Synthesis of 4,5-Dihydroisoxazoles from Arylcyclopropanes and Nitrosyl Chloride

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Abstract - Arylcyclopropanes readily react with nitrosyl chloride in liquid sulfur dioxide to give the corresponding 5-aryl-4,5-dihydroisoxazoles in good yield. The reaction is most selective at –40 to –50°C; at higher temperature, the contribution of side processes becomes appreciable. The complete conversion of arylcyclopropanes containing donor substituents is attained with the use of 1.5 equiv of nitrosyl chloride, while the rate of the transformation of compounds with nonactivated aromatic rings considerably increases on raising the molar ratio NOCl–arylcyclopropane.