

## EXPERTS IN GAS ANALYSIS

### Why does Chromatotec™ create its subsidiary in China?

Chromatotec Group is well-known worldwide for the design, research and development, manufacturing and service of on-line analyzers and continuous monitoring of volatile organic compounds (VOCs). The main products are chromatographic analyzers Airmo Series, Chroma and FID Series, tested at ppm, ppb and ppt level. The high level of integration, the low measurable concentrations and good stabilities are the main advantages of our products. The products are sold around the world and they have achieved good customer ratings. Since entering the Chinese market in recent years, thank to the strategic energy policy and the emission of the central government and provincial governments, local governments are taken care of environmental protection more increasingly. Applications of our products are becoming larger and run with more than 100 analyzers installed and integrated in the installation of monitoring systems.

Users are:

1. EMC at different levels: Monitoring of VOCs in air and in water, and odors.
2. Industrial parks and parks chemistry: Detection of Fence and process monitoring.
3. Quality control of pure gas manufacturers: Check impurities in pure gases

Our analyzers are sold and service by our distributors, but they need our full support (including technical training and supply for spare parts);

As our analyzers are more and more sold in the Chinese market, Chromatotec™ decided to establish a branch - Chromatotec Trading (Beijing) Co., Ltd. China.

The main purpose of the establishment of this branch is:  
- Close to the market, strengthen response speed client

tal furniture service and parts, solve concerns of the service customers.

- Enhance technical training for distributors and customers, seminars, participate in exhibitions, making our clients familiar on how to operate analyzers;
- Know the market and the real needs of client to develop analyzers customer needs;
- Listen customer feedback, improving methods of work, increase efficiency, make good customer service;
- Strengthen communication with partners, and strengthen mutual trust, do the preparation work knowing the future location of the products.



Chromatotec™ creates its branch in China, meaning that we have a lot of minds on the development of environmental industry in China and we are told in the Chinese market. We will work step by step, as always, focusing our efforts on the development of the environmental industry in China.

**WANG Xiaoming - Didier**  
Director - Chromatotec Trading (Beijing) Co. Ltd.



**13 - 16 May 2013**  
**CNCC, Beijing**  
**Booth N° G32**

### EXHIBITIONS 2013

- **ACHEMASIA - China**  
Pekin - National Convention Center  
(13 - 16 May 2013)
- **A&WMA - USA**  
Chicago - Hyatt Regency  
(25 - 28 June 2013)
- **TECHNICAL DAY - France**  
Paris - Maison d'Aquitaine  
(10 October 2013)
- **POLLUTEC - France**  
Paris Villepinte  
(3 - 6 December 2013)



### H2S / TOS / TS analysis in 2 minutes

For many applications, the time of analysis and the number of sulfurs to be analyzed are very important. Therefore new applications have been developed to either decrease the time of analysis or increase the number of compounds without coelution. For the odorization of gas, not only odorant species but the total sulfur content must be quantified.

Therefore Chromatotec™ has developed a special instrument to measure H2S and the total amount of sulfur. This analysis can be carried out within 2 minutes.

This instrument can be used to control the process of odorization upstream and downstream. Furthermore, it is equipped with alarm systems and remote controls which allows operator to follow and control the process.

### FAQ on the website «Customer Service»



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## Gas chromatography coupled to mass spectroscopy

Chromatotec™ has increased its expertise in gas analysis and its field of analyzers by developing a new GC/MS analyzer for **continuous VOC surveillance in the atmosphere**.

This system uses the same trap, thermo desorption and separation technologies as current GCs analyzers. However, a **Quadrupole** is used in addition to the FID.

The FID quantifies and identifies according to the retention time, whereas, the mass spectroscopy analyzer identifies compounds using a comprehensive database.

The combination of these two detectors has resulted in an improvement in gas analysis expertise. This system is designed for industrial application. The instrument may be inserted in a 19" rack and can be controlled remotely from another computer. It will now be possible to analyze a new range of compounds with this system.

Currently, a demonstration instrument is running in our laboratory and analyzing VOC in the atmosphere. For this arrangement, a calibration system is used along with a zero air and a hydrogen generator.

Possible applications include monitoring of VOCs (BTEX, phenol, etc), PAH (benzo(a)pyrene), chloride compounds (chlorobenzene and PCB) and dioxin.

## An universal detector : the TCD

Since January 2013, our team is working on the improvement of a Chroma TCD very high sensitivity (Thermal Conductivity Detector). This on-line and continuous analyzer is working with a catharometer as detector. It can detect all kind of compounds depending of the options.

We propose several application such as: measurement of hydrogen impurities in helium, pure gas quality control (UHP: Ultra High Purity), O<sub>2</sub>/CO<sub>2</sub>/CO control, Ne/He/H<sub>2</sub>/O<sub>2</sub>/N<sub>2</sub> separation in less than 15min, laboratory process, ...

In order to open a new range of application, we developed two analyzers working with argon or helium as carrier gas (e.g. argon as carrier gas will avoid oxygen interference).

Thanks to these two systems we can propose a detection range from very low ppm to some %. An automatic cleaning method is available in order to heat (250°C) and clean the column. A use in an explosive atmo there is possible with our option CSA international explosive proof cabinet: Class 1, Div 2, Group C&D, T3.

## NH<sub>3</sub> continuous analyzer by UV spectroscopy

Chromatotec™ presents a new continuous **NH<sub>3</sub> analyzer** by UV spectroscopy.

The advantages of this system are easy identification of **ammoniac** spectrum, high reliability and measurement stability, cost effective and no production of pollutants.

The light source used is a Xenon lamp (life time > 10 years). The detection range is between 0.1 and 100 ppm. Calibration and zero are done regularly



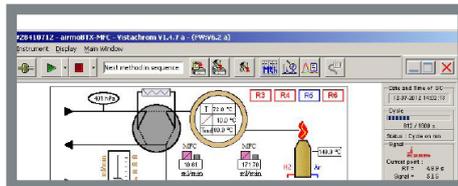
with pure air (without NH<sub>3</sub>). Spectrum decomposition is done by dispersive network; acquisition is fast with a **DCC detector**.

An analysis method based on extraction by Fourier transform is done and the specific NH<sub>3</sub> spectrum in ultraviolet is easily observed in mixed gas. In addition to H<sub>2</sub>S and mercaptans analyzers, this new analyzer is dedicated to the NH<sub>3</sub> measurement in the atmosphere and can also be used to measure **emission and deodorization near waste treatment plant chimneys**.

## Control and display of Mass Flow Controller

The **control and display of Mass Flow Controller** is performed easily via **VISTACHROM** and **VISTA-DETECTOR** software (see below).

This new device allows us to perform better calibration of our analyzers and, therefore, to increase the precision of the measure. To this end, a multi-dilution system is used. Each flow is regulated by the mass flow controller and then, a precise calibration level is achieved.



This module is able to control the flow coming from a cylinder or from a permeation oven. It also allows the control of dilution gas flow. It increases the number of calibration points, which is why the precision of the measurement is enhanced. The quality of the materials (pipes, connections, etc.) is important for low

concentration (ppb) analysis.

Adequate mixing room for VOC or sulfurs compounds will allow proper gas homogenization and less dead volume.

This module is controlled directly on the status window of VISTACHROM and VISTA-DETECTOR. These two MFCs **provide the opportunity** to work in a precise and linear range of flow rate (R<sub>2</sub> > 0.995). Method Manager is used to program and control these different flow rates.

**All parameters are available to be transferred by MODBUS to a host system.**

VISTACHROM and VISTA-DETECTOR allow the creation of a calibration sequence of 6 dilution methods (points) with different concentrations (zero, 100% and 4 dilution points). After the calibration, it is possible to start a measure. This requires the addition of a method in the sequence.

MFC modules are an option of VISTACHROM and VISTA-DETECTOR, but they can also be installed in an older version of VISTACHROM via an upgrade.

## Purge & Trap

Chromatotec™ developed an analyzer for identification and measurement of volatile organic compounds in air and water. The Purge & trap apparatus extract VOC compounds from water in compliance with 502.2 method (US EPA: 60 compounds).

This solution is convenient for a wide range of applications such as: raw source water, river water, seawater, rain water, finished drinking water, bottled water analysis and surface water. More specifically, the detection range varies from 0.5 to 20µg/L for surface water and for finished drinking water.

In order to be analyzed, 5mL of water sample are inserted inside a sparger. Then, an inert gas is needed to purge the sample and to send the gaseous compounds to the detector. Finally, the detector identify and quantify the compounds. The sampling time occurs during 11min and an automatic rinse is done after the measurement. This cabinet is the perfect solution for all kind of water analysis or surveillance.



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