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Czech J. Food Sci.

**Poustková I., Poustka
J., Babička L., Dobiáš**

J.:

Acrylonitrile in food contact materials – two different legislative approaches: comparison of direct determination with indirect evaluation using migration into food simulants

Czech J. Food Sci., 25 (2007): 265-271

In this study, the comparison was carried out of two different legislative approaches for acrylonitrile content assessment in food contact materials based on the former analysis using gas chromatography with nitrogen-phosphorous detection, and the recent evaluation using acrylonitrile migration into food simulants – distilled water, 3% acetic acid, 10% ethanol, and 95% ethanol, based on liquid chromatography with ultraviolet detection. Different

samples were tested: 7 kitchen device parts and 16 acrylonitrile-butadiene-styrene and styrene-acrylonitrile granulates. The level of acrylonitrile content in founded polymer mass was in the range from 0.4 to 25.1 mg/kg in the case of kitchen device parts, and from 6.2 to 283.9 mg/kg in the case of granulates. The highest migration of acrylonitrile in food simulants for kitchen device parts and granulates was found to be 5.2 $\mu\text{g}/\text{dm}^2$ (3% acetic acid) and 9.6 $\mu\text{g}/\text{dm}^2$ (95% ethanol), respectively. A correlation of the results obtained by two different methodologies was tested, but no evident relation was found between acrylonitrile content in the polymer mass and its migrations into food simulants. Based on the realised experiments, no equivalence of the approaches compared was proved.

Keywords:

acrylonitrile monomer; migration; food simulants; chromatography; food

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