



Synthesis of 2-Methoxy-5-Nitro-2-(Phenylamino) Ethanoic Acid; 2, 4-Dinitrophenoxyethanoic Acid and Pyridyl-2-Aminoethanoic Acid

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Abstract : In organic synthesis, use is made of appropriate starting materials that would give high yield of the desired products. 2-methoxy-5-nitroaniline (0.2 mol), 2,4-dinitrophenol (0.5 mol) and 2-aminopyridine (0.42 mol) were used as starting materials or reactants in the preparation of 2-methoxy-5-nitro-2-(phenylamino)ethanoic acid; 2, 4-dinitrophenoxyethanoic acid and pyridyl-2-aminoethanoic acid. These substrates were treated with appropriate quantities of chlorinated acetic acid with a base, preferably sodium hydroxide in the presence of nitrobenzene, which was an inert organic solvent. The resulting products 2- Methoxy-5-nitro-2-(phenylamino) ethanoic acid (0.17 mol); 2, 4-Dinitrophenoxyethanoic acid (0.27 mol) and Pyridyl-2-aminoethanoic acid(0.29 mol) were purified by crystallization and elution by column chromatography packed with silica gel and alumina using dichloromethane. Pure amorphous powders were obtained respectively. These compounds proved to be useful precursors for indigo blue dyes when they were fused with admixture of sodium hydroxide, potassium hydroxide and sodamide. These compounds were very good starting materials/ substrates or precursors for indigo dyes. The structures of these compounds were established by spectral analysis.

Keywords : analysis, dye, extraction, intermediates, precursor.

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