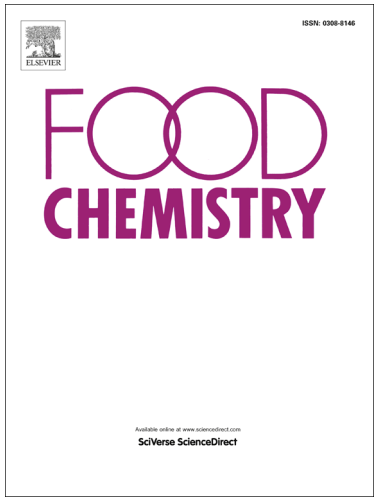

Development and validation of a lc-ms/ms method for the analysis of bisphenol a in polyethylene terephthalate

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DEVELOPMENT AND VALIDATION OF A LC-MS/MS METHOD FOR THE ANALYSIS OF BISPHENOL A IN POLYETHYLENE TEREPHTHALATE

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ABSTRACT

Bisphenol A (BPA) is widely recognized being an endocrine disrupter and it is employed in many food packaging applications. Although it is not intended to take part in the manufacture of polyethylene terephthalate (PET) food grade, the presence of BPA in recycled PET should not be neglected. To satisfy the increasing need to ensure "BPA-free" articles, a liquid chromatography-tandem mass spectrometry method was developed. The crucial step in the sample preparation was the total dissolution/reprecipitation of the polymer. The repeatability of the method (RSD%, n=6) was lower than 7.6%, while HorRat values ranged between 0.3 and 0.5. Limits of detection and quantitation were 1.0 and 3.3 ng g^{-1}, respectively. Recovery ranged from 89 to 107%. The method was applied to 23 samples of virgin and recycled pellets, preforms and bottles. Migration tests were also carried out. Results shown significantly higher levels of BPA in recycled PET.