

# Spectrophotometric Determination of Calcium with Chlorophosphonazo III in the Presence of Yttrium and Aluminum

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*The conditions for the complexation of calcium, yttrium and aluminum with chlorophosphonazo III and EDTA were studied for the purpose of developing a method for Ca determination in the presence of predominant amounts of Y and Al. EDTA was used as the masking agent. Optimal conditions for masking of yttrium and aluminum and for calcium determination were determined. It has been experimentally established that a 15-fold excess of EDTA is sufficient to complete masking of Al(III), and no less than 65-fold excess EDTA is necessary for the masking of Y(III) at an optimum pH of 3.05–3.25. The sensitivity of the calcium determination in the presence of a more than 100-fold molar excess of yttrium and aluminum is 0.08 µg/ml. The concentration of Y(III) and Al(III) ions in the analyzed solution should not exceed  $5 \cdot 10^{-4}$  mol/l. The relative standard deviation at the calcium determination in Cr,Ca-doped yttrium aluminum garnet ceramic does not exceed 0.1.*

**Keywords:** spectrophotometry, calcium, chlorophosphonazo III, yttrium aluminum garnet