# Le Bulletin

*Issue - March 2014*


EXPERTS IN GAS ANALYSIS

## MEDOR® Exp : online monitoring of sulphur in Hazardous zones

The MEDOR® Exp from Chromatotec® offers continuous, on-line analysis of sulphur compounds from concentrations as low as 1 ppb in natural and biogas feeds.

The system uses proven GC technology developed and improved over 35 years for odorisation, quality and safety applications in a wide variety of processes. The quality and performance of our systems has been recognised worldwide with recognition from Standard Organisations such as ISO, ASTM and CSA.

**Odorisation Application**

The MEDOR® Exp has been developed to monitor all available odorant and mercaptan blends available from all manufacturers.

The system can be used to continually analyse and control odorant injection systems for natural, landfill and biogas sites.

**Process monitoring – Gas Cleaning & desulphurisation**

For sulphur removal processes, such as Landfill or Biogas treatment before injection into a pipeline network requires careful monitoring and control. The integrated software, VistaChrom transfers all results and information through to a host system automatically and is equipped with concentration based alarm thresholds which will trigger safety measures in the event of process failure.

Natural gas destined for cracking processes is easily monitored automatically to ensure protection for catalytic plants. Our internal permeation system offers automatic validation of results & data.

**Pipeline Quality Control**

The MEDOR® Exp is widely used for sulphur contentin natural gas storage and transport. Unodorised gas can be analysed for natural sulphur species before and during transport or storage. ■

## H2S / TOS / TS

For many applications, the time of analysis and the number of sulphurs 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 sulphur content must be quantified.

Therefore Chromatotec® has developed a special instrument to measure H2S and the total amount of sulphur. 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. ■

## MCERTS Certification for ambient air analysis on benzene and VOCs

Chromatotec® is proud to announce that the FID instrument airmoVOC (measurement of benzene but also 12 compounds of the European list between C6 and C12) and the PID instrument airToxic (measurement of Benzene but also BTEX compounds) have obtained MCERTS certification since June 2013.

These two MCERTS certificates have been delivered by SIRA Certification Service on behalf of the UK Environment Agency. They are based on the results of the tests managed by the NPL (National Physical Laboratory) in London*. These types of approval tests are described in the EN 14662-3: 2005 “Standard method for the measurement of benzene concentrations Part 3 Automated pumped sampling with in situ gas chromatography”.

**These two certificates have a European acknowledgement thanks to 3 important points:**

- NPL is accredited ISO 17025 for the measurement of benzene according to EN 14662-3 Standard. This accreditation covers laboratory testing and field testing
- SIRA is in compliance with EN 15267-1 that defines product certification general principles.
- Chromatotec® is in compliance with EN 15267-2 that defines its production conformity and the design change management. This conformity is proven by the MCERTS Manufacturing Audit that was conducted by SIRA (Report Number 16A0385A).

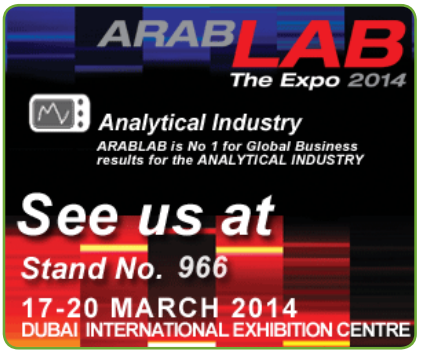
Chromatotec® is currently communicating the certificates to the national reference laboratories in charge of analysing the test reports to declare the instrument into their official list of authorized instruments. Mines de Douai, on behalf of the French governement and Instituto Carlos III on behalf of the Spanish government will be the first reference laboratories to analyze our test reports.

In addition Chromatotec® has written a publication in collaboration with the NPL concerning the tests which was published on the IET Annual Buyers’Guide 2013.

*Full article Available on the Chromatotec® website on the “News” page*
*http://www.chromatotec.com* ■

* NPL report number E09040018 dated 14th June 2013

## Exhibitions in March





### Other Exhibitions in 2014

**CEM - Turkey**
Istanbul
14-16 May 2014

**IE EXPO - China**
Shanghai
20-22 May 2014

**A&WMA - USA**
Long Beach California
24-27 June 2014

**TECHNICAL DAY - France**
Paris - Maison d’Aquitaine
9 October 2014

**ADIPEC - UEA**
Abu Dhabi
10-13 November 2014

To get an invitation:
info@chromatotec.com

# airmoTWA: New TRAP GC/MS/FID instrument for ambient air monitoring designed for onsite use

**The airmoTWA in clean air room**


To ensure people's safety and a good repeatability of industrial process, the analysis of ambient air is crucial. Electronic boards are produced in clean air room by complex lithographic process using very reactive chemicals. The nature and concentration of volatile compounds can be different depending on the chemical process and can also vary rapidly. There is a need to analyze precisely and continuously gas process in air with an instrument designed for industrial use.

Since 1986, Chromatotec® is a worldwide recognised expert in gas analysis, renowned and certified for its precise analysis in ambient air monitoring and natural gas. In industry, Chromatotec's systems prove their value in online monitoring, quality control and environmental protection.

They make substantial contributions to process control, to the improvement of product quality, and to the enhancement of system safety as well as to environmental protection.

Chromatotec® has developed a turn-key solution which allows the quantification and identification of compounds at ppt, ppb, ppm and % levels. The airmoTWA is a new industry standard for online and continuous TRAP/GC/MS/FID. It encompasses a specific trap to concentrate the sample, a column for separation of chemicals and two detectors: a new micro flame ionization detector (FID) and a mass spectrometer for quantification and identification respectively.

The airmoTWA is simple to use and incredibly sensitive and delivers robust and reliable performance. Particularly, the instrument can monitor and record a large number of concentrations of molecules and can have alarm systems which can be set to inform on important changes in the surrounding atmosphere.

In the Figure 1, a mass spectrometer chromatogram obtained analyzing ambient air is shown. The peak resolution and sensitivity of the instrument allows quantifying and identifying very low VOC concentrations.

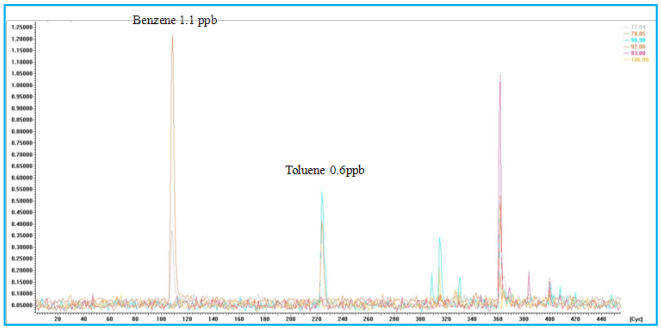


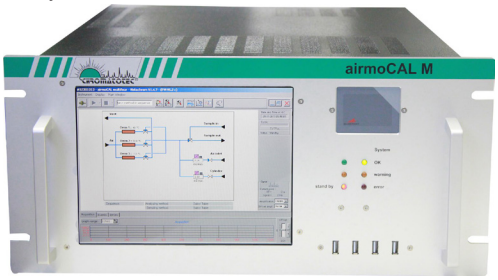

**Figure 1 :** Results obtained with the mass spectrometer analyzing ambient air

## Instrument for the preparation of gas standards for mono and/or multipoints calibration: airmoCAL M

Simple and accessible through its integrated software, airmoCAL M can be used to calibrate analytical instruments with standard bottles or permeation tubes.

airmoCAL M can automatically prepare and inject gas for all kinds of analytical instruments.

The principle of this device is based on mixing, dilution and injection of calibration gases, which can be useful in many applications such as calibration and validation of analyzers.




**airmoCAL M**

With three thermally controlled ovens and mass flow controllers, it is possible to inject a large number of calibration gases from standard cylinders or permeation tubes controlling rates and quantities. Each oven calibration can contain up to 6 tubes which allows a large number of reference gases without carrying gas bottles. The permeation tubes sold by Chromatotec® are certified in our laboratories and can produce very precise standards (sulphur and volatile organic compounds).

The software VISTACHROM allows gas injection in a timely manner or in a programmed sequence. Friendly and intuitive, the software can be used very quickly. It also includes a monitoring function for full traceability. All sequences can be saved to be recalled at any time. Also communication protocole can be used (modbus, jbus…)

Chromatotec® provides different calibration systems such as airmoCAL, airmoCAL D, airmoCAL MFC and airmoCAL M depending on customer needs.

## Measurement of gas concentration in water

Nowadays, companies want to have an accurate control of their process in terms of efficiency and safety. As key parameter for process safety, corrosion problematic is becoming crucial for some applications such as cooler systems. In this sense, high level of oxygen in cooling water is increasing corrosion rate.

Therefore, to decrease oxygen content in such water, an addition of chemicals reagents is carried out. To control the efficiency of these reactions, the measurement of oxygen content in water needs to be done.

Chromatotec® has developed a specific system to degase and measure oxygen and other gases (e.g. hydrogen, nitrogen…) in dynamic water. The different gases are extracted with an inert gas (e.g. helium, argon…) and sent to the analyzer. The low detection limit (LDL) is 4 ppb of oxygen in water.

For results validation, an internal calibration system working with a Faraday cell has been developped. This system is based on a standard addition method. A well known quantity of oxygen is produced by electrochemical reaction, and then the produced oxygen content is extracted from water and measured with the analyzer. The validation of results depends on the inter-comparison of experimental and theoretical oxygen content values.

Based on the same principle, Chromatotec® is developing electrochemical gases generators (e.g. H2S, Cl2, O2, H2…). These generators will give the opportunity to reach high level calibration accuracy. Therefore, the whole analytical system accuracy will be improved.

***EUROPE – FRANCE***
15 Rue d'Artiguelongue
33240 Saint-Antoine
Tel +33 (0) 557 940 626
Fax +33 (0) 557 940 620

***NORTH AMERICA – TX***
18333 Egret Bay Blvd, Suite 270
Houston TX 77058
Tel +1 (281) 335 4944
Fax +1 (281) 335 4943

***ASIA – CHINA***
Room 1806, Building 1,
Wanda Plaza, No.93, Jianguo
Avenue, Chaoyang District,
Beijing 100022, China
Tel : +86 (0) 105 960 3283