

Application News

Energy Dispersive X-Ray Fluorescence Spectroscopy

EDXRF Analysis of Cd, Hg, and Pb in Blood

There is a need nowadays for the rapid estimation of the various types of poisons in medicine that have combined with metals, in order to be able to give emergency treatment through the administering of an antidote. The EDX-700/800 can identify various types of metals after simple preparation of a sample. Furthermore, the testing is non-destructive so the sample can be analyzed with a different analyzer after testing. Shown below are examples of qualitative analysis with the sample in liquid form and with the sample dried on filter paper.

Sample

- A sample of blood to which the anticoagulant Heparin has been added.
- A sample where aqueous solutions for atomic absorption spectrometry with 1000ppm of Cd, Hg, and Pb has been dropped and mixed into the blood and prepared so that the concentrations of Cd, Hg, and Pb are 10 ppm.

Sample Preparation

(1) Liquid Cell Method

Approximately 10ml of the sample was poured into the liquid sample receptacle and sealed with 5 μ m polypropylene film.

(2) Filter Method

After dropping 100 μ l of the sample onto filter paper, the paper was dried for 5 minutes at 80°C.



