Abstract Submitted
for the SHOCK07 Meeting of
The American Physical Society

Equation of State for Ti-Beta-21S KEVIN HONNELL, NENAD VELISAVLJEVIC, CHRIS ADAMS, PAULO RIGG, GARY CHESNUT, ROBERT AIKIN, JR., JONATHAN BOETTGER, Los Alamos National Laboratory — A new, tabular, SESAME equation of state is presented for Ti-Beta-21S (TIMETAL 21S®), a high-strength, high-temperature, beta-stabilized alloy of Ti, Mo, Nb, and Al. The new equation of state combines an empirical, Vinet description of the cold curve with the Johnson ionic model and the Thomas-Fermi-Dirac model for the thermal electronic contributions. Both the HCP and BCC phases are accounted for via the cold curve. Predictions for the room-temperature isotherm, principal Hugoniot, and thermal expansion are compared to new experimental results.

Kevin Honnell
Los Alamos National Laboratory

Date submitted: 22 Feb 2007 Electronic form version 1.4