

Generation of sulfur aerosol by pyrotechnic compositions

© Anastasia V. Strelkova,¹ Aleksander M. Pyzhov,^{1*+} Vladimir A. Rekshinskiy,¹
Ivan K. Kukushkin,¹ and Pyotr P. Purygin²

¹ Chair of Chemistry and Technology of Organic Nitrogen Compounds. Samara State Technical University. Molodogvardeyskaya St., 244. Samara, 443100. Samara region. Russia. Phone: +7 (846) 337-08-89. E-mail: argel33@mail.ru

² Chair of Organic, Bioorganic and Medicinal Chemistry. Samara State University. Akad. Pavlova, 1. Samara, 443011. Samara region. Russia. Phone: +7 (846) 334-54-59. E-mail: puryginpp2002@mail.ru

*Supervising author; [†]Corresponding author

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Abstract

This article presents results of research on the development of pyrotechnic composition and device for the generation of sulfur aerosol in combustion mode. The main tasks that it was decided, was to increase the safety of the manufacture and application of sulfur aerosol generator, simplification and cheapening of the process of its manufacture while maintaining a high efficiency of its application, as well as in the development of system of ignition of his pyrotechnic composition. The main difference pyrotechnic composition for generating sulfur aerosol, developed by the authors from the currently existing in Russia and abroad is that the composition does not contain nitrocellulose and processed products is scarce and sensitive to external influences components. As oxidant, as one of the components of the thermal fundamentals of aerosol composition was used ammonium nitrate and fuel – activated carbon. It was shown that only in this case it was possible to achieve stable low-temperature combustion process composition containing about 40% active ingredient is sulfur. As a result of long research was the design of a generator of sulfur aerosol and its ignition system with enhanced safety of manufacture and use, simplicity and low cost and with high efficiency.