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A Brief history of the chemical transformation of 2,4,6-trinitrotoluene

© Sergey G. Alekseev, **Ekaterina K. Petrova**,
Dmitry N. Kuznetsov,*[+] and **Konstantin I. Kobrakov**
Department of Organic Chemistry. Russian State University A.N. Kosygin (Technology. Design. Art). Sadovnicheskaya St., 33, Build.1. Moscow, 117997. Russia.
Phone: +7 (495) 811-01-01. E-mail: occd@mail.ru

*Supervising author; [+]Corresponding author

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Abstract

The results of works published in the open press over the past 100 years on the possibilities of converting one of the most well-known and widely used blasting explosives (EX) – 2,4,6-trinitrotoluene (TNT, TOL, TNT) into "conversion" chemical products are summarized having a diverse and commercially attractive application. Examples of the first industrial use of TNT are not given as explosives, but as inexpensive and affordable chemical raw materials for the production of components of photosensitive compositions. The reasons for the second more intensive period of development of works (late 20th – early 21st centuries) on revealing the synthetic potential of TNT are noted. The most promising areas of work are discussed: the synthesis of polyfunctional organic compounds of a carbo (hetero) cyclic structure, interesting as biologically active substances, precursors for the synthesis of pharmaceuticals, original polymers and resins, etc. The article makes assumptions about the reasons for the fact that so far TNT has not found wide practical application as an almost universal starting compound for obtaining a wide range of products of small and large-tonnage organic intesa. Using examples of the results of their own work on obtaining original, effective dyes and pigments, sorption-active compounds, structural analogues of hard-to-reach, but practically significant natural substances, the authors suggest ways of involving TNT in the practice of industrial organic synthesis.

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