

REDUCED SENSITIVITY RDX, Round Robin Program

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One of the 'discoveries' that has generated much interest in recent years in the IM community is Reduced Sensitivity RDX (RS-RDX). This material, when incorporated in some high explosive formulations, can confer reduced shock sensitivity compared with equivalent formulations made with typical RDX produced by the acetic anhydride process. Currently, despite the efforts of many laboratories worldwide, there are no agreed and validated analytical methods for discriminating between the different RDX sensitivity grades at the crystal level.

A round robin testing program has been underway for the last 18 months involving the analysis of 7 different RDX natures by 16 different laboratories spread throughout 9 MSIAC/NATO nations. Analytical testing of the crystalline RDX materials has included the techniques of: microscopy(Optical and Scanning Electron, calorimetric techniques, particle size analysis, chromatography and crystal density and distribution measurements. The final outcome of the round robin program will be to support NATO AC-326/Sub-Group 1 (Energetic Materials) in developing a updated version of STANAG-4022 containing RS-RDX as a clearly defined and specified material, with appropriate validated analytical techniques. This presentation will provide an overview of the progress made to date in the round robin including preliminary laboratory and shock sensitivity testing of samples. A technical workshop is planned to have been held on Monday 24th April 2005 to detail the findings and further activities of the multinational R4 program.

To obtain detailed results regarding this program please contact MSIAC at msiac@msiac.nato.int.