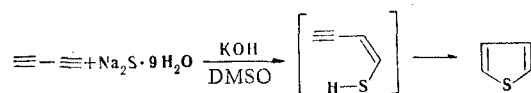


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A method for the synthesis of thiophene derivatives that is based on the reaction of disubstituted diacetylenes with hydrogen sulfide in an alkaline medium is well known [1]. However, an attempt to similarly obtain thiophene from diacetylene and $\text{Na}_2\text{S}\cdot 9\text{H}_2\text{O}$ in methanol did not lead to preparatively acceptable results [2].

We have found that in the KOH-dimethyl sulfoxide (DMSO) superbases medium the yield of thiophene from diacetylene and hydrated sodium sulfide reaches 94%, and its purity exceeds 99%.



A 1.9-g (0.038 mole) sample of diacetylene was passed in the course of 75 min through a vigorously stirred mixture of 20.0 g (0.083 mole) of $\text{Na}_2\text{S}\cdot 9\text{H}_2\text{O}$, 4.5 g (0.08 mole) of KOH, and 65 ml of DMSO heated to 55°C. Distillation of the reaction mixture gave 3.0 g (94%) of thiophene. Its identity and purity were proved by the results of elementary analysis, gas-liquid chromatography, NMR spectroscopy, and comparison of the physical constants.

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