

MODERNIZATION OF THE KNOWN METHODS FOR THE PREPARATION OF ACETYLENIC COMPOUNDS

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The compounds with the acetylene moiety always attracted attention of organic chemists due to their extremely high reactivity and valuable practical properties. Among these, acetylene alcohols and ketones, which exhibit increased biological activity, occupy the leading place.

However, despite the wide use of α -acetylenic alcohols and α -acetylenic ketones, the methods for their preparation have certain limitations, due either to the use of inaccessible starting compounds or to the occurrence of side reactions during the synthesis. Therefore, the search for new opportunities for the synthesis of such compounds is an urgent task.

We have carefully studied all previously known methods and proposed more technologically advanced conditions in order to improve the synthesis procedures for such compounds. So, the previously known method for the synthesis of tertiary acetylenic alcohols by the interaction of organomagnesium compounds with dimethyl(chloroethynyl)carbinol had the main disadvantage. The reaction was carried out in fire-hazardous diethyl ether. We have proposed a safer method of carrying out the reaction in hydrocarbon media in combination with an equimolar amount of tetrahydrofuran. The corresponding alkynes-1 can be obtained by alkaline cleavage of the resulting reaction products.

The method for the preparation of propynones by alkynylation of anhydrides and carboxylic acid chlorides with trichloroalkynylstannanes has been developed. We have established that the proposed method is the most advantageous one in obtaining short-chain acetylene ketones. It has also been found that an excess of the carbonyl compound makes it possible to increase the yield of the target ketones by 8-10%. Arylacetylenes are the most active in this reaction, but *n*-alkylacetylenes and acetylenes with substituents containing unshared electron pairs are of little use due to side reactions that occur when interacting with the tetrachlorostannane formed.