Re-U (Rhenium-Uranium)

H. Okamoto

The Re-U phase diagram in [Massalski2] was created by the editor by updating the phase diagram of [1963Jac] with newer results of [1977Gar] and [1986Cha].

Since then, [1993Cha] reported a partial phase diagram around Re_2U . Both [1986Cha] and [1993Cha] indicated that the Re_2U phase has a wide ($\sim 10\text{at.}\%$) homogeneity range, and its congruent melting point is off-stoichiometric at around 30 at.% U [1993Cha]. This feature could not be incorporated in the [Massalski2] phase diagram, as reviewed by [1996Oka]. More recently, [1994Mas] reported a new phase diagram, in which the Re_2U phase is shown as a line compound. Figure 1 shows the Re-U phase diagram calculated by [2011Ber] based on experimental data described above. The polymorphic transition of Re_2U in Fig. 1 was adopted from [Massalski2]. This phase diagram requires confirmations due to inconsistency among the experimental phase boundary data, particularly around Re_2U .

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Fig. 1 Re-U phase diagram