

Abstract Submitted
for the SHOCK05 Meeting of
The American Physical Society

Detonation Wave Profile in PBX-9501 RALPH MENIKOFF, LANL

— Measurements of a CJ-detonation wave in PBX-9501 with a VISAR technique have shown a classical ZND profile for the reaction zone. This is compatible with one-dimensional simulations using realistic equations of state and an Arrhenius reaction rate fit to available data from other experiments. Moreover, the reaction zone width is less than the average grain size in the PBX. In contrast to initiation, which requires hot spots, the reaction rate from the bulk shock temperature is sufficiently high for propagating a detonation wave. This raises questions with burn models used for both ignition and propagation of detonation waves.

Ralph Menikoff
LANL

Date submitted: 16 Mar 2005

Electronic form version 1.4