

Effective Software Without the High Price



AQUALibrium 3.0 - Now Unleashed

AQUALibrium 3.0 is a software package for systems containing water, hydrogen sulfide, carbon dioxide, and light hydrocarbons. It has a well-deserved reputation for being amongst the most accurate software for equilibrium calculations in these systems, especially for acid gas + water systems.

What's New

The following items are new in this version over AQUALibrium 2.0:

- New calculation routines
- Phase equilibrium calculations for mixtures that do not contain water
- Calculations of the enthalpy, heat capacity, viscosity and thermal conductivity
- Win32 MDI Interface
- Project and file management of AQUALibrium calculations
- Documentation of AQUALibrium projects
- Exporting of the AQUALibrium projects to other Windows applications

Calculations

There are six (6) major groups of calculations:

1. Pressure-Temperature Flash
2. Water Content
3. Vapour-Aqueous Liquid Dew Point (Pressure or Temperature)
4. Non-Aqueous Liquid Dew Point Pressure (Normal or Retrograde)
5. Non-Aqueous Liquid Bubble Point
6. Solubility

Components

Currently, there are eleven components built into the programs:

- | | | |
|---------------------|-------------|----------------|
| 1. Water | 5. Propane | 9. Isobutane |
| 2. Hydrogen Sulfide | 6. n Butane | 10. Isopentane |
| 3. Carbon Dioxide | 7. Methane | 11. n-Pentane |
| 4. Ethane | 8. Hexane | |

The seemingly small component list currently in the program (compared with general purpose simulators, for example) is because the necessary binary systems have been thoroughly studied by Gas Liquids Engineering Ltd. and based on this work, has confidence that AQUAlibrium is the best available software for these systems.

Installation

The AQUAlibrium Installation Wizard will lead you through the installation process. System Requirements:

- Pentium Processor
- Microsoft Windows 98/2000/Me/NT/XP
- 10 megabytes of space on hard drive
- Options: In order to make best use of AQUAlibrium 3.0 the following applications should be installed:
 - Microsoft Word 97® or later
 - Microsoft Excel 97® or later

VLEFLASH

VLEFlash is the ideal tool for professionals in the natural gas / petroleum industry. You can now easily calculate fluid properties, and use the results to size equipment and find dew points in accordance with API 14.1 recommendations (June 2001)! Works great with a standard gas analysis.

Now you can use the results of the program to:

- ✓ **Find Dew Points from your gas analysis**
- ✓ **Calculate the temperature drop across a control or relief valve**
- ✓ **Find line heater duty**
- ✓ **Size separators**
- ✓ **Size lines and pumps**
- ✓ **Estimate compressor horsepower**
- ✓ **Calculate the vapour pressure of your LPG bullet or stock tank liquids**
- ✓ **And Much More!**

VLEFlash is a Windows® based program, capable of the following types of calculations:

- P-T Flash
- Dew Point Calculation
- Bubble Point Calculation
- Temperature-Entropy Flash
- Pressure-Enthalpy Flash
- Temperature-Density Flash

VLEFlash also returns many fluid properties, such as:

Equilibrium

- Mole Weight/Mole Mass
- Density
- Compressibility Factor
- Enthalpy
- Entropy
- Isobaric Heat Capacity
- Heat Capacity Ration (Cp/Cv)
- Speed of Sound
- Joule-Thompson Coefficient

Transport

- Viscosity
- Thermal Conductivity



VLEFlash allows you to select the units you are comfortable with (SI or conventional), and produce attractive printouts of your results, complete with your own company's logo! You can also easily export your results to Microsoft Excel® for easy incorporation into your graphs, spreadsheets, and reports! **VLEFlash** also allows you to save and open fluid composition files; get answers quickly when you need them! This feature also allows you to string together the flashes in your process.

PDrop is a handy tool for quick pipeline sizing purposes. For gas pipelines you can now compare, at the touch of a button, the results of:

- Weymouth
- Panhandle A
- Panhandle B
- IGT
- AGA
- Darcy (also used for liquid line sizing)

For mixed liquid and vapour flowlines, you can compare the results of:

- Lockhart-Martinelli (recommended for plant piping)
- Beggs & Brill (recommended for pipelines of known slope)

The benefit of using these industry accepted correlations is that validity has been accepted to be conservative. You can verify results by hand calculations of published correlations rather than rely on someone's proprietary database. Performing Beggs & Brill calculations by hand will make you appreciate the time savings that **PDrop** gives you.

With the FlowPhase input screen, you:

- do not need to make an estimate of compressibility factor 'Z'. The program calculates Z for you with an input of the gas gravity or molecular weight and operating pressure.
- easily convert all common flow measurement units at your fingertips whether you're going from BPD to LPM or Nm³/hr to MMscfd.
- have a pipeline diameter determined immediately when communicating with field personnel, instead of "tomorrow".

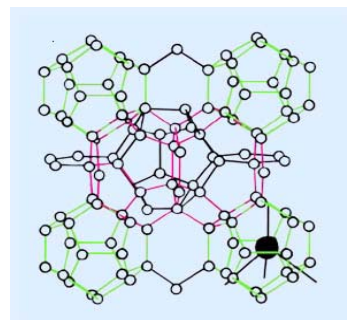
CompHP is a compressor horsepower calculator. It replaces the cardboard circular slide rule that just about every natural gas engineer has received from a compressor vendor at some point; however, in addition to a horsepower calculation, with **CompHP**, you can also:

- see the effect of suction temperature on compressor horsepower
- see how gravity and diluent content affect compressor capacity
- calculate intercooler and aftercooler heat duties
- determine the effect of valve pressure drop on compressor capacity at low suction pressures.

For a limited time, **CompHP** is included at no charge with all **PDrop** orders.

Hydrate Plus allows you to predict hydrate formation temperatures and minimize inhibitor injection costs with one easy-to-use utility! Provide **Hydrate Plus** with a gas composition and you can plot Hydrate formation curves, or solve directly for the hydrate formation temperature or pressure.

Hydrate conditions can be calculated based on the widely accepted Baillie-Wichert method, or the Mann et al equilibrium method. Methanol injection rates are calculated using the method of Dr. John J. Carroll. You can solve directly for the hydrate formation temperature and pressure, or results can be plotted to Microsoft Excel® compatible hydrate formation curves.



FLOWPHASE ORDER INFORMATION

	Copies	US\$	CDN\$	Comments
VLE Flash	1—4	445.00	495.00	
	5—9	400.00	445.00	
Hydrate Plus	1—4	576.00	640.00	
	5—9	518.00	576.00	
PDrop	1—4	261.00	290.00	
	5—9	235.00	261.00	
CompHP		86.00	95.00	Free with the purchase of VLEFlash and PDrop
AQUAlibrium		865.00	965.00	

The user(s) will require an **“Unlock Code”** to permanently operate the **VLEFlash** software.

Please provide the following information:

- Click on the **“License”** button
- Please e-mail the **“Registration Number”** and **“User Name”** to sales@flowphase.com.

4 Easy Ways To Order

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