



ChemTech

## International Journal of ChemTech Research

CODEN(USA): IJCRGG, ISSN: 0974-4290, ISSN(Online):2455-9555

Vol.11 No.07, pp155-163,2018

### Study of Hydrolysis of Mono-3,5-Dimethylaniline Phosphate via Conjugate Acid species

Shashibala Kindo<sup>1</sup> and S. A. Bhoite<sup>1\*</sup>

<sup>1</sup>School of Studies in Chemistry, Pt. RavishankarShukla University, Raipur -492010, Chhattisgarh, India

**Abstract:**Hydrolysis of phosphate ester is one of the most fundamental chemical and biochemical reaction. In present investigation, kinetic study of hydrolysis of mono-3, 5-dimethylaniline phosphate has been carried out in 0.1-0.7 mol dm<sup>-3</sup> hydrochloric acid at 50°C in aqueous medium. The log rate profile has rate maxima at 4.0 mol dm<sup>-3</sup> hydrochloric acid. The effect of ionic strength, temperature and solvent on the rate of hydrolysis has been studied. The results show that mono-3, 5-dimethyl aniline phosphate is reactive mainly via conjugate acid species. Molecularity and order of reaction have been supported by different concepts such as Zucker Hammett hypothesis, Bunnett and Bunnett-Olsen parameters and Arrhenius parameters. The probable reaction mechanism has been suggested for the hydrolysis of monoester.

**Key word:** Hydrolysis, mono-3, 5-dimethylaniline phosphate, Ionic strength, bond fission.

S. A. Bhoite *et al* //International Journal of ChemTech Research, 2018,11(07): 155-163.

DOI= <http://dx.doi.org/10.20902/IJCTR.2018.110719>

\*\*\*\*\*