Helium	0.1382	0	0	0
☐	Air	1	0	0.00537	0
☐	Water	0.62202	50.31	0.0651	0

Diablo Analytical BTU Calculator 2.0 Software

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Manual Revision 20080903-1111

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Contents

Migration Procedure 1

Introduction 1
Disclaimer 1
Gas Processors Association 1
Migration Methods 1
Method 1: Update your existing configuration files 2
Method 2: Edit the default GPA 2145-09 configuration file 4

Index 7

Migration Procedure

Introduction

The Gas Processors Association (GPA) released the new GPA 2145-09 Standard, "Table of Physical Properties for Hydrocarbons and Other Compounds of Interest to the Natural Gas Industry" in August of 2008. This migration guide describes how to update the physical property tables in your current Diablo BTU Calculator 2.0 configurations to the new GPA 2145-09 physical property values.

Disclaimer

Diablo Analytical provides this migration procedure and the physical constant data sources as a courtesy to our customers. However, it is the customer's responsibility to ensure that the physical constants and other settings in their configuration are correct and that the results generated by the BTU Calculator software are correct for their application.

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

Gas Processors Association

For more information on GPA Standard 2145-09, 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

Migration Methods

There are two migration methods that we recommend:

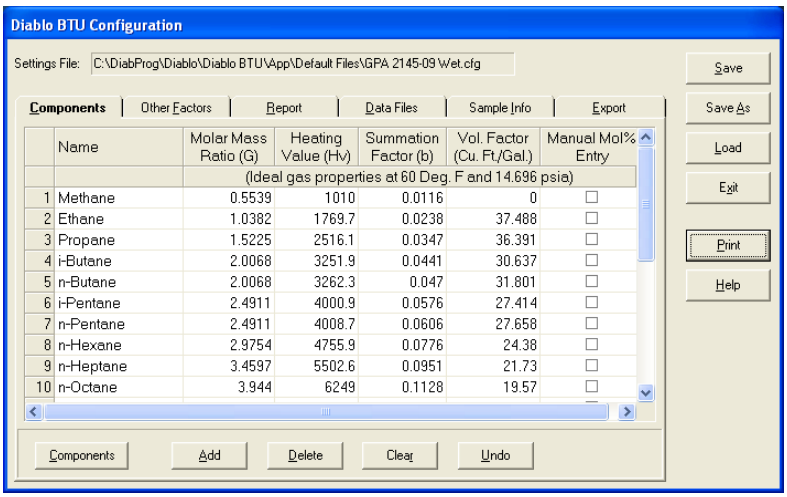
Method 1: Update your existing configuration files with the new GPA 2145-09 physical property values. This method is recommended for most users, particularly those users who have customized their configuration files to any extent. See "Method 1: Update your existing configuration files" on page 2.

Method 2: Start with the default GPA 2145-09 configuration files and edit them to meet your specific needs. This method is recommended for new BTU Calculator users, or current users who have made only minimal modifications to their configuration. See "Method 2: Edit the default GPA 2145-09 configuration file" on page 4.

Method 1: Update your existing configuration files

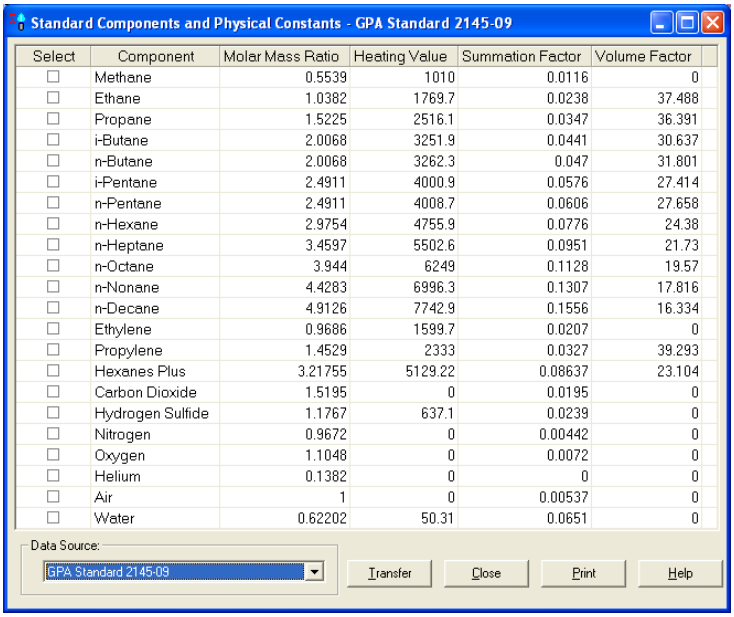
This migration method is recommended for most users, particularly those users who have customized their configuration files to any extent.

1. Open the BTU Calculator configuration window by clicking on the "Tools > Edit Configuration…" menu option.



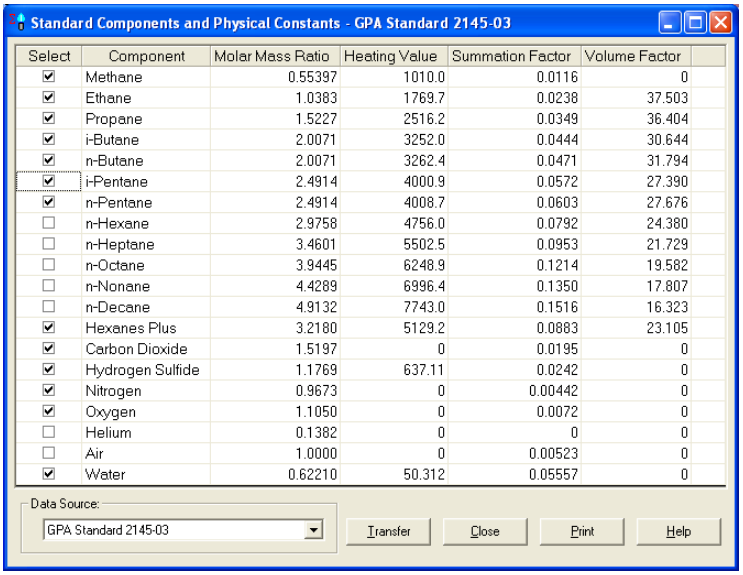
2. Click the "Save As" button, to save the current configuration under a new file name. This will allow you to preserve your existing configuration.

3. Click the "Components" button to display the standard components and physical properties window.



4. In the "Data Source" list box choose the "GPA Standard 2145-09" option. A data table will be display containing the components and their physical properties as defined in the GPA 2145-09 standard.

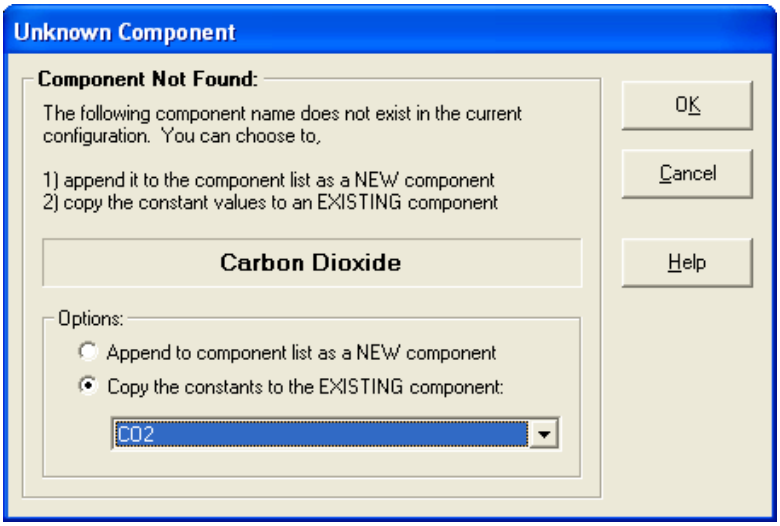
5. For each component in this table that is present in your configuration, click the checkbox in the left-most column so that a checkmark is displayed.



6. When you are finished selecting the components, click the “Transfer” button to transfer the GPA 2145-09 physical property values to your configuration.

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.

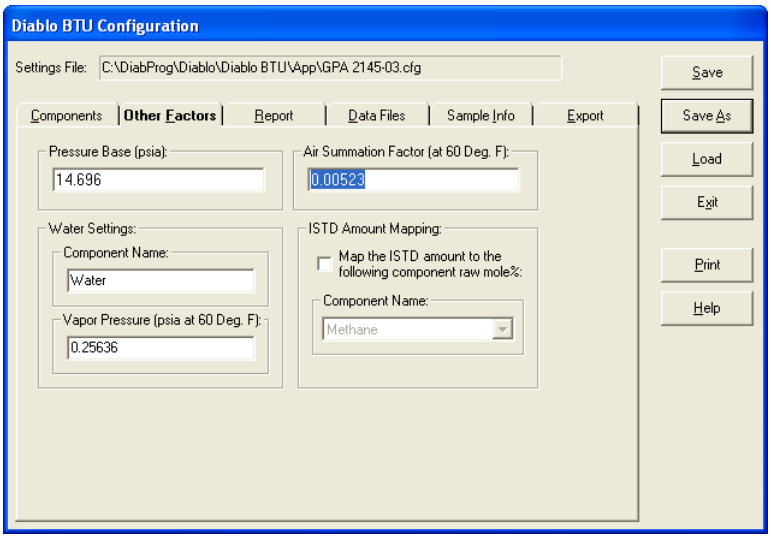
   However, if any of the component names in your configuration don’t match the standard component names (“CO2” vs. “Carbon Dioxide”, for example). Then the “Unknown Component” dialog box is displayed.



   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.

8. Switch to the “Other Factors” tab of the configuration editor window.



9. Change the “Air Summation Factor” to its new value of: **0.00537**
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.

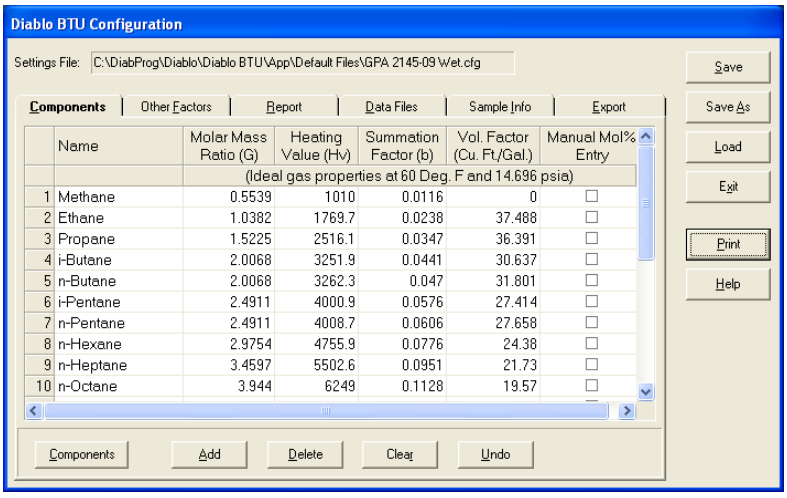
Important: You will need to repeat this migration procedure for each configuration file that you use.

Method 2: Edit the default GPA 2145-09 configuration file

This migration method is recommended for new BTU Calculator users or current users who have made only minimal modifications to their configuration.

Important: If you have made more than a few minor changes to your configuration you should use “Method 1” described above to migrate your configuration.

1. Open the BTU Calculator configuration window by clicking on the “Tools > Edit Configuration…” menu option.



2. Click the “Print” button to print your current configuration. This will allow you to confirm that you have correctly edited the default GPA 2145-09 configuration.
3. Click the “Load” button and choose one of the default GPA 2145-09 configuration files: either “GPA 2145-09.cfg” or “GPA 2145-09 Wet.cfg” (which includes water as a component and generates both dry and saturated results).
4. Click the “Save As” button, to save the default configuration under a new file name. This will allow you to preserve your existing default configuration file and assure that your new configuration won’t be overwritten if you ever upgrade the BTU Calculator software.
5. Edit the default configuration so that it provides the desired functionality for your application. Use the printed copy of your configuration to help guide you. See the Diablo BTU Calculator 2.0 Reference Manual for information on the various configuration settings.

   In particular:

   - In the “Components” tab, edit any component names that need to match the names from the Cerity or EZChrom method/report.
   - In the “Other factors” tab, change the “Pressure Base” to the correct value for your location.
   - Edit the “Report”, Data Files”, “Sample Info”. and “Export” tabs to produce the desired results.
6. When you have finished editing the configuration, press the “Save” button to save your new configuration.
7. It is always a good idea to save backup copies of your configuration files.

Index

D

Disclaimer 1

G

Gas Processors Association 1

I

Introduction 1

M

Method 1: Update your existing configuration files 2
Method 2: Edit the default GPA 2145-09 configuration file 4
Migration Methods 1
Migration Procedure 1