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## Nucleophilic Substitution Reactions of 2,4-Dinitrophenyl Acetate With Hydrazine and methanol Solvent Effect

Mahmoud F Ibrahim <sup>(1)</sup> Hanaa A Abdel-Reheem <sup>(2)\*</sup> Ezzat A Hamed <sup>(3)</sup>

<sup>(1)</sup> Department of Chemistry, Faculty of Science, Alexandria University, Alexandria, Egypt.

<sup>(2)</sup> Department of Chemistry, Faculty of Science, Omar Al-Mukhtar University, Bayda, Libya.

<sup>(3)</sup> Department of Chemistry, Faculty of Science, Alexandria University, Alexandria, Egypt.

\* Corresponding author

### Abstract

*The generally accepted mechanism for nucleophilic aromatic substitution (the S<sub>N</sub>Ar mechanism) is an addition-elimination mechanism and involves the formation of a Meisenheimer type of intermediate. The hydrazinolysis of 2,4-dinitrophenyl acetate in methanol proceeds exclusively through acyl-oxygen scission by a concerted mechanism. The process depends on the basicity of the leaving group and its steric hindrance as well as the possible intramolecular hydrogen bond in the transition state. The reactions of 2,4-Dinitrophenyl Acetate with hydrazine obeyed pseudo-first-order rate constants ( $k_{obs}$ ). The linearplot of  $k_{obs}$  vs. amine concentration indicated that there is no base-catalysis. The large negative  $\Delta S^\ddagger$  value indicates a rigid transition state or great participation of methanol molecules in the activated complex.*

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2,4-Dinitrophenyl Acetate, Methanol Solvent, Hydrazine and Nucleophilic

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