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Widely unknown chemistry of ammonium salt - 1

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Statement of the Problem: I had in my mind the fact that most of our publications are not known to a wide circle of chemists in the world before suggesting the title of this presentation. The articles were published in local journals mostly, although they are cited in different abstracts, but they do not have any required attention. We have already have been use the founded processes for a long time in practice.

Methodology & Theoretical Orientation: During our work on the alkylation of organic acids containing carbonyl groups – as beta-diketones, it was decided to study the possibility of alkylation of quaternary ammonium salts (QUAT) such as trimethylphenacyl ammonium bromide. We have exhausted the fact that that QUAT studied can't undergoes to Hofmann elimination and rearrangements (Sommele-Hauser, Stevens) also under the milder basic conditions.

Findings: It turned out that really studied QUAT alkylated by benzyl chloride. However, following the alkylation, the newly formed salt is eliminated to forms a chalcon. This process had been opened in last quarter of last century. This process many time have been using in our laboratory to obtained chalcone type compounds.

Conclusion & Significance: Along with the chalcon (alkylation-elimination product), the products of hydrolysis of benzyl chloride-benzyl alcohol and dibenzyl ether. Analogous transformations have also taken place in the case of a number of other salts with trimethyl and not active beta hydrogen containing fourth group. The experiments show that elimination will occur rapidly, it is impossible to single out the original product of alkylation of the salt.

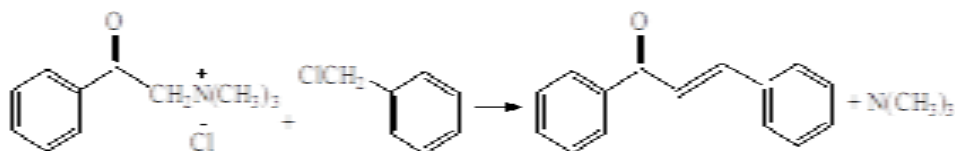


Figure 1: We have named this reaction as alkylation-elimination in QUAT

Recent Publication

1. Gagik Torosyan and Dezy Hovhannisyanyan (2011) Synthesis of allyl phenyl ether and claisen rearrangement. Scientific Study & Research, Chemistry & Chemical Engineering, Biotechnology, Food Industry 12(4):425-428.
2. Gagik Torosyan (2015) Selective mono-N-alkylation of ethanolamine, Annual Proceedings of NPUA 1:652-658.
3. N R Hovhannisyanyan and G H Torosyan (2016) Selective alkylation of acetoacetic ester, Annual Proceedings of NPUA, 2:810-814.
4. G H Torosyan and N R Hovhannisyanyan (2016) Alkylation of 1,3-diketons in phase transfer catalysis by microwave radiation, Annual Proceedings of NPUA, 2016, v.2.
5. G H Torosyan and N R Hovhannisyanyan (2016) Alkylation of acetoacetic ester in phase transfer catalysis by microwave radiation. Bashkirian Chemical Journal 23(4):24-26.

Biography

Gagik H Torosyan has his own experience in Organic Chemistry, in the chemistry of amines and ammonium compounds, in phase transfer catalysis, as well as in the removal of organic pollutants from waste water. His proposals have been introduced into the practice of organic reagents synthesis and in the treatment of waste waters. A number of his new studies have been used during the lectures at universities. He is the author of five books on Organic Chemistry, Chemical Technology, Environmental Technologies and about 400 scientific publications and 30 patents.

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