Phthalates and food-contact materials: enforcing the 2008 European Union plastics legislation

The migration of phthalates into foodstuffs from food-contact materials (FCM) is a well-known source of food contamination. In 2005, the European Food Safety Authority finalized its risk assessment for several of the classical phthalate plasticizers. In their risk management procedure the European Commission transformed the tolerable daily intakes established by the Authority into legislative limits for phthalates in both plastic and food simulants, while taking exposure from other sources into consideration. These limits have been into force since 1 July 2008. A detailed interpretation of the regulation of these substances was agreed upon in the European network of FCM reference laboratories. This paper reports results from a Danish control campaign of samples collected by official food inspectors and analysed by a newly validated analytical method run under accreditation. Samples were from FCM producers, FCM importers and importers of packed foodstuffs from third-party countries. Products containing phthalates above the current limits were found in several categories of FCM: conveyor belts (six of six), lids from packed foodstuffs in glasses (eight of 28), tubes for liquid foodstuffs (four of five) and gloves (five of 14). More than 20% of the samples analysed contained dibutylphthalate (DBP) or di-(2-ethylhexyl)phthalate (DEHP) above the compositional limits of 0.05% and 0.1%, respectively. Analysis of residual phthalates in metal lid gaskets instead of analysis of phthalates in the food when controlling foodstuffs packed outside the European Union proved to be an efficient and simple control method. All findings of phthalates were associated with the use of plasticized polyvinylchloride (PVC).