

DETERMINATION OF PHTHALATES MIGRATED FROM AGGLOMERATED CORK STOPPERS BY HPLC-MS/MS

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Agglomerated stoppers are manufactured from natural cork granules and adhesives. Esters, such as phthalates and adipates are commonly used in adhesives at concentrations of typically 2-5 %. Because of this, and regarding consumer safety, it is necessary to ensure that these compounds do not migrate into the beverage where the cork stopper is used.

A reversed phase HPLC method with MS/MS detection is developed for the separation and quantification of several phthalates into 12 % ethanol, used as simulant of alcoholic beverages. The chromatographic separation was carried out with a Luna C18 (2) HST column (50 × 3.0 mm, 2.5 μm) with a gradient elution of water/methanol with 0.1% acetic acid at 0.3 ml/min.

The phthalates checked were: DBP, DOP, DNIP, DIDP and BBP. The lowest quantification limit, 0.15 mg/kg, was achieved for DBP. Nevertheless, for all cases the limits obtained guarantee the method utility if Directive 2007/19/EC is taking into account.