

4th World Congress on

CHROMATOGRAPHY

August 07-09, 2017 | Rome, Italy

Analysis of chlorinated compounds, phenolic compounds, styrenes, indene, dicyclopentadiene, dihydrocyclopentadiene, cumene, benzene, toluene, ethylbenzene and xylenes in fuel oil by headspace GC-MS

Felix Anyakudo^{a, b}, Erwin Adams^a and Ann Van Schepdael^a^aFarmaceutische Analyse, Belgium^bInspectorate Antwerp NV, Belgium

Fuel oils are mostly used in marine applications and in power plants. They are known to contain hazardous volatile organic compounds (VOCs) that are of health and environmental importance. Chlorinated compounds, phenolic compounds, styrenes, indene, dicyclopentadiene, dihydrocyclopentadiene, cumene, benzene, toluene, ethylbenzene and xylenes are some of the hazardous compounds that have found their way into fuel oil through various streams. A static headspace GC-MS method was developed for the analysis of these compounds in fuel oil. Styrene D8 was used as internal standard for quantitation. Linear calibration curves were achieved for all components with determination coefficients $R^2 > 0.99$. Repeatability, limit of detection, limit of quantitation and recovery were reported. Matrix effect caused by fuel oil was minimized by 1:1 dilution with mineral oil. This method was successfully applied to the analysis of commercial samples.

Biography

Felix Anyakudo is a PHD student in the department of pharmaceutical analysis katholiek universiteit Leuven. He is currently the technical development and chromatography manager Inspectorate Antwerp NV. Felix received his bachelor in chemistry from university of Nigeria Nsukka and his master degree in chemistry from katholieke universiteit Leuven, Belgium. He also received additional masters in pharmaceutical science from katholieke universiteit Leuven in 2002. Felix joined Inspectorate Antwerp NV in 2004 and has been actively involved in projects relating to expansion of laboratory capabilities mostly in the field of chromatography. His current research interest lies in the area of method development for the analysis of environmental and pharmaceutical samples using various kinds of chromatographic techniques.

Felix.anyakudo@Kuleuven.be

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