

Determination of trace amounts of cobalt by solvent extraction-second derivative spectrophotometry

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A sensitive derivative spectrophotometric method is described for the determination of microamounts of cobalt based on the integration of liquid-liquid separation and reaction, in dichloroethane, of the analyte with 3-(4-phenyl-2-pyridinyl)-5-phenyl-1,2,4-triazine (PPT) and 2,4,6-trinitro-phenol (picric acid). Cobalt was thus determined in the range 7.2-500 ng/ml. The method has a high selectivity with a detection limit of 2.2 ng/ml. The relative standard deviations were 3.2 and 1.5% for 20 and 100 ng/ml cobalt, respectively. The proposed method was applied to the determination of the analyte in vitamins. © 1993.