

# Co-Si (Cobalt-Silicon)

H. Okamoto

The Co-Si phase diagram in [Massalski2] was adopted from [1991Ish].

Since then, [1992Cho], [2002Oik], and [2006Zha] reported Co-Si phase diagrams calculated by thermodynamic modeling. According to [2006Zha], however, the thermodynamic parameters used by [1992Cho] result in unlikely stabilization of the solid phases in the liquid phase field at high temperatures. Therefore, [2006Zha] refined the parameters and obtained the Co-Si phase diagram shown in Fig. 1. The inflection in the boundaries of the ( $\alpha$ Co) and ( $\epsilon$ Co) is caused by the magnetic effect. This phenomenon was reported earlier by [2002Oik] independently.

## References

- 1991Ish:** K. Ishida, T. Nishizawa, and M.E. Schlesinger, The Co-Si (Cobalt-Silicon) System, *J. Phase Equil.*, 1991, **12**(5), p 578-586
- 1992Cho:** S.D. Choi, Thermodynamic Analysis of the Co-Si System, *Calphad*, 1992, **16**(2), p 151-159
- 2002Oik:** K. Oikawa, G.W. Qin, O. Kitakami, Y. Shimada, K. Fukamichi, and K. Ishida, Magnetically Induced Two-Phase Separation in Co-Ge and Co-Si Systems, *J. Magnet. Magn. Mater.*, 2002, **239**, p 409-411
- 2006Zha:** L. Zhang, Y. Du, H. Xu, and Z. Pan, Experimental Investigation and Thermodynamic Description of the Co-Si System, *Calphad*, 2006, **30**(4), p 470-481

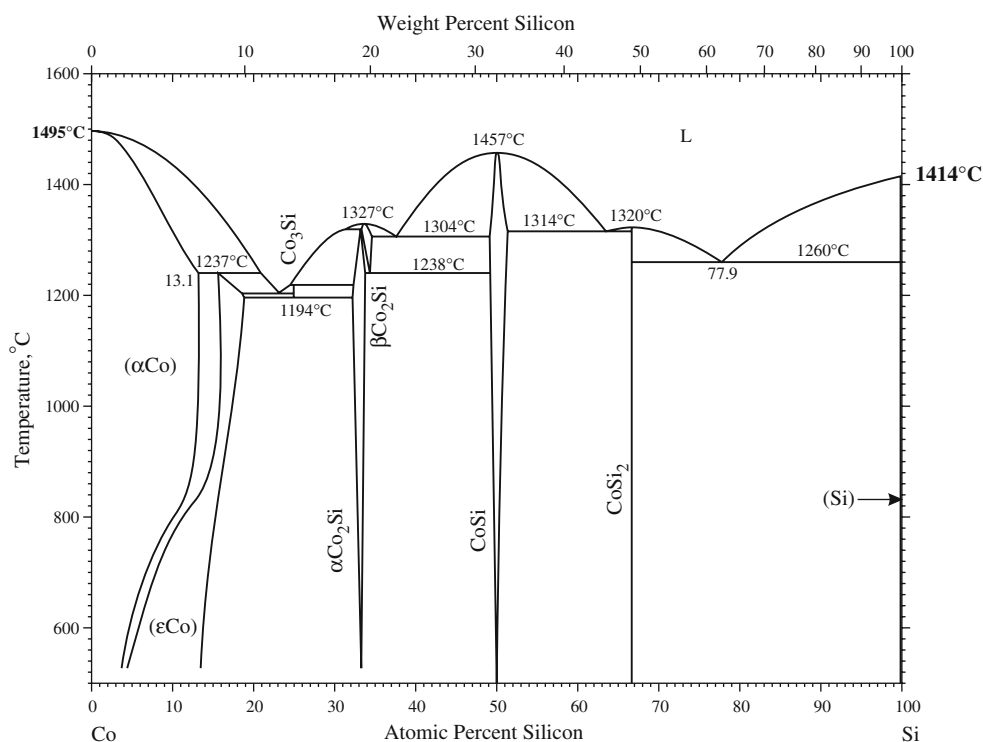


Fig. 1 Co-Si phase diagram