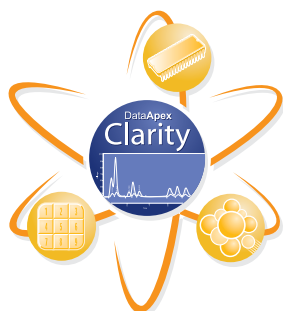


Clarity NGA Extension



Software module for Natural Gas Analysis

NGA Extension provides tools for automated and quick Natural Gas and Liquefied Petroleum Gas data processing in Clarity.

Calculates gas properties in compliance with internationally recognized standards ISO 6976-95, ASTM D 3588-98, GPA 2172-09 for Natural Gas or ASTM D 2421-02, ASTM D 2598-02, ISO 8973-97 / EN589-04 for Liquefied Petroleum Gas.

The gas properties can be calculated across multiple signals and even across multiple chromatograms. Detailed list is on the next page.

It is possible to include additional norms based on customers feedback.

NGA Extension is an optional addition to Clarity software, it cannot be used as a standalone program.

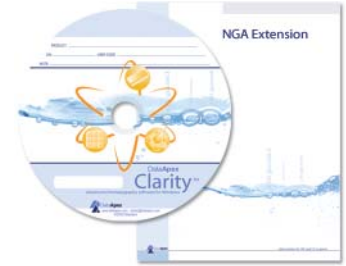
Clarity NGA Extension

Software module for natural gas analysis calculations

The NGA Extension (p/n A32) is an optional fully integrated addition to Clarity software. It can be ordered as a part of new software or as an extension to existing software.

The Clarity Chromatography Software is designed to acquire and evaluate data from up to four multidetector chromatographs at a time (four independent timebases).

The NGA mode is selectable for any Instrument within a station. The NGA Extension is also compatible with Clarity Offline software.



Features - calculated properties according to norms

ISO 6976-95

- Compression Factor (for real gas only)
- Mean Molecular Weight
- Relative Density
- Density
- Superior Calorific Value
- Inferior Calorific Value
- Wobbe Index

ISO 8973-97 / EN589-04

- Absolute Vapour Pressure (for Molar and Mass Percent only)
- Gauge Vapour Pressure (for Molar and Mass Percent only)
- Octane Number

ASTM D 3588-98 and GPA 2172-09

- Molar Mass
- Molar Mass Ratio
- Compressibility Factor
- Relative Density
- Ideal Heating Value (also in BTU - British Thermal Units)
- Real Heating Value (also in BTU - British Thermal Units)

ASTM D 2421-02 and D 2598-02

- Vapor Pressure
- Relative Density
- Motor Octane Number

Specification

- Part No.:** A32
- Related products:** Clarity (p/n C50)
Clarity Offline (p/n C59)
GC and AS Control module (p/n A23 and A26)

The screenshots show the Clarity NGA Extension software interface. The main window displays a chromatogram with peaks labeled for Ethane, Propane, and i-butane. Below the chromatogram, there are several data tables and settings panels.

Result Calculations Table (ISO 6976-95):

Property	Value	Units
Gas	Ideal	
Mean Molecular Weight	18.348	
Relative Density	0.5643	
Density	0.5643	kg/m ³
Superior Calorific Value	870.07	kJ/mol
Inferior Calorific Value	783.36	kJ/mol
Wobbe Index	45.96	kJ/m ³

ASTM D 3588-98 and GPA 2172-09 Results Table:

Property	Value	Units
Gas	Ideal	
Mean Molecular Weight	16.345	
Relative Density	0.5643	
Density	0.5643	kg/m ³
Superior Calorific Value	870.07	kJ/mol
Inferior Calorific Value	783.36	kJ/mol
Wobbe Index	45.96	kJ/m ³

ASTM D 2421-02 and D 2598-02 Results Table:

Compound Link	Gas	Mean Molecular Weight	Relative Density	Density [kg/m ³]	Superior Calorific Value [kJ/mol]	Inferior Calorific Value [kJ/mol]	Wobbe Index [kJ/m ³]
ngs-1_3_2009_5_42_17_PPH	Warnings	16.345	0.5643	0.5643	870.07	783.36	45.96
ngs-1_3_2009_5_42_17_PPH	Warnings	17.015	0.5151	0.7534	917.09	827.05	45.45

Settings Panel: Shows NGA Method Name (Natural Gas ISO 6976-95), Chromatogram Name (ngs-1_3_2009_5_42_17_PPH), and various calculation settings like Source Amount (Molar Percent) and Calorific Value Calculation Basis (Molar Basis).

