

ONLINE GAS ANALYZER EXPERTS

VistaMS: New Chromatotec® Mass spectrometry software for continuous and online monitoring

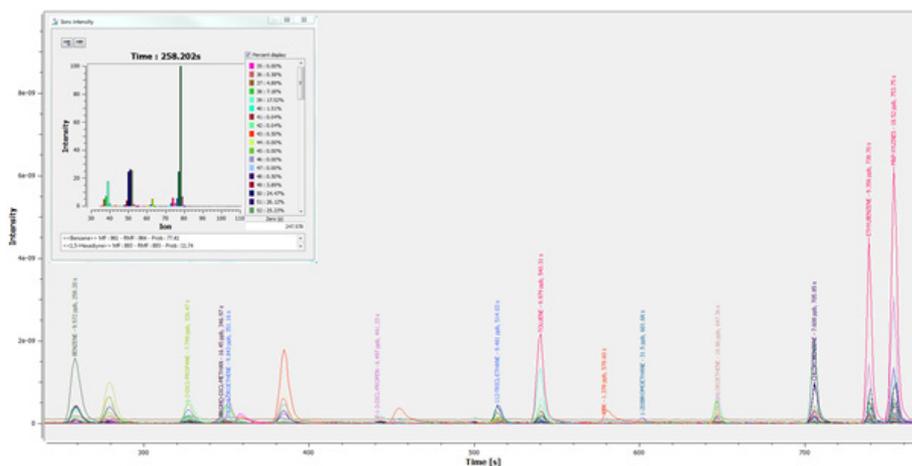
For complete and precise analysis of complex samples, dual Thermal-Desorber Gas Chromatograph (TDGC) equipped with two Flame Ionization Detectors (FIDs) and one Mass Spectrometer (MS) is one of the most efficient analytical tool. A Chromatography Data System is vital for efficient and reliable operation of any modern on-line and continuous chromatography acquisition system.

VistaMS offers a unique solution for simple identification and quantification of molecules from complex samples and data transfer of your MS analyses. This software, included in all Chromatotec® MS systems, can intercompare and validate results obtained using multiple detectors. In ambient air systems, data from two FIDs and one MS are timestamped, saved and analyzed to provide the most reliable and precise results.

Analytical results can be easily re-processed changing all parameters of the TDGC-FID/MS system (retention times, response factors, volume sampled, etc.). Automatic communication with NIST library allows for confirmation of identification of your complex samples. Physical parameters of the TDGC and MS as well as all analytical results can be transferred using Modbus protocol.

Key features of the VistaMS:

- Automatic identification and quantification of molecules
- Auto-calibration using permeation tubes or reference cylinder (PAMS, TO15, TO14...)
- Inter-comparison of results with Multiple detectors
- FID and MS data validation
- Easy re-process of all analytical results
- Display and transfer of results and physical parameters of TDGC and MS using Modbus protocol
- Results validation using NIST library
- Automatic restart after shutdown



Complete speciation of sulfur compounds in hazardous area zone I and II using Ex d certified solution

Natural gas is a natural resource present on the earth which can vary in composition depending on the place it is extracted. In order to use and valorize natural gas, it is necessary to control its composition. Even if it is composed mainly of methane, natural gas contains some traces of sulfur compounds which can affect its quality and can have dramatic effects for its transportation (e.g. corrosion of the pipes). Therefore, companies that work with natural gas control the level of sulfur compound impurities as well as adding specific Mercaptans to make it odorized and easily detectable in case of a leak.

For this purpose, Chromatotec® has developed and manufactures the energyMEDOR® which measures with speciation all following sulfur compounds generally present in the natural gas: H₂S/DMS/DMDs/Mercaptans. These new instruments are designed to work in hazardous areas such as ATEX zone 1 without any purge gas requested for operation.

This MEDOR Ex d solution is one of the only instruments capable to analyze all previously mentioned sulfur compounds in hazardous area without purge gas thanks to the MEDOR® wet cell detector. Other possibilities given to customers are using the FPD technology (requesting Hydrogen and air for the Flame and big volume of purge gas to operate in hazardous area) used for sulfur compounds detection.

Chromatotec®'s energyMEDOR appears to be the best solution for these applications since it only needs a very small amount of zero air or nitrogen to operate (down to 4 ml/min) and its MEDOR® wet cell Sulfur Specific Detector is capable to detect sulfurs as low as 1 ppb. This certified solution has been designed to operate in zone I and II and can be used with 230V, 115V and 24V DC power supply making it quite unique on the market.



Ex d box for hazardous areas

energyMEDOR in box



Analysis at very high concentration in short cycle time: The New Challenge

Chromatotec®, despite being an expert in the analysis at low ppb levels, has invested in the development of solutions for measurement at very high concentration range with short cycle time of two minutes. One of the latest analytical solutions available is quantification at % level with same Chroma models as the ones used for ppb or ppm.

Two examples of analysis:

- Analysis of CH₄ and NMTHC at more than 4%, with the Chroma THC MNM THC
- Analysis of H₂S at 1 % with the H₂S/TS Medor

These applications allow perfect quantification without any memory or matrix effects thanks to very low adequate volume injection loop. This loop can be integrated in the analyzer configuration (10 µl to 1 µl are available) and low grade of signal amplification. Such analyzers are a revolution in the market of Biogas.

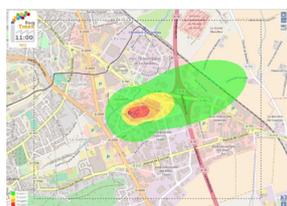


Chroma THC in rack



H₂S/TS Medor into an ATEX box

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



Few years ago, Chromatotec developed a new solution called the vigi e-nose. The name of this product was used to compete with other electronic noses (e-noses). E-noses offer a good alternative to dynamic olfactometry measurement to check odor intensity variation. The majority of the existing e-noses in the market deploy detection sensors known as Metal Oxide Sensors (MOS).

These technologies provide a global fingerprint using two main principle of detection: non selectivity and cross-interference with humid sensitivity. Some providers try to integrate 'specific sensors' as NH₃ or H₂S but these sensors are sensitive at ppm levels and cannot reach human nose sensitivity. However, these solutions allow tracking gas variations with additive information in spite the fact that sensors used are crossed-selective (example: H₂S specific sensor has interferences with Mercaptans and ammonia. It is not selective in spite the commercial speech)

Raw data coming from the analyzers are treated by mathematical models using artificial network or multivariate statistics. This provides results correlated with reference odor sensory method (as dynamic olfactometry if used according to European standard EN 13725 or ASTM 679 E-4 if US standard is required).

Due to customer non satisfaction with existing solution, Chromatotec has developed and deployed the solution initially in municipality as WWTP to Paris, Dubai and Poland and now in sites equipped on the past by

competitor e-nose. Comparative tests were done with competition as illustrated on the picture. Demo were converted on sales based on quality results.

Some configurations have been deployed with shelter integration or specific wall mounted boxes to provide reliable results; thanks to internal permeation tube and good working environment. The revolutionary approach is based on the separation of 14 sulfurs such as H₂S, Mercaptans, and Sulfides including in addition VOCs concentration with all-in-one solution. This turn-key solution offer capabilities to reach concentration levels lower than what the human nose can detect.

When odor impact is required, the last development of dispersion software (vigi Odor) allows to integrate in standard AERMOD model recognized by US EPA or recognized organization: This is the easy track solution recently deployed on the recovery centre in France.



EUROPE – FRANCE

15 Rue d'Artiguelongue - Saint-Antoine
33240 Val de Virvée
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