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ABSTRACT

USE OF MULTISTAGE HYBRID TECHNOLOGY FOR THE TREATMENT OF EMISSIONS THAT PRESENT CRITICAL ISSUES IN TERMS OF VARIATIONS OF THE CONTAINED MIXTURES AND VOLATILITY.

Riccardo Snidar; Enrico Pieri; Enea Merlin – Labio Test srl - Italy
Silvia Rivilli – Lod Srl - Italy
Jorge Vicente – Deplan sl Spain

Summary

Applications of a multistage hybrid technology for the treatment of emissions that are critical due to the variety of mixtures they contain and varying volatility factors. This presentation describes the whole process, from the study of emissions to their treatment and management when washing tankers used to transport chemical products of a company located in central Italy.

The designed equipment treats air exhausted from tankers during washing, as well as the air in the washing water booster pumps hall and that of the air lock tank. Total flow-rate amounts to 1.000 m³/h. The treatment follows various stages: absorption in a watery solution added with an alkaline-oxidizing reagent; condensation of watery and organic solutions; physical and chemical absorption, with pollutants neutralization and oxidation; refining olfactometric process. In order to get optimal results, the monitoring program includes instructions on routine and corrective maintenance and handles the management of the plant in such a way as to allow for abatement efficiency and evaluation of results throughout time, during the first year of operation. The scope is to determine and survey parameters allowing for the optimization of management procedures and maintenance time intervals, in order to ensure a proper operation of the equipment and supply useful information to control authorities. The obtained results have met with the requirements of Authorization DET-AMB-2019-552 dated 07/02/2019 from the chemical point of view, as well as that of olfactometric parameters surveyed in compliance with UNE EN 13725 standard. Results permitted to verify the usefulness of the refining olfactometric stage and evaluate exhausted elements coming from the dry scrubber; to check the evolution of chemical values and maleic anhydride rate; and to ascertaining that the olfactometric study showed an evident decrease of the value surveyed on the operator workstation inside the washing equipment. Furthermore, the odorigenous concentration values surveyed both on the inlet and outlet of the washing system, with open hatches and operating suction equipment, showed that it is not necessary to close hatches; a useful information for future monitoring.

Indicate preference of kind of presentation

x Oral Communication

□ Poster

Indicate topic of your work for the conference:

□ Policy and associated regulations for odour and air quality.

□ Odour/VOC measurement, monitoring&sensor technologies.

□ Odour/VOC perception, impact, formation and dispersion.

□ GHG emissions particulate matter and industrial emissions.

□ Source characterization and odour/VOC mapping.

x Odour/VOC abatement, mitigation and neutralization.

□ Odour/VOC from waste water, sewer systems and livestock.

□ Air emissions and sustainable solutions for waste handling

□ Community engagement, social media and citizen action.

□ Other (suggest a new topic):

The scientific committee can examine the kind of presentation and session where authors propose to include their works.