A RAPID ANALYSIS METHOD FOR LEAD IN WASTE OIL
BY ENERGY DISPERSIVE X-RAY FLUORESCENCE SPECTROMETRY

M. Akif ÇİMENOĞLU1, Anıl ÇETİNOĞLU1, and Şeref GÜÇER1,2

1 TÜBİTAK Bursa Test and Analysis Laboratory, 16190 Bursa, Turkey
(akif.cimenooglu@tubitak.gov.tr, Tel: 0224 2339440, Fax: 0224 2339445)
2 Department of Chemistry, Faculty of Arts and Science, Uludag University, 16059 Görikle-Bursa, Turkey

Key Words: Waste Oil, Lead, EDXRF

Energy Dispersive X-Ray Fluorescence (EDXRF) Spectrometry is a well established and mature multi-element technique applied in many fields. Qualitative and quantitative analysis can be done rapidly in liquid, solid and powder samples by using this technique [1]. Lead (Pb) is one of the important elements in the classification of waste oil. For instance, according to national directive prepared in order to regulate recycling of waste oil, the first category of waste oil in Turkey should include a lead content less than 100 ppm [2]. The aim of this study is to investigate lead concentration in waste oil without an intense sample preparation. Therefore, TurboQuant liquid method with automatic matrix correction in EDXRF spectrometer (Spectro X-Lab 2000) was used [3]. The method was tested by using an organometallic oil standard material and real waste oil samples were measured. The results of real samples are in good agreement with the results obtained by ASTM D6052 standard test method used in the same spectrometer.

References