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VENDOR WEBINAR:

Pitfalls in the Analysis of Mineral Oil Residues in Food

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The discussion on mineral oil hydrocarbons (MOH; divided into mineral oil saturated hydrocarbons (MOSH) and mineral oil aromatic hydrocarbons (MOAH) started already in the 1990's when publications reported the possible migration from a food contact material into the packed good. The debate on those findings broadened afterwards and is continuing till today, dealing with the still remaining knowledge gaps of analysis, exposure assessment, hazard characterisation and risk assessment[1,2].

This talk will focus on mainly on the still present pitfalls of the analysis. Although there had been significant advancements, the analysis is still a huge challenge. There is a lack of validated and standardized analytical methods for the whole sample preparation procedure to allow generation of reliable occurrence data for the complex and highly variable matrix "food". State-of-the-art analysis is done using the online-coupling of LC-GC-FID, but analysis reveals only unresolved humps with unknown origin. Therefore, confirmatory techniques using multi-dimensional chromatography, e.g. 2D-comprehensvie GC×GC with various detector types, are used to allow for an adequate substance class identification, recognition of false-positive values and therefore correct quantification of the generated humps. Furthermore, toxicological studies on the identified individual substance classes are needed to fully understand and allow for the health risk assessment for consumers[3].

References:
[1] https://doi.org/10.2903/j.efsa.2012.2704
[2] https://doi.org/10.1021/jf901375e
[3] https://doi.org/10.1016/j.tifs.2021.03.021