

Abstract Submitted
for the SHOCK15 Meeting of
The American Physical Society

Characterization of Diacetone Diperoxide (DADP) PATRICK BOWDEN, DANIEL PRESTON, BRYCE TAPPAN, VIRGINIA MANNER, Los Alamos National Laboratory — To date, diacetone diperoxide (DADP) has been significantly less studied than its well-known counterpart, triacetone triperoxide (TATP). Much of this disparity in the literature is due to the harsher conditions/multi-step syntheses required to obtain DADP leading to much lower evidence of frequency of use. Because of this, DADP is often misrepresented as being more dangerous (i.e. more sensitive and less stable) than TATP. This paper discusses the synthesis and characterization (sensitivity, thermal stability, etc.) of DADP with respect to other energetic organic peroxides (TATP, HMTD and MEKP); investigating differences in polymorphism, crystal habit and effects of aging and processing differences will be discussed. Additionally, deflagration-to-detonation transition (DDT) of organic peroxides will be presented.

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Date submitted: 02 Feb 2015

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