



**Application of Noncyclic 2,2'-[ethane-1,2-diylbis(iminomethanediyl)]
diphenol for heavy metal extraction (Mn^{2+} , Fe^{3+} and Co^{2+})**

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ABSTRACT

Noncyclic 2,2'-[ethane-1,2-diylbis(iminomethanediyl)]diphenol (EDIMD) bearing amine linkages and hydroxyl groups have been designed and synthesized for use as an extracting agent for the heavy metals and its concentration estimation on spectrophotometric method. The composition of the complex between EDIMD and metals (Mn^{2+} , Fe^{3+} and Co^{2+}) was elucidated by continuous Job's variation method. The solvent variation study shows that the butan-1-ol was suitable diluent and other diluents were not effective for EDIMD. The metals present in waste water were extracted in butan-1-ol and transferred to organic liquid. The effects of solvent, time, pH, ligand and salt variation on metal extraction been studied. The parameters are optimized for highest extraction ability of EDIMD for metal (Mn^{2+} , Fe^{3+} and Co^{2+}). The more important ligand reused study has been established and extraction efficiency was observed well for first, second and third extraction cycles. The above developed method is directly applied to real sample such as industrial sample and industrial waste water effluent.

Keywords: Spectrophotometric method, heavy metals, Job's continuous variation method.
