

OMCTS Abstract

Odorous compounds monitoring, olfactometry, human noses? Which option should you choose?

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Experience of 18 years in Odorants/ Odor control / Chemical & olfactometry analysis / electronic nose / dispersion modeling software

Markets : ambient /Industries : WWTP, Landfill, Recovery site, Petrochemicals.

Member of the X43F group (revision of the EN 13725 standard)

Article

Odors are very distinct air contaminants as they generate nuisances and can affect nearby residents. The factors playing a role in the determination of odor annoyance are: odor concentration and intensity, frequency, appreciation, duration and location. Several solutions are available as sensory approach (dynamic olfactometry), sensor technologies (portable sensors, electronic noses, etc.). In Waste Water Treatment Plants (WWTP) odorous compounds is a crucial point. Amounts of installations may generate diffuse odor due to sulfur compound presence.

As human sense is very sensitive, due to dilution factors (meteorology, site topography, etc.) measurement solutions are located closed to the sources as it is difficult to track ppb or ppt as for H₂S, Mercaptans or others molecules on environment.

Recently, Chromatotec® have provided an automated solution: vigiODOR solution able to identify correctly the origin and the level of odors based on chemical profiles. Using GC based technology, the MEDOR GC analyzer can track and quantify concentration of sulfur compounds at ppt level. It is possible to analyze continuously molecules as: H₂S/ MM/EM/DES/DMS/DMDS/PM/SO₂ according to ISO6326/2 & DIN51855/7 ASTM D 7493-08.

With detection limit down to 1ppb for H₂S, Mercaptans and Sulfides, it is possible to be more sensitive than human nose without interference effect (in comparison with e-nose). The technology is robust with detector lifetime up to 10 years with automatic calibration for results validation. When interest is to evaluate chemical impact of odorous compounds on the neighborhood, Chromatotec® provides turnkey solution including data reporting and modeling Software with integration of online Registration of complains and recalculation of odor concentration at specific location and time.

The instruments network monitors ambient odors inside and outside WWTP and monitors also the deodorization process. One instrument, using a multi stream selector is able to measure compound concentrations and odor indexes before and after deodorization tower.

These measurements allow the control and the adjustment of deodorization processes, the optimization of chemical treatment and to decrease effective costs.

As the replacement of calibration gas cylinders is expensive and time consuming, Chromatotec® has developed electrochemical gas generators (e.g. H₂S, Cl₂, O₂, H₂...). These generators will allow high level calibration and improve the robustness and reliability of the system.

During the presentation a quick tour of available solutions will be provided with a specific focus on a WWTP application.

To know more: www.chromatotec.com – To contact us: sales@chromatotec.com