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Impact sensitivity test of liquid explosives ANDREI TIUTIAEV, VALERI TREBUNSKIH, ANDREI DOLZHIKOV, IRINA ZVEREVA, Samara State Technical University — The sensitivity of liquid explosive in the presence of gas bubbles increases many times as compared with the liquid without gas bubbles. If we consider that in the liquid as a result of convection, wave motion, shock, etc. gas bubbles are easily generated, the need to develop a method for determining sensitivity of liquid explosives to impact and a detailed study of the ignition explosives with bubbles is obvious. On a mathematical model of a single steam bubbles in the fluid theoretically considered the process of initiating explosive liquid systems to impact. For the experimental investigation, the well-known K-44 -II and the so-called appliance No. 1 were used. Instead of the metal cap in the standard method in this paper there was polyurethane foam cylindrical container with LHE, which is easily deforms by impact. A large number of tests with different liquid explosives were made. It was found that the test LHE to impact in appliance No. 1 with polyurethane foam to a large extent reflect the real mechanical sensitivity due to the small loss of impact energy on the deformation of the metal cap, as well as the best differentiation LHE sensitivity due to the higher resolution method .

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