The PREPARATION of bulky aromatic amines by superbase promoted side-chain ethylation: Applications and properties

R. R. Steele,* S. Georgakopoulos, I. D. Kostas, C. G. Scerrtas


A range of ring-alkylated primary, secondary and tertiary amines with varying degrees of steric crowding has been prepared by the side-chain alkylation by ethylene of the corresponding methyl or ethyl substituted amines promoted by the strong base system n-BuLi/Li/K(OCH_2CH_2)NMMe_2/Mg(OCH_2CH_2)OEt_2.

Representative products are shown below. Ethylation of primary amines by this procedure is only successful for 2,6-dialkylanilines and only occurs at the ortho alkyl groups, whereas for secondary and tertiary amines a wider range of starting materials can be applied. Methyl groups are either mono- or dimethylated, depending on the position of the other substituents, while ethyl groups are mono-ethylated only.

These products complement a series of bulky amines with similar substituents previously reported by us. They were obtained from the corresponding methylbenzenes via a 3-step, ethylation, nitration, reduction sequence.

These new primary amines have been used for the preparation of Schiff base ligands. In spite of the steric crowding in the latter compounds, they readily form complexes with platinum and palladium(I), which are currently being assessed for their catalytic activity in carbon-carbon coupling reactions.

Acknowledgements: The financial support of the Greek General Secretariat for Science and Technology is hereby acknowledged.