

Dinitrotoluene and Trinitrotoluene Measuring in Double-Base Solid Propellants

Authors : Z. H. Safari, M. Anbia, G. H. Kouzegari, R. Amirkhani

Abstract : Toluene and Nitro derivatives are widely used in industry particularly in various defense applications. Tri-nitro-toluene derivative is a powerful basic explosive material that is a basis upon which to compare equivalent explosive power of similar materials. The aim of this paper is to measure the explosive power of these hazardous substances in fuels having different shelf-life and therefore optimizing their storage and maintenance. The methodology involves measuring the amounts of di- nitro- toluene and tri-nitro-toluene in the aged samples at 90 ° C by gas chromatography. Results show no significant difference in the concentration of the TNT compound over a given time while there was a significant difference in DNT compound over the same period. The underlying reason is attributed to the simultaneous production of the material with destruction of stabilizer.

Keywords : dinitrotoluene, trinitrotoluene, double-base solid propellants, artificial aging

Conference Title : ICSRD 2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020