

## **P31: PRELIMINARY STEPS IN VALIDATING AN ICP-MS METHOD FOR SIMULTANEOUSLY ANALYSIS OF FIVE METALS MIGRATION FROM FOOD CONTACT PLASTIC MATERIALS INTO FOOD SIMULANTS**

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Food contact materials are all materials and articles intended to come into contact with food, such as packaging and containers, kitchen equipment, cutlery and dishes, made from a variety of materials including plastics, rubber, paper and metal.

According to Regulation (EU) no. 10/2011, plastic materials and articles shall not release the following substances in quantities exceeding the specific migration limits below: Barium = 1 mg/kg, Cobalt = 0,05 mg/kg, Copper = 5 mg/kg, Manganese = 0,6 mg/kg and Zinc = 25 mg/kg. These metals migration is analyzed into food simulant B (3% acetic acid solution) as stated in the same Regulation.

Determination of trace metal concentrations in the samples was performed with a Perkin Elmer NexION 300Q ICP-MS (Perkin-Elmer Inc., USA) equipped with cross-flow nebulizer and a Quartz torch. The ICP-MS NexION instrument software was used to control all instrument operations including tuning, data acquisition and data analysis. ICP-MS calibration solutions were prepared by dilution of a commercially available multi-element standard (SPEX CertiPrep) in ultrapure water and five-point calibration was performed for all the elements analyzed.

In the first phase of the method validation plan the following parameters were determined: linearity, limit of detection, limit of quantification and recovery. In all cases, correlation coefficients of the calibration curves were higher than 0.996.

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