

MIGRATION FROM CARDBOARD PACKAGING: ANALYSIS OF PHOTOINITIATORS IN CEREALS BY HPLC-MS/MS

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Photoinitiators are used during the application of UV curable inks. These inks are widely used for printing food packaging surfaces. Recently, several notifications of the Rapid Alert System for Feed and Food (RASFF) were published related to high levels of mainly 4-methylbenzophenone in food. Due to this, a simple and rapid LC-MS/MS was validated to determine 2-isopropylthioxanthone (ITX), 4-phenylbenzophenone (PBZ), benzophenone (BZP), 2-Ethylhexyl-4-dimethylaminobenzoate (EHA) and 4-methylbenzophenone (mBZP) in cereals.

Photoinitiators are directly extracted from the homogenized samples with acetonitrile, centrifuged, filtrated and injected. The chromatographic separation was carried out with a Aqua C18 column (150 × 2.0 mm, 3 µm) with a gradient elution of water/methanol with 0.1% acetic acid and acetonitrile at 0.2 ml/min. Quantification was based on an internal standard and the data were acquired in MRM mode.

The lowest levels validated were 3.0 µg/kg for EHA, 10 µg/kg for ITX and PBZ, and 60 µg/kg for BZP and mBZP which guarantee the method utility.