



Online Analytical Solutions Experts



ONLINE & PORTABLE HPLC, GPC OR SEC

HIGH PERFORMANCE LIQUID CHROMATOGRAPHS,
GEL PERMEATION CHROMATOGRAPHY OR SIZE EXCLUSION
CHROMATOGRAPHY WITH UV DETECTION



Method ISO 16000-3 for the analysis of Aldehydes and Ketones
Method US EPA 8310,1986 for the analysis of PAH's
Polymer analysis performed by GPC/UV-RI

HPLC/GPC-UV analysis

Compact and transportable
Liquid Chromatograph

Chromatotec's high performance miniature liquid chromatograph with UV detection is designed for a wide range of applications. This unique hardened transportable system allow to duplicate laboratory application on the field. Each system can be configured to analytical standard specifications or customised on demand.

The instrument is produced in two suitcases of 23 and 19 kg for easy checked luggage when travelling on planes: one containing the analytical part constituted of an HPLC pump, the column oven, the UV detector (RI detector in option and other detectors on demand), the multiplexer 7 samples and liquid injection valve, and the other one the computer and electronic boards for GPC supervision.

The analytical module and electronics can withstand vibrations and impacts of air plane transport including luggage handling (military standard AECTP 400 / GAM EG13 C). It is deployable on site to operate in oil platforms.

The analytical module can also be installed on a laboratory bench in less than 10 minutes and the whole system is operational in less than 1h to start the analysis after conditioning. Thanks to an integrated PC this analyzer provided on site results at a glance.

Chromatotec® Solutions

Chromatotec® is specialized in the manufacturing of automated and certified Gas Chromatographs (autoGCs) for online monitoring of Volatile Organic Compounds (VOCs) or Sulfurs at trace and ultra-trace levels (ppt, ppb).

Besides its standard solutions for gas analysis in ambient air and industrial, odor, oil & gas, emission and process applications, Chromatotec® is permanently involved in new turn-key solution developments.

Size Exclusion Chromatography (SEC) allows the separation of the different molecular weight fractions of the samples, obtaining their characteristic profiles.

In organic mode, the Gel Permeation Chromatography allows differentiating liquid hydrocarbons, such as crude oil, by their distribution as a fingerprint.

Modular instrument, available for several applications

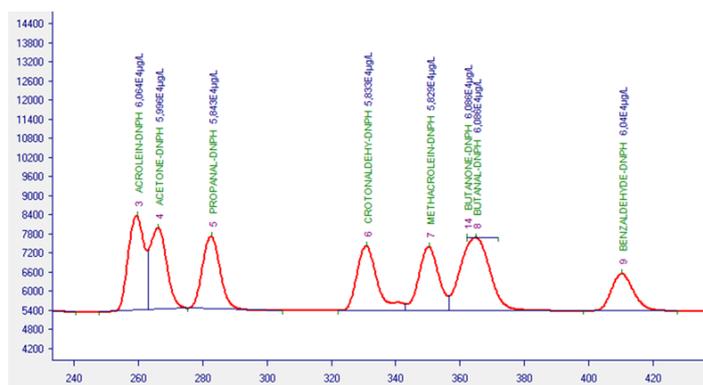
- Analysis of aromatics in oils (petroleum application) - GPC / THF
- Analysis of S8 (natural gas condensate) - GPC / THF
- Aqueous for analysis of very large polymers - GPC
- Analysis of ketones and aldehydes in the air with trapping on DNPH - HPLC
- Analysis of PAHs in air or water - HPLC or UHPLC
- Analysis of pesticides in water - HPLC

New Liquid Chromatograph

Over the last decades, liquid chromatography (LC) has experienced an evolution to smaller columns and particles, new stationary phases and low flow rate instrumentation.

However, the development of air-transportable and robust LC systems has not followed, mainly due to difficulties encountered in miniaturizing pumps and detectors, as well as reinforcing each element to ensure system performances after transport.

Based on its wide experience in chromatographic separation techniques, Chromatotec developed the HPLC-UV system described here to meet the market demands.



Features & Benefits

All-In-One-System

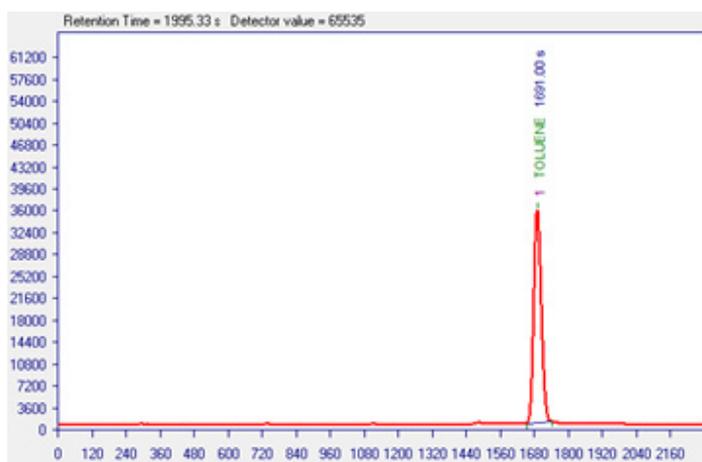
The integrated UV detector with a single-wavelength measures the concentration of aromatic and conjugated compounds present in the samples analyzed. This uses an emission light source which emits radiation at 254nm.

The HPLC pump can work at a low flow rates as low as 0.2mL/min for reduced solvent cost and waste. Isopropanol is used as a lubricant for rinsing and conditioning the HPLC pump.

It includes an autosampler for the analysis of 7 samples and 1 rinsing vial.

High elution time stability

The performances of the system were evaluated using Toluene (retention time, quantification, and column resolution).



A good relative standard deviation (RSD) of 1.5% for the retention time was obtained for crude oil samples in THF.

This shows the high stability of the system, including sample preparation, and process of the results. Its high accuracy allows the high reproducibility and consistency of molecular weight distributions.

Easy maintenance

This low maintenance system offers considerable cost savings over its lifetime.

The main maintenance tasks that may be performed by the user are: replacing the pump head and clean the flow cell of the UV detector.

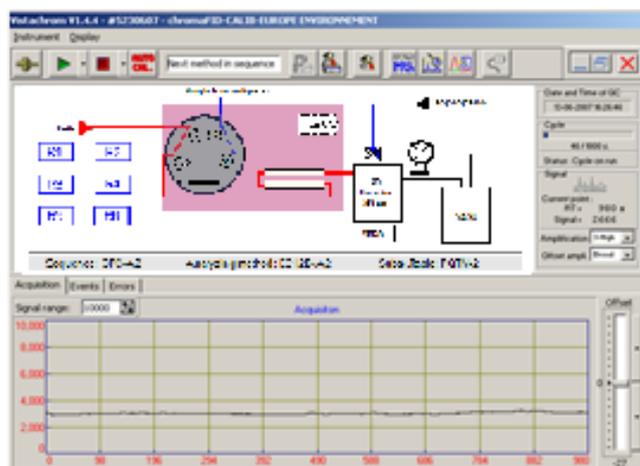
The analyzer is completely autonomous and can be remote controlled using internet connection.

VISTACHROM Software

The VISTACHROM operating software developed by CHROMATOTEC® offers a user-friendly interface for easy operation and processing of data.

The chromatography software VISTACHROM allows:

- A complete automation of the system.
- The signal acquisition, and data treatment.
- The peak identification thanks to a reference substance table.
- Data saving on the hard disk.
- Trend creation allowing a visualization of the evolution of selected peak retention times and surface (or concentration of the corresponding compounds).



Technical Specifications

Samples	Liquid Hydrocarbons, polymers, ketones, aldehydes, PAHs, pesticides...
Technology	Size Exclusion Chromatography (SEC) / Gel permeation chromatography (GPC) or HPLC
Detector	UV (ultraviolet) detection (254 nm) / RI in option
Molecular range	500-25000 Da
Mobile Phase	Organic/Aqueous solvents
Cleaning Solvent	Isopropanol
HPLC pump range	From 0.2 to 10 mL/min and 400 bars (up to 50 mL/min in option)
Gas supply	No gas required for operation
Sampling	Sampling loop: 0.1µL or 0.06µL Sampling flow: 0.2mL/min Dispenser for sample suction
Autosampler	8 vials of 2mL (7 samples – 1 cleaning)
Dimensions	508 x 356 x 254mm and 559 x 432 x 323 mm
Weight	2 suitcases: 23kg for the analytical part 19kg for supervisor and computer
RSD	< 1.5 % on Retention Time
Cycle Time	40 minutes for GPC Oil application 15 minutes for Aldehydes application
Installation Time	10 minutes
Results	Data storage (timestamp)
Communication	MODBUS protocol included in standard 4-20mA current output (option) MODBUS / JBUS or MGS1 communication protocol (option)
Supervisor	Embedded industrial computer Windows® based with LCD display SSD 128 Go hard disk
Power	Power supply: 115 or 220 VAC Power consumption: 130 VA



ISO 9001:2015



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