

Abstract

This bachelor thesis concerned the optimization of the mobile phase composition for the determination of formate and acetate in various distillates by ion chromatography. The aim of this work was to identify and quantify the anions present, with particular attention paid to formate and acetate. An external calibration method, namely the calibration line method, was chosen to evaluate the formate and acetate content. This type caused a very precise and true determination of the concentration of the anions of interest. Furthermore, the limit of detection (LOD) and limit of quantification (LOQ) values for formate and acetate were determined as part of the validation of the analytical method. The precision of the method was evaluated by the repeatability of the measurements, where a stable value was demonstrated over multiple analyses. The trueness of the method was expressed as recovery. An ion chromatograph from Metrohm was used for this research and provided reliable and accurate results. Optimization of the mobile phase led to improved separation and detection

Keywords: ion chromatography, distillates, formate, acetate, optimization, limit of detection, limit of quantification, identification