

## Spectrophotometric Determination of Yttrium with Pyrocatechol Violet Reagent – Application to Water

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### ABSTRACT

A simple and sensitive procedure for spectrophotometric determination of yttrium (III) in aqueous solution has been developed. The method is based on the reaction of yttrium with pyrocatechol violet at pH 7.6 to form a blue-violet complex which has maximum absorption at 595nm. Beer's law is obeyed over the concentration range 1-100  $\mu\text{g}/25\text{ml}$ , (i.e., 0.04-4.0ppm) of yttrium with a molar absorptivity of  $8.365 \times 10^3 \text{ l.mol}^{-1}.\text{cm}^{-1}$ . The accuracy (relative error) is (+0.33— -0.31%) and relative standard deviation is better than  $\pm 1.63\%$ . The method has been successfully applied to the determination of yttrium in river and sea water .

7.6

100 1

$10^3 \times 8.365$

)

(%0.33+ 0.31-)

(

595

/ 4.0-0.04)

)

%1.63±

25/

.1- .1-

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