NICKEL CHLORIDE, AN EFFECTIVE CATALYST FOR THE DECARBONYLATION OF 2-ETHOXALYLCYCLOHEXANONE

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2-Carbethoxycyclohexanone (I) is widely used as a starting material in syntheses of various organic compounds. One of the most widespread methods for obtaining I is the decarbonylation of 2-ethoxalylcyclohexanone (II) in a vacuum in the presence of powdered Fe (2 h, 165-175°C) [1]. The significant shortcomings of this method for the decarbonylation of II include the necessity of strict observance of the conditions of the process and the unstable yields of the desired product. We have found that the decarbonylation of II to form I can be carried out with high and stable yields without the observance of special precautions, if $NiCl_2$ serves as the catalyst.

A 7.5-g portion of II was heated at atmospheric pressure in the presence of 0.1 g of $NiCl_2 \cdot 6H_2O$ until the evolution of CO ceased (15 min at 160-165°C and 10-15 min at 175-180°C), and then the product was vacuum distilled. This yielded 5 g (87%) of I, bp 115-118°C (12 mm), n_D^{20} 1.4750, R_f 0.74 (TLC, Silufol UV_{254}, 1 : 1 benzene—acetone). IR spectrum (KBr, ν, cm^{-1}): 1620, 1650, 1715, 1750.

LITERATURE CITED

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