Thermochemical Modeling of Fluorite-Structure Actinide Oxides

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Complex actinide oxides are being considered as nuclear fuels for both energy production and to consume waste/weapons actinides. Other than urania-plutonia there is not an accurate thermochemical understanding or models of the transuranic oxide fluorite-structure solutions. Efforts to develop models of these solid solutions utilizing approaches that consider the defect concentrations such as the compound energy formalism are being attempted. This paper reports progress in modeling these systems using practical thermochemical solid solution representations.

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