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Shock wave experiments on gallium BRIAN JENSEN, BRITTANY BRANCH, FRANK CHERNE, Los Alamos National Laboratory — Gallium exhibits a complex phase diagram with multiple solid phases, an anomalous melt boundary, and a low-temperature melt transition making it a suitable material for shock wave studies focused on multiphase properties including kinetics and strength. Apart from high-pressure shock wave data that exists for the liquid phase, there is a clear lack of data in the low-pressure regime where much of the complexity in the phase diagram exists. In this work, a series of shock wave experiments were performed to begin examining the low-pressure region of the phase diagram. Additional data on a gallium alloy, which remains liquid at room temperature, will be presented and compared to data available for pure gallium (LA-UR-17-21449).

Brian Jensen
Los Alamos National Laboratory

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