

An algorithm development for producing of standard samples of explosives

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Abstract

The analysis of requirements for standard samples (SS) of the explosives' composition, aimed for improving of a determination (an identification) accuracy of the polluting emissions in the environment is given in the present work. As a result of the analysis of the requirements, defining the purpose of SS of the explosives' composition, the functions of the latter have been established; there are the measurement assurance and ensuring of measurement procedures of an explosives content in solutions, air, aqueous media, soils, surfaces washing-off, special products and also in various fields of a science and an industry, engaged in the production, an adjustment, a research and an operation of equipment for carrying out the quantitative chemical analysis and controlling the objects of the environment (signaling devices). There has been formed the circle of potential consumers of new SS of the explosives' composition, in which the enterprises of the industry of ammunition and special chemistry, subordinate organizations of the ministries of Russia (Ministry of Industry and Trade), higher educational establishments and also privately owned enterprises and organizations, carrying out the work related to the use of explosives are included; this circle imposes the requirements for SS quality and establishes a rating of the approved state SS (SSS). The purity degree of explosives (a base material fraction of total mass is no less than 99.5 % by mass) and an acetonitrile (used as a solvent) (a water content is no more than 0.03 % by mass) has been established in the course of carrying out of the analysis of the requirements for the initial materials. The ampoules, which are filled by means of the syringe and the glass medicine bottles of a general purpose were selected as a container in order to protect of SS specimen from the action of a complex of destructive factors, imposing the requirements for their storage conditions. In the course of studying of the necessity of SS material of the explosives' composition in different groups of purpose the volumes of a material in each individual ampoule (bottle) have been established, that is 5 cm³ and 20 cm³. It has been developed the algorithm for producing of SS of explosives' composition, meeting the aforementioned requirements.

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