CAPSULES
preliminary notes and applications from Bioanalytical Systems, Inc.

Determination Of Iodide And Thiosulfate

Purpose

Determination of iodide and thiosulfate by ion-pair chromatography with UV and EC detection.

Existing Methods

Classical ion chromatography. However, microparticulate reverse-phase columns are more efficient and cheaper than ion-exchange columns.

Reference

Determination of Iodide and Thiosulfate by Paired-Ion, Reversed-Phase High-Performance Liquid Chromatography with Ultraviolet Absorbance, Electrochemical and Conductimetric Detection, M. Lookabaugh, I.S. Krull and W.R. LaCourse, J. Chromatogr., 387(1987) 301-312.

Conditions

Detector: BAS Dual 4B/17
Electrode: BAS dual series glassy carbon
Potential: iodide: upstream +1.05 V, downstream -0.15 V, vs. Ag/AgCl; thiosulfate: single electrode +1.05V
Column: Econosphere C18 (250 x 4.6 mm)
Mobile Phase: 0.005 M tetrabutylammonium sulfate (TBAHS) in methanol: phosphate buffer (15:85), pH 7.0. Flow rate was 1.0 mL/min.
Detection Limit: iodide: 40 ppb EC, 10 ppb UV
thiosulfate: 10 ppb EC, 50 ppb UV

Sample Preparation

Potassium iodide and sodium thiosulfate standards were used.

Notes

Electrochemical detection of iodide was highly specific because of its characteristic upstream and downstream response.

For UV detection, use a wavelength of 223 nm for iodide and 212 nm for thiosulfate.

This determination can be duplicated using the BAS 400 Liquid Chromatograph.

Professor Ira S. Krull is a member of the BAS Scientific Advisory Board. He is a frequent contributor to our journal Current Separations.

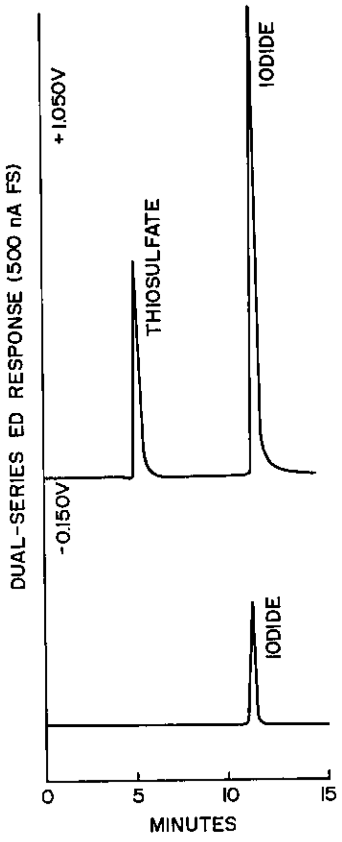

Figure 1. Chromatograms from upstream and downstream electrodes.