

Determination of nitric oxide in mainstream smoke by chemiluminescence nitrogen oxide analyzer model 200E

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This study was conducted to evaluate the chemiluminescence nitrogen oxide analyzer model 200E for using nitric oxide (NO) analysis in mainstream smoke. NO analysis in smoke depend on the type of NO analyzer and interface materials. For this study, 20 channel rotary type smoking machine (Borgbaldt RM20 CS) was used. 3 kinds of interface materials, such as gas washing bottle, tedler gas collection bag and teflon vessel were tested in this study. Also, the effects of cigarette number, tar level, and stirring on the analysis of NO were tested. To use chemiluminescence NO analyzer for analysis of NO concentration in mainstream smoke, teflon vessel was the most stable and convenient interface material in case of different smoke generation with sampling flow. Though the cigarette number affected on the analysis of NO concentration in mainstream smoke, the tar level of cigarette did not affect on the analysis of NO concentration in smoke. The effect of stirring during smoking was not significant difference to analyze NO. Comparing to the results of analysis of reference cigarette, Ky2R4F, this method was adaptable to all of cigarette to analyze NO concentration in mainstream smoke. This result indicated that using teflon vessel for interface, 20 cigarettes for one smoking, and stirring condition was the best condition to analyze NO concentration in mainstream smoke by using chemiluminescence nitrogen oxide analyzer model 200E.