The direct determination of residual Bisphenol A using thermal desorption (TD) – GC/MS

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Bisphenol A (Bis A) is used as a copolymer in the production of polycarbonate (PC). Residual Bis A is often found in the PC matrix, despite efforts to remove it during the manufacturing process. Also, Bis A is formed when PC is exposed to UV radiation. Because it is an endocrine disruptor and of general concern, a number of different analytical protocols are used to quantitatively determine residual Bis A in a number of consumer products.

A simple 2-step analytical protocol to accurately quantitate residual Bisphenol A in polycarbonate will be presented. First, the Bis A is derivatized using TMS. Various derivatives were investigated in order to (1) ensure the complete derivatization of the Bisphenol A and (2) ensure the efficiency of the thermal extraction.

The derivative is thermally extracted from the polymeric matrix using TD-GC/MS. The sample is heated and Bisphenol A is “extracted”; the vapor phase extract is analyzed directly using GC/MS. This work will include precision and accuracy data of the TD method The factors influencing the reporting limit of the method will also be examined. The determination of Bisphenol A in several consumer products will be presented.