

**Title** Antioxidants content of and migration from commercial food packages  
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### **Abstract**

**Introduction:** Antioxidants are usually applied into polyolefin as additives in food packages which are made of polyethylene (PE), polypropylene (PP), low- and high-density polyethylene (LDPE and HDPE), polyvinylchloride (PVC), and polyethylene terephthalate (PET). Determination of antioxidant content in polyolefin material can not only give information about their potential migration but measure the plastic's quality. The antioxidants BHA, BHT, Irganox 1010 and Irganox 1076 were studied in this paper to develop a good method for the analysis of the commercial food packages. **Materials and Methods:** Antioxidants were extracted using solid-phase extraction (SPE) with silica C18 cartridge. Extracts were analyzed by high-performance liquid chromatography coupled with ultraviolet detector (HPLC-UV) and high-performance liquid chromatography-mass spectrometry (HPLC-MS) to determine the antioxidant content in the diverse commercial food packages. **Results and Discussion:** The method mentioned above was of high sensitivity, good repeatability and could be used in the rapid analysis of the antioxidants in commercial food packages. Results demonstrated that the migration level of antioxidants from most studied commercial food packages was lower than the SML.