

Abstract Submitted  
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**Effect of volume fraction on Hugoniot P-v curve of mixed aluminum (Al) and tungsten (W) materials.**<sup>1</sup> HYOONGJOON KWON, SOONHO SONG, Yonsei University, Korea, JUNGSU PARK, Agency for Defense Development of Korea, KYUNGSUN CHUNG, Yonsei University, Korea, AGENCY FOR DEFENSE DEVELOPMENT OF KOREA COLLABORATION — Computational shock simulation is cost effective in understanding the contributions to Hugoniot behavior of solids. Mesoscale shock simulation is known to be effective method in studying bulk behavior of materials. In this study, the analyzation of Hugoniot behavior of three different solid mixtures (volume fraction of 30%Al/70%W, 50%Al/50%W, and 70%Al/30%W) were carried out by using this mesoscale shock simulation with the hydrocode AUTODYN. Among three main factors that affect Hugoniot behavior (particle size, distribution and volume fraction of the mixture), this study was focused on the effect of volume fraction on Hugoniot behavior. Shock simulations were conducted under the particle velocity range from 0.5km/s to 5km/s, and consequently, dependence of volume fraction on Hugoniot P-v curve was proposed.

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