

## عنوان مقاله:

Study on the solid phase extraction of Co(II)-IIDE chelate with C18 disk and its application to the determination of trace cobalt

## محل انتشار:

همایش ملی مهندسی شیمی (سال: 1388)

تعداد صفحات اصل مقاله: 9

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## خلاصه مقاله:

A sensitive, selective and rapid method has been developed for the determination  $\mu\text{g l}^{-1}$  level of cobalt based on the rapid reaction of cobalt(II) with Isopropyl 2-[(isopropoxy carbothioyl) disulfanyl] ethanethioate chelate (IIDE) and the solid phase extraction (SPE) of the colored chelate with Waters Porapak Sep-Park C18 disk. The Isopropyl 2-[(isopropoxy carbothioyl) disulfanyl]ethanethioate chelate can react with Co(II) in the presence of pH 4.2 acetic acid - /sodium acetate buffer solution and cetyl trimethylammonium bromide (CTMAB) medium to form a violet chelate of a molar ratio 1:2 (cobalt to Isopropyl 2-[(isopropoxy carbothioyl) disulfanyl]ethanethioate chelate. This chelate can be retained on Waters Porapak Sep-Park C18 disk quantitatively when they passed the disk as aqueous solution. After the enrichment finished, the retained chelate can be eluted from disk by 2.5 ml of ethanol (contain 5% acetic acid). In the measured solution, the molar absorptivity of the chelate is  $1.58 \times 10^5 \text{ l mol}^{-1} \text{ cm}^{-1}$  at 635 nm, and Beer's law is obeyed in the range of 0.01-0.4  $\mu\text{g ml}^{-1}$ . The relative standard deviation for 11 replicate sample of 0.01  $\mu\text{g.ml}^{-1}$  level is 2.54%. The detection limit is 0.01  $\mu\text{g ml}^{-1}$  (in original samples). This method can be applied to the determination of  $\mu\text{g ml}^{-1}$  level of cobalt in drinking water with satisfactory results.

## کلمات کلیدی:

Cobalt; Solid phase extraction spectrophotometry; Isopropyl 2-[(isopropoxy carbothioyl) disulfanyl] ethanethioate (chelate(IIDE)

## لینک ثابت مقاله در پایگاه سیویلیکا:

<https://civilica.com/doc/80040>

