

# SRA ProChem

## Software for on-line analysis



### SRA ProChem a user interface which expands the Agilent Chemstation software or EZChrom functionality in the on-line applications

#### Supervision and automation of ChemStation

SRA ProChem is a software user interface for supervision and automation of Agilent Chemstation for uninterrupted analysis sequence. It allows easy sequence automation and graphical tools for posting results in tables and trends. Standard and customized calculations are available for specific application. With ProChem is possible the management of sampling streams (max. 16), the acquisition of external analogical signals, management of alarms, transmission by connection 4-20 mA or Modbus.

#### Management of the analysis

Programming of the analyses via sequence (to 999 lines) allowing to define for each line, the stream to be analyzed, method to be used and a time of sweeping pre inject. Thus the software anticipates commutation in order to reduce the duration of analysis. Three operating process:

- The operator programs a certain number of analyses.
  - The analyses are connected uninterrupted.
  - The sequences are programmed at definite hours and can connect various analyses.
- Sequence is programmable during the day. i.e. Sequence 1 (4 analysis of stream at 12:00AM, Sequence 2 (2 analysis stream 2 & 2 analysis stream 3) at 6.30PM, etc.

#### Management of the sampling system

Piloting up to 16 streams of sampling by simple electro-valves, by valves multi-positions either by advance and reading BCD pneumatic or electric VICI®Valco type. Possibility to drive a sampling pump or ejector directly piloted by ProChem. Useful if your sample is at atmospheric pressure or far from the analyzer. Sampling time can be set for each stream. Include the possibility to perform an atmospheric pressure equilibration before injection. Useful when your sample pressure change or is different between streams. Dwell time for equilibration is programmable.

#### Management of the analogical inputs

At the injection time, ProChem can read external results from 8 analogical entries (ex: Pressure, temperature, flow, or any other value from sensor or analyzer) via analogical inputs (4-20mA, 0-20 mA, 0-10V, WEST 8010-Modbus). The value of these entries is read permanently and is safeguarded with the data of the analysis. It is thus possible to visualize these values after each analysis. These values can be then subject of post-analytical calculations.

#### Display of the results

ProChem recovers calculated data from the Chemstation : Retention times, Concentration, Units, Areas, Other external data (ie.g Temperature, pressure..), ProChem gives customized peak calculation e.g [Peak concentration x Sample Pressure] (recovered Pressure value from an external sensor). These new calculated values are included in the final Chemstation report. Results can be posted in ProChem in the form of window, in form of chronological table, with post averages and RSD, in the form of trends (8 selections), where are displayed the various results of the analysis for each constituent.

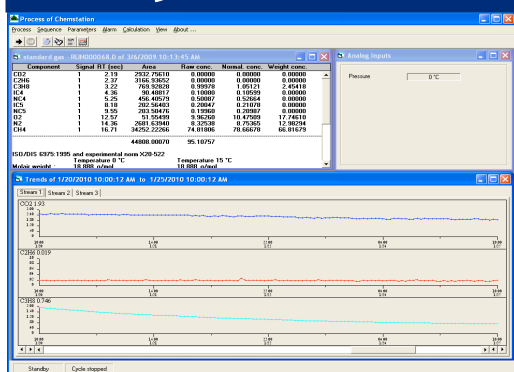


Fig.1 – ProChem allows you to display a table with all the results and then exportable to Excel®. A trend diagrams (up to 8). Average value calculation on hour, days or other variable time scale basis (0-9999h)

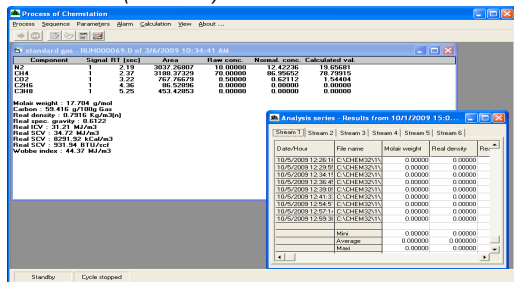


Fig.2 – ProChem gives customized peak calculation. These new calculated values are included in the final Chemstation report

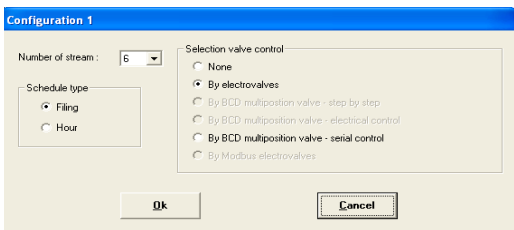


Fig.3 – ProChem manages and controls up to 16 streams using multi-stream valves or electro-valves

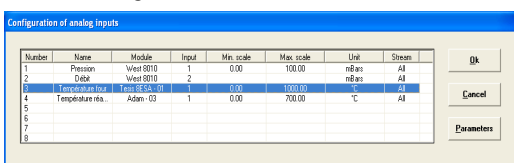


Fig.4 – ProChem can read external results, via analogical inputs (4-20mA, 0-10V, WEST 8010-Modbus)

## Alarms

ProChem allows you scheduling up to 8 alarms to monitor the concentration values on the selected peaks.

Example: first alarm at 10% then 2nd one at 15% etc... or alarm on the Peak sum or other monitored value. Alarms are displayed in red on the monitor.

Other options could be provided for customized alarm monitoring

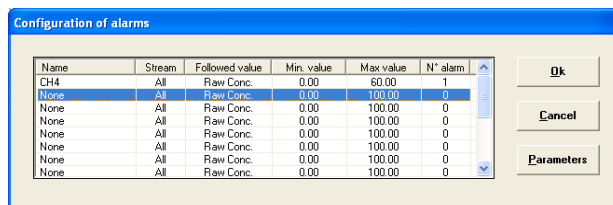


Fig.5 – ProChem allows you scheduling up to 8 alarms to monitor the concentration values on the selected peaks

## Display of the averages

Prochem makes it possible to calculate averages either schedule, number of day or for a number of analysis. These averages are visible in the various windows of results

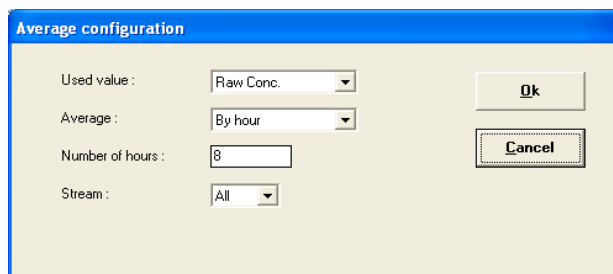


Fig.6 – ProChem calculates averages or hourly, daily or be a number of analysis. These averages are visible in the windows of different results.

## Storage and Archive

ProChem creates archive files for each stream as analysis proceeds, e.g. Date, injection time and other different results. (Compatible Excel®)

## Data transfer

Option: ProChem allows the data transfer under format ASCII file, 4-20mA (16 signals), Modbus and Profibus.

## NGA/RGA Calculations

In option, Prochem can manage calculations RGA, i.e. the calculation of the mass concentrations but also:

- molar mass
- ideal and real density
- ideal and real density
- lower calorific value ideal and real
- higher calorific value ideal and real
- the index of Wobbe
- the factor of compressibility
- carbon

These calculations respect standard ISO/DIS 6976:1995 and of the experimental standard X20-522.

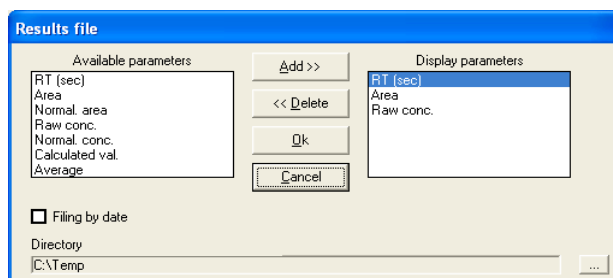


Fig.7 – ProChem allows you scheduling up to 8 alarms to monitor the concentration values on the selected peaks

## Compatibility matrix

ProChem is compatible with:

Chemstation GC A.10.02 version to the B.04.0 version.

Chemstation MSD D.02 version to the E.02 version

Manages chromatographs GC5890, GC6890, GC6850 and GC7890.

Manage the chromatographs coupled with detectors MSD 5893 or MSD 5895.

Manage the interfaces 39500E.

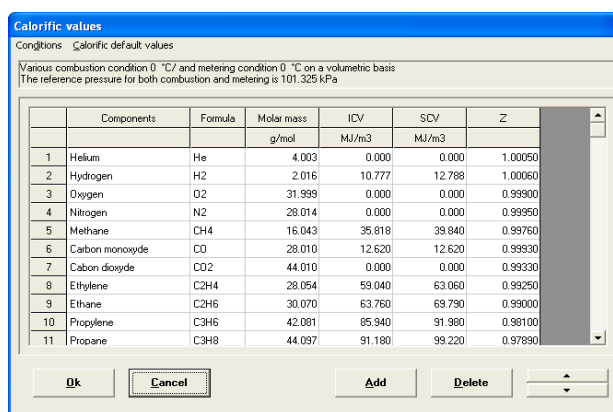


Fig.8 - By default, Prochem provides values for some components perfect for a reference temperature and combustion at 0°C. But other values are available (15°C, 20°C).

