

## ONLINE GAS ANALYZER EXPERTS

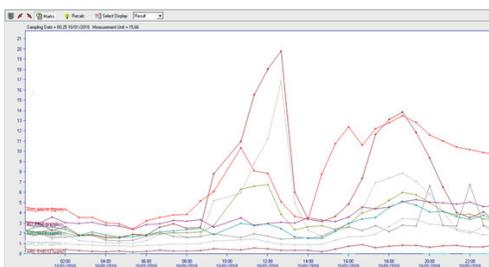
### Volatile and Semi Volatile Hydrocarbons measurement in ambient air near industrial area

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 - aromatic and aliphatic hydrocarbons - with 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.

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 emitted.

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/m<sup>3</sup>. 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.



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 designed becomes of great help for the user during the phase of data study or to create reports.

### Revolutionary solution on odor market : vigi e-nose recognized versus the competition

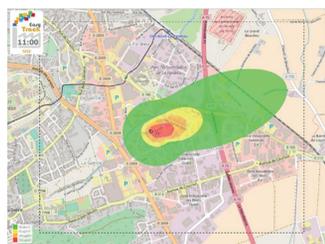
When odor issues occur at an industrial site, rapid diagnosis must be done and a strategy defined to treat odor sources definitively. In response to this need, Chromatotec® has developed a solution for the online analysis of odorants with sulfurs speciation in addition to VOCs monitoring including ammonia (NH<sub>3</sub>).

Chromatotec® solutions provide the ability to quantify concentrations in parts per billion (ppb) or parts per trillion (ppt) in ambient air and process applications. Its all-in-one, turn-key, vigi e-nose solution can be deployed at any location, any environment, and any classification where odorant monitoring is required.



CANOPIA recovery center located in Bayonne, France, has recently deployed this solution. This site collects domestic waste from 200,000 citizens and converts it to compost, solid recovered fuel and biogas by utilizing the VALORGA methanization process. Urbaser Environment designed and managed the construction of the entire site and currently manages the site through the VALORTEGIA subsidiary.

vigi e-nose analyzer is part of vigiOdor, solution for online monitoring and modeling of the site contribution of the olfactory and chemical impact of the site on neighborhood. vigiOdor is the web platform fed by data provided by vigi e-nose and local meteo weather station. It allows for site mitigation procedures to treat and prevent odors with better understanding of process variations based on-line reliable and validate results. It facilitates communication with authorities' and associations.



*This was not possible with sensors-based electronic nose technology as such solutions did not help us to elaborate diagnosis of process malfunctions when odor concentration exceedance was observed on the effluent of the odor control system. The Chromatotec® solution with vigiODOR platform and vigi e-nose GC based technology give us the expected results."*

### Exhibitions 2018



**IE Expo 2018**  
Shanghai, China  
3-5 May 2018  
Booth #2443 Hall E2



**CEM 2018**  
Budapest, Hungary  
16-18 May 2018 - Booth #19



**ACHEMA 2018**  
Frankfurt, Germany  
11-15 June 2018  
Booth #G86 Hall 11.1



**Euro Mass Spectrometry**  
Roma, Italy  
20-22 June 2018



**Rio Oil & Gas**  
Rio de Janeiro, Brazil  
24-27 September 2018



**ADIPEC**  
Abu Dhabi, UAE  
12-15 November 2018



Mr. Cueillens, Project Director for Urbaser Environment, in charge of the site management, states "We were looking for a solution able to monitor sulfurs and VOCs to facilitate our understanding about process variation.

## Chromatotec® welcomed the 33rd meeting of the European working group WG12 for standardization for the measure of pollutants in ambient air

Chromatotec® had the pleasure to welcome the 33rd meeting of the CEN/TC 264/WG 12, the working group in charge of reviewing the different European norms concerning ambient air monitoring: SO<sub>2</sub>, NO<sub>2</sub>, O<sub>3</sub>, CO, Benzene and Ozone precursors (VOCs). This meeting took place at the headquarters of the company in Saint-Antoine on March 20th and 21st.

As an important player in the ambient air industry, Chromatotec® joined this working group WG12 in 2014 through Michel Robert, our Analytical Department Manager, who is part of the French Delegation on behalf of the AFNOR, the French national organization for standardization.

This meeting was the occasion to discuss the review of the EN 14662-1 'Benzene – pumped sampling'. It was also decided to set up a subgroup for the development of a Technical Specification for ozone precursors with automated GC, which M. Robert will join since Chromatotec® is developing high level GC Solutions now well recognized all around the world.



We would like to thank all of the group members for joining us for this event, it has been a pleasure to welcome you on these sunny two days.

## BTEX, phenol, cresols and Formaldehyde measurement in ambient air

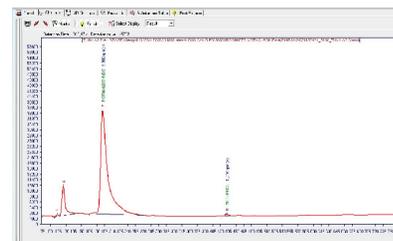
The measurement of Volatile Organic Compounds (VOCs) in ambient air is a critical issue to ensure people safety near Industries area. Due to regulations, it is requested to control the level of VOCs rejected in the atmosphere. European legislation EN 14662-3:2015 requires specific certified instrument to measure benzene in ambient air. In some countries, Environmental Protection Agencies are looking for the monitoring of other pollutants such as phenol or formaldehyde near industrial areas.

Chromatotec® has developed an all-in-one solution to continuously monitor VOCs (including Benzene, Toluene, Ethylbenzene and Xylenes), phenol, cresols and formaldehyde at low concentration. This autonomous solution is composed of an airmoVOC C6-C12 which is Mcerts certified following the EN14662-3:2015 and an airmoHCHO dedicated to the measurement of Formaldehyde. The solution includes the gas generators, the pumps needed for the sampling step and the internal calibration.



airmoVOC

Specific communication protocols are available with the instrument (e.g. Modbus, JBUS, ...) and allows to communicate with a Data Communication System (DCS).



Additionally, if the instrument is connected to Internet (e.g. using 3G modem), a specific software such as UltraVNC allows the user to have a complete access to all the functionalities of the instrument remotely. It becomes then very easy to check the instrument operating conditions. Moreover, all the parameters of the gas generators are available on the instrument's computer offering to the operator an overview of the complete system status.

### New address in Houston

Beginning of 2018, Chromatotec Inc., the US company of Chromatotec Group, has moved to brand new offices in Uptown Houston. The company will now welcome its partners at :

5100, Westheimer, Suite 545  
Houston 77056 (TX)

## Sulfur compounds analysis for the new Gas pipeline built in South West of France

On 12 December 2016, the CEO of Teréga (TIGF), officially signed two EPC (Engineering, Procurement and Construction) contracts to build the Reinforcement Gascoigne Midi (RGM) project. The signing of these contracts reflects Teréga's commitment to working with local companies and investing in the development of its natural gas transmission network.

The dual objective of the RGM major project are:

- To increase the transit capacity necessary for the supply of natural gas in the south-eastern area of Teréga's territory;
- To eliminate gas transmission price differentials between Northern and Southern France.

To this end, Teréga will build a 900 mm diameter gas pipeline running for 62 km between Lussagnet and Barran. The overall investment in this project is €152 million.



Natural Gas network controlled by Teréga in South of France

Therefore, Chromatotec® has been selected to propose its specific solution designed for the monitoring of sulfur compounds which are used for the odorization of natural gas.

The also called energyMEDOR instrument is a fully automatic gas analyzer dedicated to the online THT, mercaptans and other sulfur compounds measurement from low ppb up to high ppm concentration levels.

The instrument was selected for its analytical performances (linearity, reproducibility and sensibility) as well as for its low cost of maintenance and operation.

This specific solution is mainly used for the monitoring of sulfur species in natural gas, gaseous fuel or Liquefied Petroleum Gas.



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