SYNTHESIS OF N-VINYL-2,3-DIHYDROINDOLE

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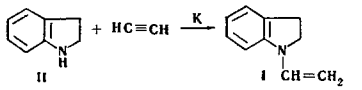
In recent years, N-vinyl derivatives of the pyrrole series, which are capable of readily polymerizing, forming charge-transfer complexes, or of exhibiting physiological activity, have been attracting great attention. Among them particular interest is presented by N-vinylindoline (I). We have developed a method for the synthesis of I by the reaction of 2,3-dihydroindole (indoline) (II) with acetylene under pressure in the presence of metallic potassium.



The vinylation reaction was carried out in a rotating autoclave in anhydrous dioxane at 170–175° C for 30 min. The dioxane was eliminated from the cooled vinylation products under reduced pressure, and the residue was distilled under a higher vacuum in a current of nitrogen. The yield of I was 65–70%. Yellowish-oily liquid with bp 94–96° C (5 mm); n_D^{20} 1.6125, polymerizing on standing. Found, %: C 82.03, 81.93; H 7.76, 7.79; N 9.62, 9.45. Calculated for $C_{10}H_{11}N$, %: C 82.71; H 7.63; N 9.64.

The structure of I was shown spectroscopically. The IR spectrum contains a band at 1640 cm^{-1} showing the presence of a ring vinyl group.

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