

Forensic chemical study on 1-phenyl-2-nitropropene as a precursor in the synthesis of amphetamine

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Abstract

In expert practice it is necessary to classify different reagents to controlled substances. One of such substances is 1-phenyl-2-nitropropene. This substance is widely used in the chemical industry, including for the synthesis of drugs. In pharmaceutical industry it is used for the production of medicinal drugs such as Sidnokarb, which is a psychostimulant, and drugs for the treatment of asthma. At the same time in illegal drug laboratories this substance is used for the synthesis of psychotropic substance – amphetamine, which is prohibited in the Russian Federation. Generally, in practice the expert has to deal not only with pure substances but also with mixtures, not only with dry substances, but also with liquids. This is challenging, because 1-phenyl-2-nitropropene is a controlled compound in the case if its concentration is 15% or more. In the article there are presented methodical recommendations for forensic chemical study on 1-phenyl-2-nitropropene for its classification as a controlled in the Russian Federation substance. There were selected solvent systems for the separation of 1-Phenyl-2-nitropropene and reagents for staining of 1-phenyl-2-nitropropene using method of chromatography in a thin layer of sorbent and for preliminary detection with qualitative color reactions. This qualitative study was conducted comparatively with amphetamine in the case of 1-phenyl-2-nitropropene is with it in the mix. Spectrums of 1-phenyl-2-nitropropene were retrieved with various physicochemical methods (IR-, UV-spectroscopy, GC/MS), retention index was calculated on one of the most frequently used stationary liquid phase. Current factors of 1-phenyl-2-nitropropene were defined with regard to internal standards of the diphenylamine and methyl stearate in the research by the method of gas chromatography with the use of flame ionization detector which can be used for quantitative assessment of the content of analyte in the object of forensic chemical examination for further classification as precursor. Current factor for 1-phenyl-2-nitropropene to diphenylamine was 0.68, to methyl stearate was 0.88.

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