

Abstract

A determination of corrosion inhibitors in engine coolants represent a difficult analytical problem due to their different physicochemical properties. Nowadays a lot of instrument methods are needed to determine them. The aim of this work was the development of methods for their determination using only one instrumentation. Capillary zone electrophoreses was chosen as a suitable technique. Three electrophoretic methods for three groups of corrosion inhibitors were developed. Firstly, method for determination of inorganic anions was developed in range from 5 to 50 ppm with limit of detection around 1 ppm. Background electrolyte contains sodium chromate, CTAB and CHES solution. Analytes were detected indirectly at 450 nm. Another method was for determination of organic acids anions. They were determined in range from 5 to 500 ppm. Limit of detection for each analyte was around 1 ppm. Measurement was made with PDC a CTAC water solution. Indirect detection was used for this determination at 350 nm. Last developed method can be use for determination of aryltrizoles in range from 5 to 500 ppm. Limit of detection was around 1 ppm. As a background electrolyte was used sodium tetraborate solution. The developed methods were validated and their suitability for determination of corrosion inhibitors in real engine coolants was confirmed.