CONVERSION OF 3-HYDROXYQUINOLINE TO 2-HYDROXYQUINOLINE

K. M. Dyumaev and E. P. Popova

UDC 547.831.7

It has been found that 3-hydroxyquinoline (I) is converted to 2-hydroxyquinoline (II) on heating at 220-300°C in aqueous or aqueous alcohol solutions of alkalis. Thus 2 g (0.014 mole) of I, 40 g of NaOH, and 27 ml of water were heated at 300° for 6 h in a steel autoclave. Dilution of the reaction mixture with water and acidification to pH 4 with hydrochloric acid gave 1.76 g (88%) of II with mp 199-200° (from aqueous alcohol). The structure of II was proved by comparison of the IR and UV spectra and conversion to 2-chloroquinoline by the action of phosphorus oxychloride. The reaction does not involve the formation of 2,3-dihydroxyquinoline (III), since III does not change under the reaction conditions. One cannot exclude the possibility that there is initial formation of the 2,3-dihydroxy-2-hydroquinoline anion, which is converted to II through a number of steps with splitting out from the 3 position of a hydroxide ion rather than a hydride ion, as is observed in the Chichibabin reaction.

Scientific-Research Institute of Organic Intermediates and Dyes, Moscow. Translated from Khimiya Geterotsiklicheskikh Soedinenii, No. 6, p. 859, June, 1973. Original article submitted October 16, 1972.