

Abstract Submitted  
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**A Multi-Phase Equation of State and A Multi-Phase Steinberg Guinan Strength Model for Tin** GEOFFREY COX, AWE — This paper considers a multi-phase equation of state and a multi-phase strength model for tin in the beta, gamma, and liquid phases. At a phase transition there are changes in volume, energy, and properties of a material that should be included in an accurate model. The strength model will also be affected by a solid-solid phase transition. For many materials there is a lack of experimental data for strength at high pressures making the derivation of strength parameters for some phases difficult. In the case of tin there are longitudinal sound speed data on the Hugoniot available that have been used in conjunction with a multi-phase equation of state to derive strength parameters for the gamma phase, a phase which does not exist at room temperature and pressure.

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