

Abstract Submitted
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Comparison of Reaction Kinetics of iRDX vs. RDX at High Pressure JARED GUMP, SUHITHI PEIRIS, Indian Head Division, Naval Surface Warfare Center — Due to the close proximity of personnel and ammunition on military ships, the Navy is very interested in decreasing the sensitivity of its energetic ingredients. RDX is a common ingredient in many munitions, and there is now a less sensitive version of RDX, known as iRDX developed by SNPE. The testing of this new material is of prime importance, especially at high pressure. Samples of iRDX (from SNPE) and standard RDX were loaded into gem anvil cells (GACs) with cubic zirconia gems. Laser initiation experiments were performed with a 5ns pulsed ND:YAG laser set at 532 nm wavelength. The samples were exposed to various pressures and laser fluences. A pulsed UV/Vis arc lamp was used as a light source and changes in transmittance through the sample were monitored during initiation. Both samples were initially transparent under pressure. Upon initiation samples become opaque due to dark intermediate products, then clear as the final gaseous products are formed. A comparison of the reaction times for iRDX and RDX samples will be presented under various pressure and fluence conditions.

Jared Gump
Indian Head Division, Naval Surface Warfare Center

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