

Determination of fluoride by ion-selective electrode

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The fluoride determination is generally required for the studies of interference in separation processes and analytical methods. A ion-selective electrode method for the determination of fluoride from the leaching of phosphate rocks with inorganic acids was developed [1].

The fluoride electrode is a solid-state electrode with a membrane of lanthanum fluoride treated with rare earths to increase its conductivity. Under appropriate conditions, it can respond to changes in concentration of fluoride in the solution [2] [3].

In this method an aliquot of the sample is passed through a Dowex 50w-x8 column. The effluent is then collected and an aliquot is taken. The pH is adjusted with buffer TISAB, then the ionized fluoride measured and compared with a analytical curve (Figure 1).

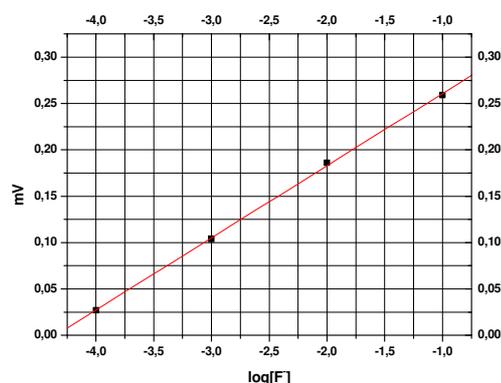


Figure 1. Fluoride analytical curve.

The described method is simple, accurate and reproducible. This method is especially applicable to the determination of fluoride from the leaching of rocks with inorganic acids.

References

- [1] Metrom Application Bulletin N°82/3. Determination of the fluoride with the ion-selective electrode.
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- [3] PALEI, P. N. Analytical Chemistry of Uranium. London. Ann Arbor-Humphrey Science Publishers, Inc., 1970