Le Bulletin

May 2019

ONLINE GAS ANALYZER EXPERTS

Chromatotec®'s on-line dual TD-GC-FID/MS for automatic and continuous VOC monitoring in ambient and industrial air

Ambient air is polluted by many Volatile Organic Compounds (VOCs) coming from anthropogenic and natural sources. Due to the large number of these molecules, there is a need to combine their separation and quantification by Gas Chromatography (GC) with Flame Ionization Detection (FID) and their individual identification by Mass Spectrometry (MS).

airmoSCAN XPERT

With this aim, Chromatotec® has developed a turnkey solution which allows the automatic quantification and identification of VOCs: the airmoSCAN XPERT.

It is a combination of two robust instruments: a dual GC-FID for the monitoring of C2 to C16 compounds (airmoVOC expert) and a process Quadrupole MS.

The instrument allows the monitoring of up to 123 VOCs at ppt, ppb, ppm and % levels in only 30 minutes.

Thanks to its many advantages (easy to use, fully automatic, intrinsically linear, precise and very stable system with data validation) this solution has been implemented in fixed and mobile laboratories for urban and industrial field analysis all over the world.

airmo TWA

Among its main industrial applications are those that require very high sensitivity, such as the air analysis in clean air rooms with airmoTWA (including a multiplexer to analyze up to 16 streams).

Exhibitions 2019

PEFTEC
CONFERENCE EXHIBITION & SEMINARS

PEFTEC 2019
Rotterdam, Netherlands
22-23 May 2019

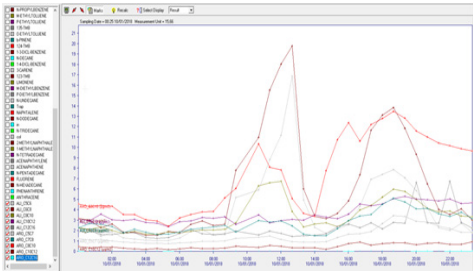
CIEPEC 2019
中国国际环保展

CIEPEC 2019
Beijing, China
12-14 June 2019

OGA2019
THE 17TH ASIAN OIL, GAS & PETROCHEMICAL ENGINEERING EXHIBITION
18-20 JUNE 2019
Kuala Lumpur, MALAYSIA

OGA 2019
Kuala Lumpur, Malaysia
18-20 June 2019

Volatile and Semi Volatile Hydrocarbons measurement in ambient air near industrial area

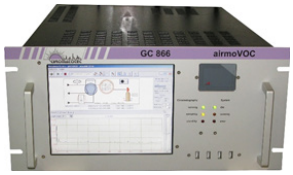


Volatile and Semi Volatile Hydrocarbons are recognized as a toxic group of organic compounds (e.g. Benzene, Phenol, Naphthalene…) with documented carcinogenic, mutagenic and teratogenic properties. These compounds can be organized in two families, the aromatic and the aliphatic hydrocarbons, which have different impact on people's safety, odor and environment. They are produced naturally by wood fire, volcanoes and human activities such as coal, refineries and gasoline combustion.

They are particularly prevalent in urban and industrial environments. In several applications, such as refinery site depollution, the ground is moved and the compounds are emitted at different concentrations, leading to odor and safety issues. Because of their toxicity, the emission of these compounds into urban and workplace air have been limited at very low levels by regulations. Therefore, there is an increasing need for continuously and accurately monitor the molecules that are emitted.

To meet these needs, Chromatotec® has developed a specific instrument dedicated to the measurement of Hydrocarbons C6 to C16 (including some Poly Aromatic Hydrocarbons) with a sensitivity in the range of low ng/m3. The instrument is designed to decrease the risk of interference caused by other molecules that may be present in the sample.

A specific internal calibration system is used to validate the data and to ensure a good stability of the analytical solution. This all in one solution includes gas generators and sampling pump to make it completely autonomous.



airmoVOC analyzer

Vistachrom software is used for data display and treatment. Results are presented as aromatic and aliphatic hydrocarbons for an easier data analysis. In addition, it is also possible to provide results as sum of hydrocarbons. This flexibility in the software becomes of great help for the user during the phase of data study or to create reports.

Monitoring of odorants, VOCs and sulfur species in gas or liquid (LPG/LNG) matrices

Chromatotec®, specialist in the manufacturing of process gas analyzers for online monitoring, is now entering the world of liquid sample analysis through the development of a simplified enhanced liquid sampling system (XXvalveLPG) specifically designed to extract representative samples from the liquid phase.

The extracted liquid sample is vaporized and injected in continuous mode into the column of the auto-GC analyzer with speciation of more than 16 sulfur compounds or 123 Volatile Organic Compounds (VOCs) according to the configuration type.

Considering sulfur compounds approach, H2S, mercaptans such as tert-butyl mercaptan (TBM), dimethyl sulfide (DMS) and/or Total Sulfur (TS) can be analyzed in Liquid Propane Gas (LPG), Liquified Natural Gas (LNG) and other liquid samples such as crude oil, diesel, fuel, oil, water and condensates at very low concentration levels (ppb and/or ppm) in automatic routine mode.

This is very useful to control the effectiveness of the odorization process of LPG as it is usually odorized with DMS and TBM to alert in case of leakage. Chromatotec®'s liquid valve allows performing the analyses directly from the liquid phase to overcome the problem of lack of uniformity of the odorized liquid vapors due to the different boiling points of the species when associated with auto-GC with a MEDOR® sulfur specific electrochemical detector, such as energyMEDOR® analyzer.

It is available with dedicated configuration for safe and hazardous areas: ATEX, IECEx, CSA and CSA international certifications for its application in refineries and petrochemical plants.

Analyzer with internal calibration

CO2 quality control for food and beverage industries using Chromatotec® chromaS-COS and airmoVOC BTEX

Carbon dioxide (CO2) is a commonly used additive in food and beverage industry. Its fabrication process can lead to the presence of impurities such as Benzene, Toluene, Ethylbenzene, Xylenes (BTEX) and sulfur compounds.

Gas Chromatography (GC) is one of the most commonly used techniques for CO2 quality monitoring to ensure meeting legal requirements. Chromatotec® has developed a GC analytical system for impurities measurement in CO2.

It consists of a fully independent, highly stable and automatic cabinet including the following modules:

- chromaS-COS for Total Sulfur analysis. Speciation of H2S, mercaptans, DMS, DMDS, COS, CS2 and SO2 by dual Flame Photometric Detector (FPD).
- airmoVOC BTEX for acetaldehyde and BTEX analysis using a Flame Ionization Detector (FID).
- Internal calibration system for the validation of the results.

In compliance with the International Society of Beverage Technologists (ISBT) guidelines, Chromatotec® can also provide solutions for O2, CO, NH3 and THC (Total Hydrocarbon) monitoring.

Combined VOCs and Odor Monitoring for Odor and Chemical Control Units: A Major Challenge for Industries

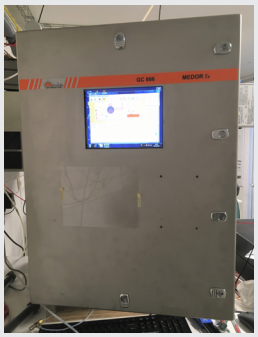
When odor issues occur at an industrial site, rapid diagnosis must be done to define the best source treatment strategy. Manual sampling techniques can lead to problems during sampling and transport to the laboratory for analysis. Therefore, there is a need for online analyzers to monitor odors constituents such as methane and non-methane Volatile Organic Compounds (VOCs). Online monitoring of methane (CH4) and Non-Methane Total Hydrocarbons (THC) with an all-in-one solution allow accurate and fastest results.

The fully automatic, wall-mounted instrument proposed by Chromatotec® consists in an automated Gas Chromatograph (GC) with Flame Ionization Detection (FID): chromaTHC. It provides the ability to quantify CH4 and nmTHC (with THC by sum) concentrations from ppb to ppm within only 2 minutes and without matrix effects.

Designed for odor and chemical control units, it includes a built-in computer and zero air and hydrogen generators. The measurement system performance evaluation is completed using the internal calibration with a permeation tube to provide automatic data validation. Additionally, a 3G/4G MODEM is available for data transmission and automatic alarm by SMS function to inform user and provider when media support (charcoal or bio filters) is saturated and needs to be replaced.

This user-friendly system does not require specialized people to operate. The high quality of the information is assured without the need for verification by an expert.

ChromaTHC analyzer



Brand new : LCD display on Wall Mounted Box

Chromatotec® is now able to integrate a projected touch screen for systems available in wall mounted box (MEDOR, BTX or airToxic analyzers).

Dedicated to hazardous areas, this LCD display has excellent optical properties as it responds to light touch and is extremely robust.

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