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Letter to Editor

PICRIC ACID; AN ALTERNATIVE SPECTROPHOTOMETRIC REAGENT FOR ESTIMATION OF EDTA SALTS

There are many reagents and techniques by which EDTA can be estimated in water as well as in Raw material. We standardized more quick and easy method for EDTA estimation. It has been reported that PA forms charge transfer complex with compounds. The stability of charge transfer complex depends upon the nature of compound, but mostly these are unstable. PA and EDTA complex show absorbance maximum at 450nm. The aim of our present study was to standardize an alternative method to estimate EDTA in water sample and in pure form by using the complex absorbance property at 450 nm. The 8,12,18,20 and 24 ppm concentration levels were prepared from standard stock solution of EDTA. PA of concentration 0.5gm in 100ml was prepared in chloroform. In each flask 1ml of PA was added and make up the volume of each flask with acetonitrile. The Standard plot was prepared by using EDTA -SALT and recorded Optical density at 450nm (Fig 01). The concentration level of PA was always high then EDTA-SALT in reaction mixture. However excess PA did not interfere at this wave length (450nm).

The EDTA alone Did not show any absorbance in the range of 220 – 400 nm Fig 02 (a, b), but EDTA-PA complex showed an absorbance maximum at 450nm Fig-022(c). We also checked the necessary optimization factors time, temperature and solvent effect, which are directly or indirectly effect the stability and formation of EDTA-PA complex. Stability study of complex with time, and Solvent Effect at ambient temperature are represented respectively in Fig 03, and Fig 04.

Fig-01;- Standard Curve of EDTA (Salt)

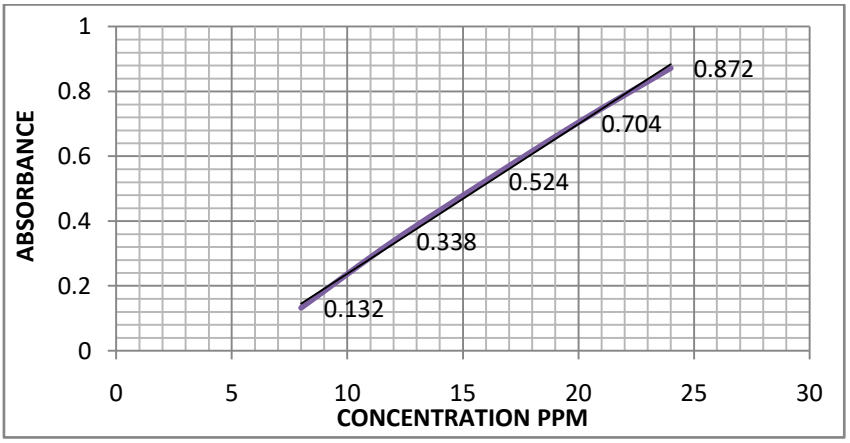


Fig 02(a,b);- Spectrogram of PA (346nm) and EDTA respectively

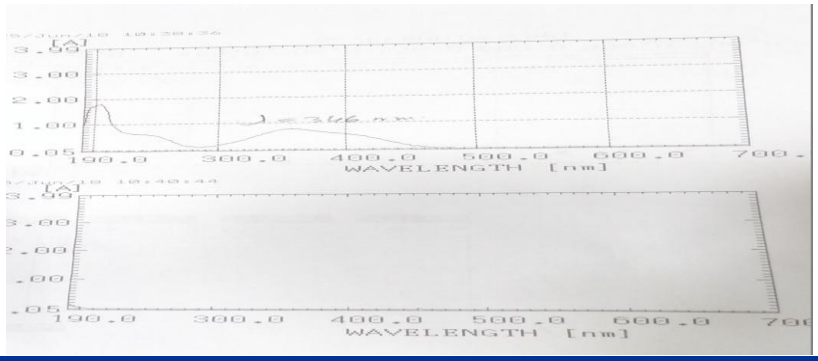


Fig-02(c);- Spectrogram of EDTA-PA complex

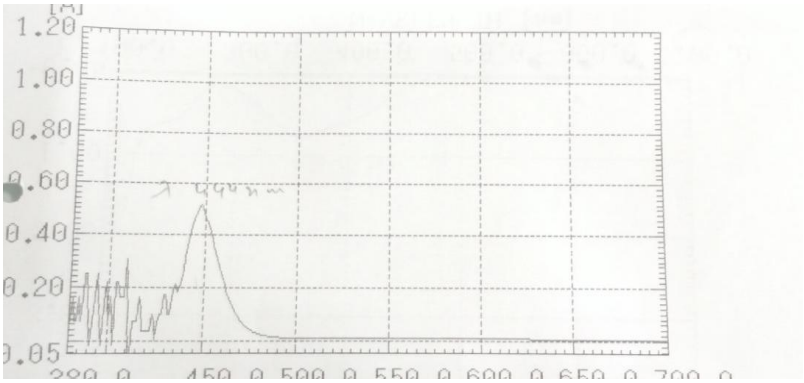


Fig 03;- Breaking of(Edta -Picric acid) complex with time

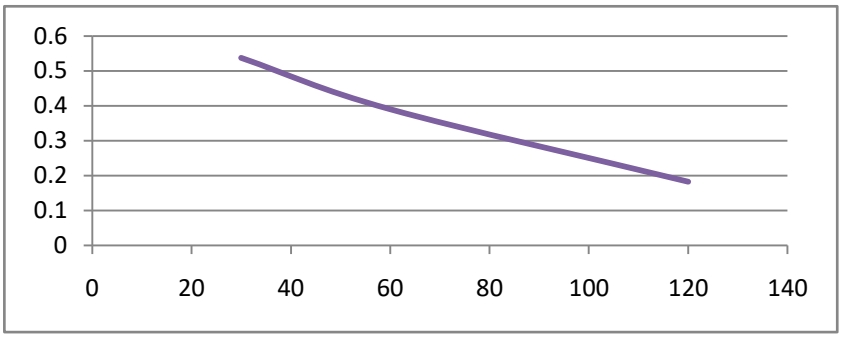
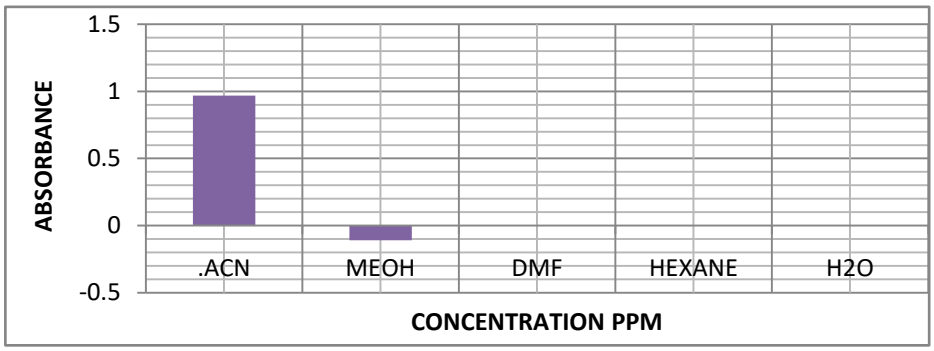


Fig-4;- Suitable Solvent for complex formation



ACN= Acetonitrile
MeoH = Methanol
DMF = Dimethylformamide

From these results, we conclude that this alternate method is more simple then earlier methods. The study suggests the possibility of estimation of EDTA in raw material and in water samples.

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