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Phthalates released from plastic bottles to inner drinking water which threaten food safety

Saad M Magdy
National Research Centre, Egypt

This work is an attempt to monitor the most recent hazards of phthalates in bottled drinking water recently consumed in Egyptian markets. A simple and reliable method was applied to detect 6 phthalate congeners in bottled drinking water at trace concentrations upto 10 ng/ml. The variables of 3 different brands, bottle size (1, 2 & 5 liters), storage time (0, 1, 3 & 6) were considered in the experimental design. Liquid/liquid extraction using methylene chloride/n-hexane (80:20 v/v) was adopted for isolation and cleanup. Gas Chromatography-Mass Spectrometry (GC-MS) was applied for separation and quantization. The linear range of the GC-MS calibration of 0.3- 1.5 ug/ml with a mean correlation coefficient of 0.98+0.007, the detection limit was <0.1 ug/L and the recovery percentage was 88%. Data showed that <90% of the inspected bottled water samples were phthalates-free. Qualitative data revealed that the contaminated samples contained only 2 out of 6 studied congeners, namely di-2 ethylhexyl phthalate (DEHP) and di-n-octyl phthalate (DOP). While, quantitative data exhibited concentrations not exceed 8 ug/liter of drinking water.

Biography

Magdy M. Saad is a Professor, Department of Food Safety & Contamination, National Research Centre, Egypt

madgdy_saad6@yahoo.com