

Abstract Submitted
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A multiphase equation of state for cerium (IV) oxide ERIC CHISOLM, Los Alamos National Laboratory — I describe the construction of a theoretical equation of state (EOS) for cerium (IV) oxide, CeO_2 , that includes a low- and high-pressure solid phase and the liquid. After quickly summarizing the standard models we use in each phase, I discuss challenges unique to the multiphase construction. I also describe some physical issues that appear in the Ce_xO_y group of materials, including the possibility that CeO_2 changes chemical identity before melt. Finally, I briefly consider the challenge of comparing a full-density EOS to highly porous Hugoniot data.

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