

# Clarity Chromatography Software

## NGA – Natural Gas Analysis



# NGA – natural gas analysis

## § Natural or LPG Gas Analysis

## § Calculates the Calorific values according to

- § Natural Gas ISO 6976-95
- § Natural Gas ASTM D 3588-98 and GPA 2172-09
- § LPG ASTM D 2598-02 / 2421-02
- § LPG ISO 8973-97 / EN589-04

## § Multiple detectors supported

## § Individual or Summary results

## § Export of results

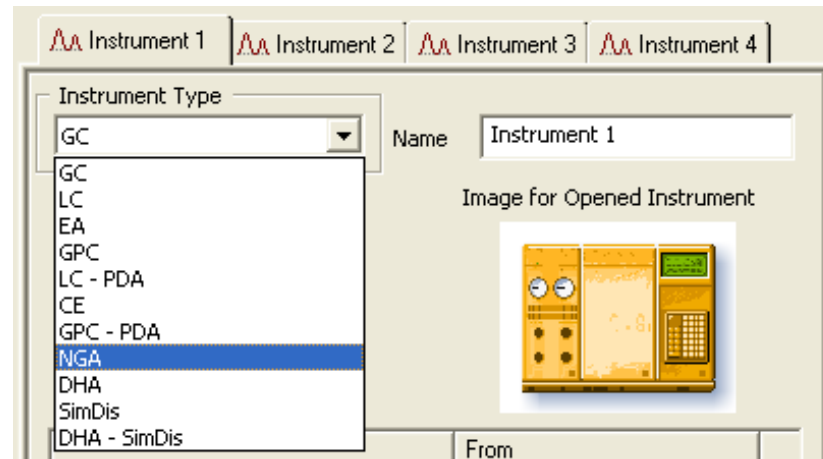
# NGA – system configuration

## § Instrument type NGA

§ supports control modules as GC

## § Instrument type DHA, SimDis, ..

§ for future extensions



# NGA – Settings

§ New NGA Result tab in chromatogram window

## § NGA Settings

§ 1) Select method

§ 2) Edit Link Table

§ 3) Choose a Norm and

§ set preferences

Time [min.]

NGA Settings

NGA Method: C:\Clarity\_2.7\NGA\test.nga

1 New Open... Save Save As...

Link Table

2 Edit Link Table...

Choose a Norm: Natural Gas ISO 6976-95

3

Source Amount Molar Percent

Calorific Value Calculation Basis Molar Basis

Temperatures Combustion 15°C / Metering 15°C

Ideal / Real Gas Real Gas

Ideal Heating Type Wet Basis

Results NGA Results NGA Summary

Overlay

# NGA – Result table

- § Display the amounts and Amount% calculated over all signals
- § Shows warnings for individual compounds
  - § compound name not found in NGA table
  - § compound not used in selected norm
  - § same compound used on several signals

NGA Result Table (Instrument 1 - 1\_9\_2009 5\_42\_17 PM)

	Compound Name	Signal	Amount [Mole %]	Amount [Molar %]
1	Methane	FID	98,816	97,56
2	Ethane	FID	0,026	0,03
3	Propane	FID	0,000	0,00
4	i-Butane	FID		-
5	n-Butane	FID		-
6	Neopentane	FID		-
7	i-pentane	FID		-
8	n-pentane	FID		-
9	hexane	FID	0,003	?
10	Nitrogen	TCD	2,448	2,42
11	CO2	TCD	0,025	?
			101,318	100,00

For Help, press F1

# NGA – Result calculations

§ Shows the calculated results

§ Shows the method and norm info

Results for Norm: Natural Gas ISO 6976-95  
Chromatogram Name: 2nd Measurement  
Norm Table Signature Status: ✓ Valid (Last Signed by: DataApex, Ltd.)

Result Calculations

Property	Value	Units
Compound Links	3 Warnings	
Gas	Real	
Compression Factor	0,9981	
Mean Molecular Weight	16,345	
Relative Density	0,5652	
Density	0,6926	kg/m3
Superior Calorific Value	870,07	kJ/mol
Inferior Calorific Value	783,35	kJ/mol
Wobbe Index	49,04	MJ/m3

For Help, press F1

# NGA - Calibration

## § Clarity calibration need to be created

§ Compound names from the NGA Norm table are offered in calibration

§ Link Table allows for linking other names to those listed in Norm table

§ In multisignal chromatograms each compound could be used on one signal only

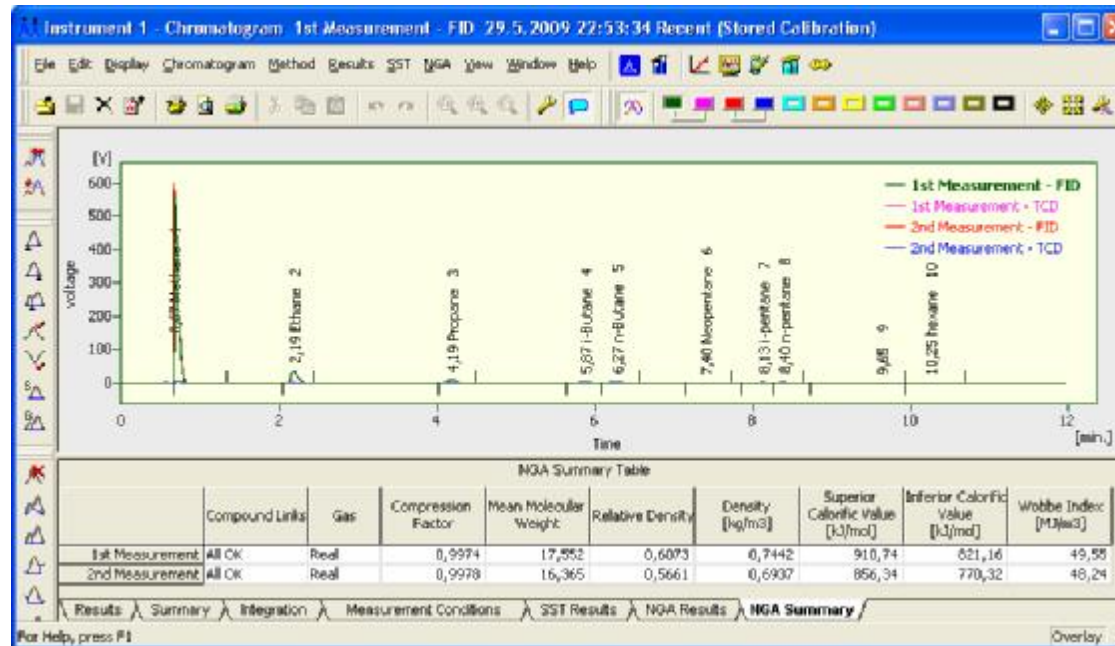
The screenshot shows the 'Instrument 1 - Calibration' software window. The main window displays a 'Calibration Summary Table' with columns for 'Used', 'Compound Name', 'Reten. Time', 'Left Window', 'Right Window', 'Peak Type', 'Peak Color', 'LOD', 'LOQ', 'RB', 'Resp. Factor', 'Response', and 'Amount'. A red circle highlights the 'Neopentane' row. A 'Link Table' dialog box is open on the right, showing a table with 'Compound Name' and 'Name in Norms' columns. The dialog box contains the following data:

Compound Name	Name in Norms
1 Propane	Propane
2 acetone	Water
3 air	Air

The 'Link Table' dialog box also has buttons for 'Add...', 'Remove', 'OK', 'Cancel', and 'Help'.

# NGA - Summary

§ NGA results could be shown for all chromatograms in overlay





# NGA – reports/exports

§ Options for NGA appear in the Report Setup and in the Export Data windows

