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Double Shock Experiments on PBX Explosive JOB-9003 XU ZHANG, Institute of Fluid Physics, China Academy of Engineering Physics —
One-dimensional plate impact experiments have been performed to study the double shock to detonation transition and Hugoniot state in the HMX-based explosive JOB-9003. The flyer was a combination with sapphire and Kel-F which could pass two different pressure waves into PBX Explosive JOB-9003 sample after impact. The particle velocities at interface and different depths in the PBX JOB-9003 sample were measured with Al-based electromagnetic particle velocity gauge technique, thus obtaining particle velocity – time diagram. According to the diagram, the corresponding Hugoniot state can be determined based on the particle velocity and shock wave velocity in the sample. Comparing with the single shock experiments, PBX Explosive JOB-9003 shows desensitization features due to the pre-pressed shock wave, the shock to detonation transition distance is longer than those single shock experiments.

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