

## ABSTRACT

Acrolein phenyl hydrazone react with N-aryl or alkyl maleimides to give pyridine 2,3-carboxamides. The reaction is believed to occur via an aza diene Diels-Alder reaction. The intermediates were not isolated and probably the rapid loss of the phenyl hydrazine and air oxidation gives the pyridine product.

Furfural phenyl hydrazone react with N-aryl(alkyl) maleimides in the furan ring when an equimolar mixture is refluxed in benzene. The primary Diels-Alder adduct is not isolated and it readily fragments with the elimination of a water molecule with concurrent cycloaromatization. The reaction with excess of maleimide gives a mixture of two adducts. The reaction with excess maleimide gives a mixture of two adducts, the major product is the same product found in the equimolar reaction and the minor product is the product resulting from a double cycloaddition. The second equivalent of maleimide react at the azomethine imine tautomeric form of the hydrazone function in a 3+2 dipolar cycloaddition.

Aryl N-sulphinylamines react with 1,4-naphthoquinone to give 2-aryl sulphimoyl, 1,4-naphthoquinones. The reaction is believed to occur via an initial 2+2 cycloaddition of the N=S bond of the sulphinylamine with the alkene of the 1,4-naphthoquinone, followed by fragmentation of the 1,2-thiazitidinone intermediate with a 1,3-H shift. Aryl N-sulphinylamines adds regiospecifically to 5-hydroxy 1,4-naphthoquinone to give 3-aryl sulphimoyl, 5-hydroxy, 1,4-naphthoquinone.