Co-V (Cobalt-Vanadium)

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The Co-V phase diagram in [Massalski2] was redrawn from [1991Smi]. Dashed lines in Fig. 1 show the [19991Smi] diagram slightly modified by [2005Oka] based on [1997Nag]. In the original diagram of [1991Smi], the Co$_3$V phase was shown as dimorphic with the transition temperature approximately 50 °C below the melting point. However, [1997Nag] showed that the high-temperature phase of Co$_3$V is metastable.

This system was thermodynamically assessed by [2004Hua]. The calculated Co-V phase diagram is shown with solid lines in Fig. 1. The magnetic effect of αCo and the solid solubility range of Co$_3$V are not taken into account in this assessment. Therefore, the disagreement between [1991Smi] and [2004Hua] is significant at 0 to ~30 at.% V, as shown in Fig. 1. This range needs a further investigation.

References

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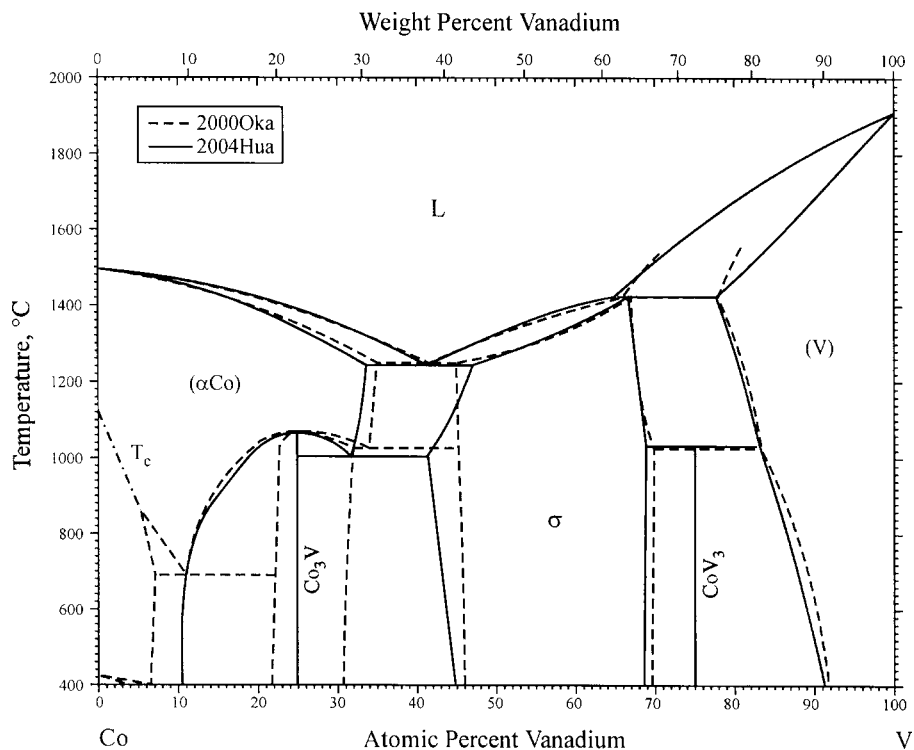
Fig. 1 Co-V phase diagram