

The phase boundaries of the H-Er, H-Sc and H-Yb systems at 295K deduced from changes of film resistance

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Abstract

The phase boundaries of the H-Er, H-Sc and H-Yb systems were found by measuring changes of resistance as a function of atomic ratio r ($r=H/Me$) while films of the metals were hydrided at 295K. For H-Er the solution phase was between $r=0$ and 0.23 and the single-phase dihydride region was from $r=1.9$ to 2.1. For H-Sc the solution phase ended at $r=0.17$ and the single-phase dihydride began at $r=1.1$, while for H-Yb the solution phase ended at about r approximately=0.15. The dissociation pressure of Sch_2 was about $5 \cdot 10^{-2}$ Torr at 295K.