

Co-Y (Cobalt-Yttrium)

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The Co-Y phase diagram in [Massalski2] was updated by [1992Oka] based on the experimental work of [1991Wu] with minor modifications. For clarity, only the liquidus profile is shown with a dashed line in Fig. 1.

[2004Du] assessed this system by thermodynamic modeling. The result shown with solid lines in Fig. 1 is believed to be a good representation of the experimental results of [1991Wu]. Figure 2 shows details of the solubility ranges of Co_{17}Y_2 and Co_5Y calculated by [2004Du]. Figure 3 shows the solubility limit of Y in (αCo) also calculated by [2004Du]. In addition, [2004Du] showed calculated details of reactions around L to Co_{11}Y_2 , L to Co_5Y_8 , and (βY) to

(αY). However, these are not shown here because no experimental data are available to confirm these details.

References

- 1991Wu:** C.H. Wu, Y.C. Chuang, and X.P. Su, Re-investigation of the Y-Co Binary System, *Z. Metallkd.*, 1991, **82**(1), p 73-79
1992Oka: H. Okamoto, Co-Y (Cobalt-Yttrium), *J. Phase Equilibria*, 1992, **13**(3), p 326-328
2004Du: Z. Du and D. Lu, Thermodynamic Modeling of the Co-Y System, *J. Alloys Compd.*, 2004, **373**, p 171-178

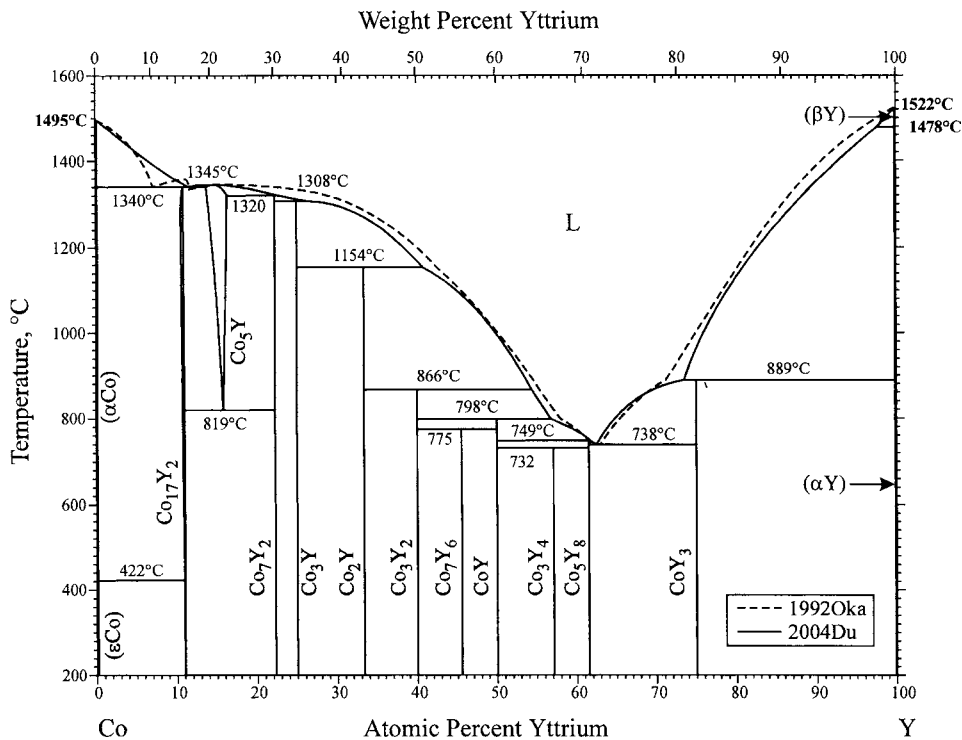


Fig. 1 Co-Y phase diagram

Section III: Supplemental Literature Review

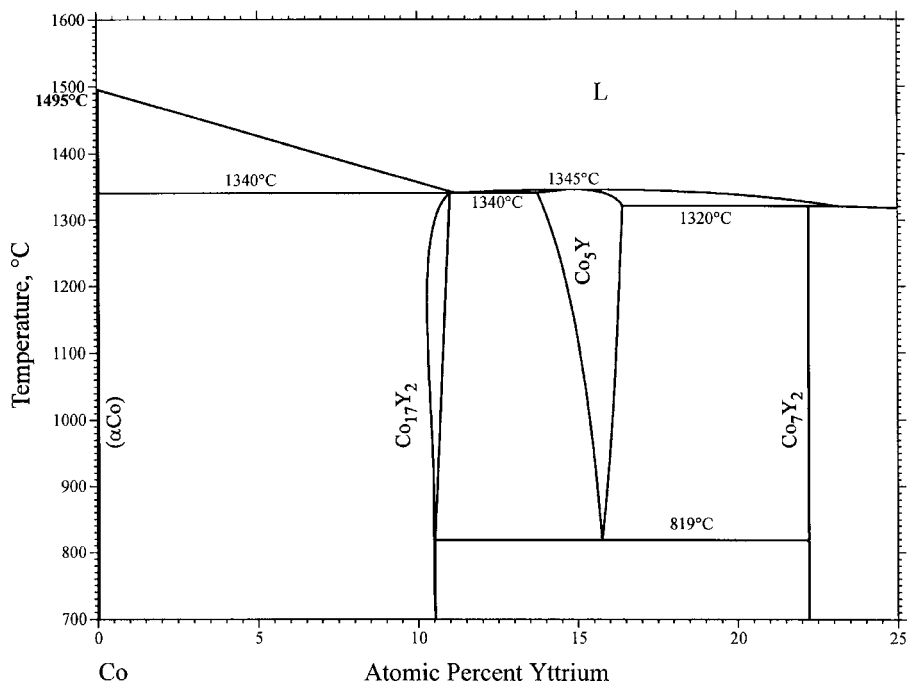


Fig. 2 Solubility ranges of Co₁₇Y₂ and Co₅Y

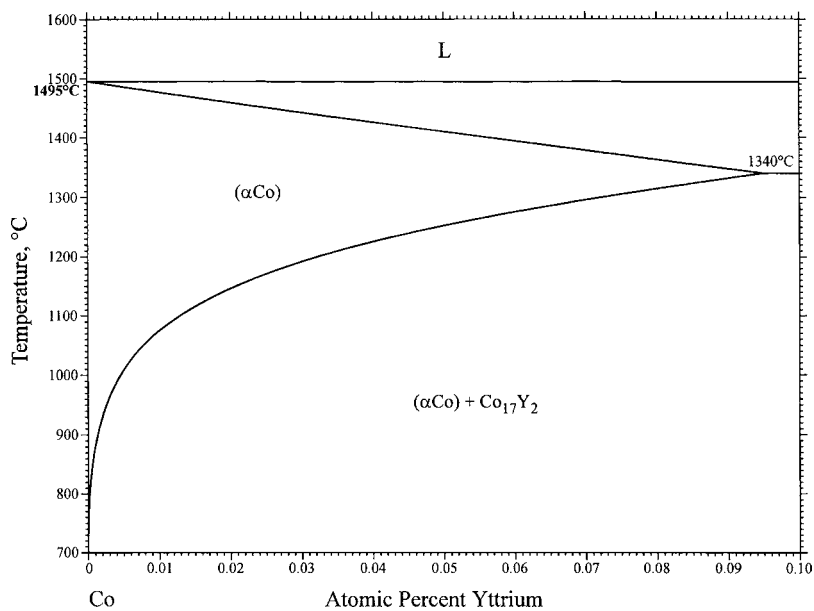


Fig. 3 Solubility limit of Y in (αCo)