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Approximating a Ti6Al4V alloy via a multiphase Ti equation of state and mixture model. SCOTT CROCKETT, KEVIN HONNELL, Los Alamos National Laboratory — We present a new multiphase equation of state (EOS) for titanium, describe the process involved in creating it, and present comparisons with relevant experimental data. We then use the new EOS as a foundation to then apply a simple additive volume mixture procedure. An EOS for the Ti-6-4 alloy EOS is generated by mixing the phases of Ti with corresponding Al and V EOSs. A comparison is made evaluating how well this simple mixing approach approximates the actual alloy behavior.

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