

METHODS OF EVALUATING EXPLOSIVE REACTIVITY OF EXPLOSIVE-CONTAMINATED SOLID WASTE SUBSTANCES

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ABSTRACT

The Bureau of Mines, U.S. Department of the Interior, has developed procedures and criteria for evaluating explosive reactivity of explosive contaminated-solid waste substances generated-by U.S. Army Ammunition Plants. These substances are produced as explosive-contaminated-sludge from waste water treatment plants, residues from the burning of munitions and explosives on open ground, and residues from deactivation furnaces. The characterization of explosive reactivity is a prerequisite for disposal of such waste materials, which may be contaminated-with primary explosives, propellants, or pyrotechnic materials. The Bureau has proposed methods for this purpose. These methods were developed to evaluate the explosive reactivity as defined in Title 40, Code of Federal Regulations, Part 261.23(a)(6) and (7). These are Bureau of Mines Gap and Bureau of Mines Internal Ignition methods, which determine the sensitivity to shock and thermal stimuli, respectively. This paper also includes gap and internal ignition reference data for typical blasting agents, high explosives, propellants, and marginally reactive-substances. These reference data were used to establish criteria. The Bureau has evaluated-over 400 samples of contaminated-soil,-sludge, and burning residues using these methods.