

# O-U (Oxygen-Uranium)

H. Okamoto

[Massalski2] showed a schematic U-O phase diagram redrawn from [Elliott]. Liquidus boundaries were unknown.

Since numerous liquidus and other phase boundary data were published, [1998Che], [2002Che], [2002Gue], and [2004Che] attempted to construct the U-O phase diagram by thermodynamic modeling. Figure 1 shows the U-O phase diagram calculated by [2004Che], which supersedes their earlier works [1998Che] and [2002Che].

For further improvement of the thermodynamic evaluation of this system, phase diagram data assessed by [2006Bai] may be useful.

**2002Che:** P.Y. Chevalier, E. Fischer, and B. Cheynet, Progress in the Thermodynamic Modeling of the O-U Binary System, *J. Nucl. Mater.*, 2002, **303**, p 1-28

**2002Gue:** C. Guéneau, M. Baichi, D. Labroche, C. Chatillon, and B. Sundman, Thermodynamic Assessment of the Uranium-Oxygen System, *J. Nucl. Mater.*, 2002, **304**, p 161-175

**2004Che:** P.Y. Chevalier, E. Fischer, and B. Cheynet, Progress in the Thermodynamic Modeling of the O-U-Zr Ternary System, *Calphad*, 2004, **28**, p 15-40

**2006Bai:** M. Baichi, C. Chatillon, G. Ducros, and K. Froment, Thermodynamics of the O-U System. III. Critical Assessment of Phase Diagram Data in the U-UO<sub>2+x</sub> Composition Range, *J. Nucl. Mater.*, 2006, **349**, p 57-82

## References

**1998Che:** P.Y. Chevalier and E. Fischer, *J. Nucl. Mater.*, 1998, **257**, p. 213, as quoted in [2002Che]

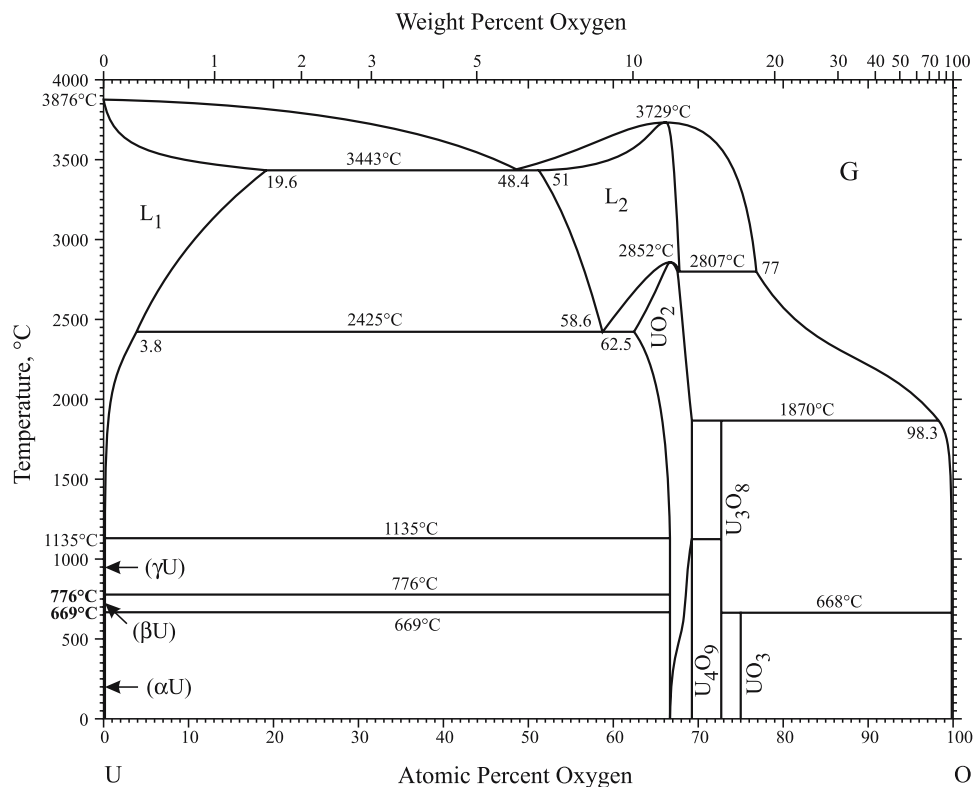


Fig. 1 U-O phase diagram