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ROUTES TO FLUOROAROMATICS

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The nucleophilic fluorine transfer route forms the basis of many important reactions including those involving the preparation of selectively fluorinated aromatic molecules. Both halogen (typically chlorine) and nitro are potentially useful leaving groups for exchange reactions of this type. The potent source of nucleophilic fluorine, tetrabutylammonium fluoride can be used to study the ineraction and reaction of F^- with target substrates. Thus the powerful electrophilic nitroaromatic, 1,3-dinitrobenzene easily forms a variety of Meisenheimer - type intermediates whereas sterically hindered nitroaromatics do so less easily. These interactions can be conveniently studied by electronic absorption spectrophotometry and N.M.R. spectroscopy. 'Anhydrous' tetrabutylammonium fluoride can react with electronically activated nitroaromatics at room temperature to give fluoroaromatics. Such reactions serve to illustrate the potentially excellent leaving group ability of the nitro group when suitably activated.