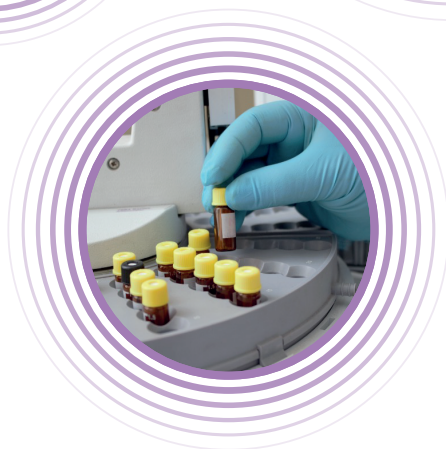
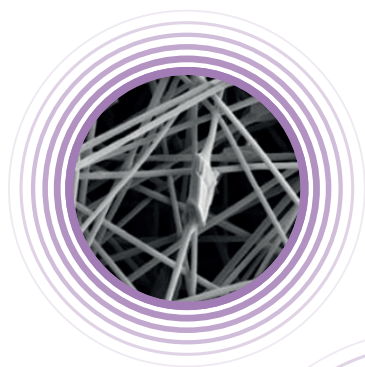




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## PP3-022 Dietary exposure assessment to chemical migrants from food contact coatings of metal cans in the Spanish adult population

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### Abstract

Migrating substances from packaging may affect the safety of the packed food, consequently packaging materials are subjected to risk evaluations. The exposure estimation is a key step in the risk assessment process. In the EU a conservative approach that assumes that a person of 60 kg body weight consumes daily 1kg of food packed in a cubic container of 6 dm<sup>3</sup> is applied, however more realistic approaches are required. This study aimed to estimate the dietary exposure to chemicals migrated from coatings in food metal cans in the Spanish adult population. For that purpose, the dietary exposure was calculated by combining the concentration of the migrant in the food with the food consumption data obtained from the Spanish national dietary survey ENALIA 2. A variety of canned foods including tuna, sardines, lentils, green peas, etc. were selected to carry out the study. Firstly, the polymeric coatings of the metallic cans were characterized by FTIR. The coatings identified were based on epoxy and/or polyester resins. Bisphenols, BADGE and its derivatives were determined in foods packaged in cans with epoxy resins and were analyzed by HPLC-FLD. On the other hand, carboxylic acids, used commonly as monomers in the synthesis of polyesters, such as adipic acid, terephthalic acid, trimellitic acid, etc. were analyzed in foods packaged in cans with polyester resins and analyzed by LC-MS-ESI (-). The dietary exposure of bisphenols, BADGE and derivatives ranged from 0.021 µg/kg<sub>bw</sub> day for BADGE.H<sub>2</sub>O.HCl to 0.492 µg/kg<sub>bw</sub> day for BADGE.H<sub>2</sub>O. For BPA the values varied between 0.026 and 0.055 µg/kg<sub>bw</sub> day. Regarding the carboxylic acids the estimated dietary exposure to adipic acid was 0.181 µg/kg<sub>bw</sub> per day and for terephthalic acid ranged from 0.033 to 0.085 µg/kg<sub>bw</sub> day. In general, our results suggested a low dietary exposure to the migrants evaluated, however, combined exposure to several chemicals should be considered in future studies.

**Keywords:** food contact coatings, metal cans, exposure assessment, migration

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