



THE CHARACTERIZATION AND THE SYNTHESIS OF A NEW COORDINATION COMPOUND FOR REMOVAL OF Cr(III) FROM WASTEWATERS

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Abstract

The Schiff base N,N'-(salicylidene)-methylenediamine, known as Salmen in combination with Cr(III) forms at pH = 4.5 a greenish precipitate, which is stable at room temperature but decomposed on heating. The study of the Infrared spectra, Electron Spin Resonance (ESR), X-ray diffraction and thermogravimetry has pointed out that the precipitation form is a complex, while the molar ratio showed that the combination rate of Cr(III): N,N'-bis(salicylidene)-methylenediamine is 1:1. The new complex crystallizes in the triclinic systems. This precipitation reaction can be used as a method for the gravimetric determination of Cr(III) with N,N'-bis(salicylidene)-methylenediamine, known as Salmen. The precipitate was dried in vacuum and weighed as C₁₅H₁₃O₃N₂Cr. The overage relative error is ± 0.33%. Salmen can be used in order to precipitate and to recover the chromium from wastewaters consequential to the tanning of natural fells. Key words: Chromium(III), gravimetric determination, Salmen.

Key words: Cr(III), Electron Spin Resonance, wastewater

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