CALCULATIONAL SCHEME OF EVALUATION OF THE ELECTRIC SPARK SENSITIVITY FOR EXPLOSIVES BASED ON EXPERIMENTAL DATA

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Abstract: The analysis of the experimental data to evaluate the electrical spark sensitivity of explosives using two devices (RDAD and ESZ KTTV, Institute of Energetic Materials, Pardubice, Czech Republic) has been carried out and statistical estimation of the data was performed by regression and variance analysis methods. It was shown that the relative values of the sensitivity of these devices are statistically similar. It was determined that the factors affecting the spark sensitivity of explosives are the enthalpy of formation, molecular crystals density, the number of moles of the chemical elements in a kilogram of matter (gross amount), and the maximum energy content of the products of the explosion.

Keywords: electric spark sensitivity; explosives; enthalpy of formation; molecular crystals density; regression analysis; analysis of variance

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