

Abstract Submitted
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Polycrystalline Aluminum Oxynitride Hugoniot and Optical Properties T.F. THORNHILL, Ktech Corp., T.J. VOGLER, W.D. REINHART, L.C. CHHABILDAS, Sandia National Laboratories* — Aluminum oxynitride (AlON) is an interesting ceramic because it is both polycrystalline and transparent. We have conducted plate impact experiments to measure the Hugoniot up to 100 GPa and the spall strength up to the HEL. AlON appears to lose spall strength completely under certain conditions, perhaps due to the propagation of a failure wave. On the other hand, it remains transparent up to at least 5 GPa, and refractive index measurements have been made over this regime. In addition, nonlinear elastic constants have been determined from measurements of elastic shock velocities.

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