



EUROPEAN COMMISSION
JOINT RESEARCH CENTRE

Directorate F - Health, Consumers and Reference Materials (Geel)
Food and Feed Compliance

SUMMARY

of the Roundtable Workshop on the Determination of MOAH in Infant Formula

5 December 2019

Conference Centre Albert Borschette - Brussels

This Roundtable Workshop on the determination of mineral oil aromatic hydrocarbons (MOAH) in infant formula (IF) was organised by the JRC on short-term request of DG SANTE. A total of seventy seven participants representing all stakeholders (official control laboratories, industry and NGOs), DG SANTE, JRC and EFSA (via videoconference) attended the workshop.

It was agreed that laboratories analysing MOAH in IF samples shall follow the corresponding JRC Guidance¹ document. In addition, they shall apply the conclusions of this workshop to further harmonise their analytical procedures with the aim to obtain comparable data for risk assessment and risk management.

The following conclusions regarding analytical requirements for the determination of MOAH in IF were reached:

- Reconstitution of powder IF shall be carried out with water followed by the addition of internal standards, an alkaline digestion of proteins and saponification with ethanolic KOH at 60 °C for 30 min;
- Extraction (liquid/liquid) of total MOAH with *n*-hexane;
- Clean-up of the extract by epoxidation with 20 % purified *meta*-chloroperbenzoic acid (*m*-CPBA) in ethanol, vortex mixing at 40 °C for 15 min, reaction stopped with sodium thiosulphate (Na₂S₂O₃);
- Matrix removal after epoxidation by silica gel column chromatography, elution with dichloromethane;
- MOSH/MOAH separation method by on-line LC-GC, or a manual column-chromatographic method;
- Quantification by LC-GC-FID or GC-FID, application of internal standards;

¹ S. Bratinova, E. Hoekstra (Editors) Guidance on sampling, analysis and data reporting for the monitoring of mineral oil hydrocarbons in food and food contact materials, Luxembourg: Publications Office of the European Union, 2019, ISBN 978-92-76-00172-0, doi:10.2760/208879, JRC115694

- Signal integration of the whole signal interval starting at t_R of the beginning of the n -C₁₀ peak and ending at t_R of the n -C₅₀ peak end after elimination of the sharp peaks above the hump for total MOAH; the C-fractions shall be determined as described in the JRC Guidance¹;
- Identification/confirmation by mass spectrometric methods still needs to be further discussed;
- Results should be reported based on a minimum of two replicate samples;
- Procedure for LOQ estimation was agreed by the participants.