H-V (Hydrogen-Vanadium)

H. Okamoto

The V-H diagram shown in Fig. 1 is not accepted, but is quoted from [91Mog] for reference purposes only. This diagram covers wider temperature and composition ranges than the diagram shown in [Massalski2]. However, numerous phase rule violations and thermodynamically improbable features are involved (see [91Oka1], [91Oka2], [92Oka1], and [92Oka2]). Apparently, substantial modifications are needed.

Cited References

91Fuk: Y. Fukai, *Kotai Butsuri*, 26(9), 592-609 (1991) in Japanese.

91Mog: K. Mogi, MS thesis, Chuo Univ., (1991); quoted from [91Fuk].

91Oka1: H. Okamoto, *J. Phase Equilibria*, 12(6), 623-643 (1991).

91Oka2: H. Okamoto and T.B. Massalski, *J. Phase Equilibria*, 12(2), 148-168 (1991).

92Oka1: H. Okamoto and T.B. Massalski, submitted to *J. Phase Equilibria* (1992).

92Oka2: H. Okamoto and T.B. Massalski, submitted to *J. Phase Equilibria* (1992).

Fig. 1 V-H phase diagram.

Sc-Si (Scandium-Silicon)

H. Okamoto

The Sc-Si phase diagram in [Massalski2] was proposed by [86Gok]. Because no experimental data were available on any liquidus boundary, a similarity to the Y-Ge and Sc-Ge systems was assumed. Three compounds— Sc_5Si_3 , ScSi , and Sc_3Si_5 —were reported to exist.

[88Ere] investigated this system by means of DTA, metallography, and XRD. The Sc-Si phase diagram shown in Fig. 1 is based on this result with minor modifications that take into account thermodynamic consistency as described by [91Oka2] (symmetry of the liquidus, sign of the curvature, initial slope, etc.). The melting