Alkylphenol ethoxylates (APEs) are a class of surfactants[1] and most widely used as domestic detergents, ingredients in pesticide formulations, wood preservatives and household products[2]. In the environment, the primary degradation products of APEs include shorter chain APEs and alkylphenols (APs). APs are considered as endocrine disrupter chemicals[3,4] and their determination at trace level is most important, because of their naturally low concentrations in environmental and food samples. Therefore, for current study prior to GC-MS determination, preconcentrations of 4-methyiphenol, 2,4-dimethyiphenol, 4-ethylphenol, 4-t-butyiphenol, o-phenylenphenol, 4-t-octyiphenol, 4-n-nonylphenol were performed with solid phase extraction. The alkylphenols adsorbed on resin as phenolate ions were derivatized with acetic acid anhydride, then derivatized phenols were eluated with hexan and determined by GC-MS. Method reporting limits ranged from 0.12 to 26 µg L$^{-1}$ in water samples, 0.8 to 16 µg L$^{-1}$ in juice samples and percent recoveries for APs were between 76 and 120%. The detection limits are in between 1.796 (4-MP) and 0.005 (4-NP) µg L$^{-1}$.

KEYWORDS: alkylphenol, solid phase extraction, derivatization, GC-MS

REFERENCES: