



**Development of Extractive Spectrophotometric Method For The
Determination of Ruthenium (III) With Schiff Base 2-[(2-
Hydroxyphenylimino) Methyl]-4-Nitrophenol**

Datta B. Mandhare and Vasant D. Barhate*

*V.E. S. College of Art, Science and Commerce, Sindhi Society, Chembur, Mumbai - 400071, **INDIA**

Email: vasantbarhate@yahoo.co.in

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ABSTRACT

A simple spectrophotometric method has been developed for the determination of ruthenium (III) by using Schiff base 2-[(2-hydroxyphenylimino) methyl]-4-nitrophenol [HPIMNP]. HPIMNP extracts Ru (III) quantitatively (99.01%) into Xylene from an aqueous solution of pH 4.0 to 6.0 followed by digestion on boiling water bath for 20-25 minutes. The xylene extract shows an intense peak at 570 nm (λ max). Beer's law is obeyed over the Ru (III) concentration range 1.0 - 14.0 $\mu\text{g mL}^{-1}$. The molar absorptivity and Sandell's sensitivity of coloured species are 1587.46 $\text{L mole}^{-1} \text{cm}^{-1}$ and 0.067 $\mu\text{g.cm}^{-2}$ respectively. The composition of extracted species is found to be 1:3 (Ru: HPIMNP) by Job's continuous variation and Mole ratio method. Interference by various ions has been studied. The proposed method had been applied for determination of Ru (III) in titanium alloy samples.

Keywords: Extractive Spectrophotometry, Ruthenium (III), Alloy samples, 2-[(2-hydroxyphenylimino) methyl]-4-nitrophenol [HPIMNP], Schiff Base.
