

# Determination of fluoride by ion-selective electrode

A. S. F. de Sousa<sup>1</sup>, I. C. T. S. Oliveira<sup>1</sup>, C. S. de Jesus<sup>2</sup>, L. S. Peres<sup>2</sup>.

e-mail: [alvaro@ien.gov.br](mailto:alvaro@ien.gov.br)

<sup>1</sup> Division of Nuclear Engineering - IEN

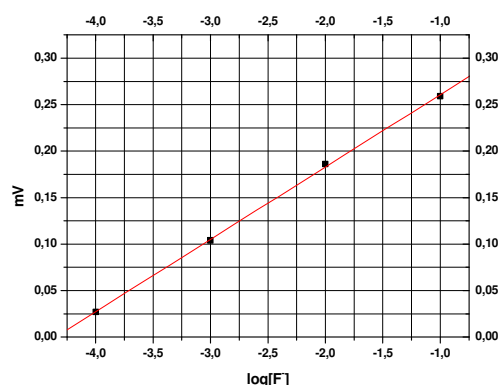
<sup>2</sup> INB

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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.
- [2] Thermo Scientific. User Guide. Fluoride Ion Selective Electrode.
- [3] PALEI, P. N. Analytical Chemistry of Uranium. London. Ann Arbor-Humphrey Science Publishers, Inc., 1970