Mo-Te (Molybdenum-Tellurium)

Phase diagram

Some experimental work has been done by Puotinen [61Puo1] (thermal analysis), Vellinga et al. [70Vel1] and Opalovskii et al. [71Opa1]. Spiesser et al. [69Spi1] have reviewed the results obtained in this system. Using the results present in the literature, Brewer et al. [80Bre1, 90Bre1] have constructed an assessed phase diagram, which has been taken as a basis to draw Fig. 1.

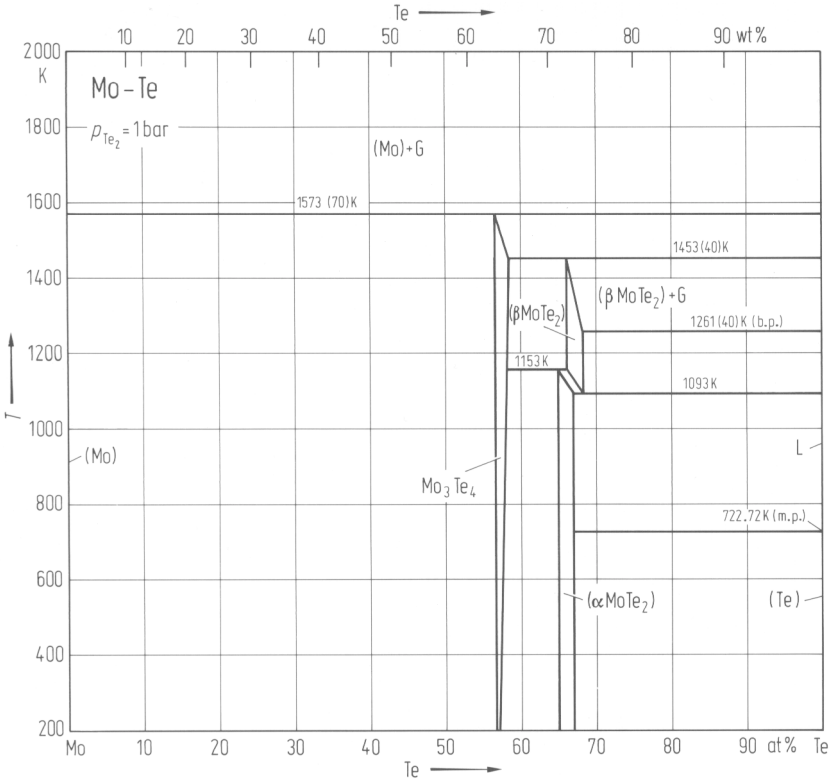

Fig. 1. Mo-Te. Phase diagram at 1 bar Te_2-pressure.

Crystal structure

Crystallographic data of intermediate phases are listed in Table 1.

Temperature dependence of lattice constants of $MoTe_2$ is given in Fig. 2 (taken from Agarwal et al. [72Aga1]). Lattice constants of (Mo) solid solutions have been determined by Straumanis et al. [68Str1]. Results are plotted in Fig. 3.

Table 1. Mo-Te. Crystal structure and lattice parameters of intermediate phases.

Phase	Structure	Type	*a* [nm]	*b* [nm]	*c* [nm]	Ref.
Mo_3Te_4	hex	Mo_3Se_4	1.013		1.170	70Bar1
$\alpha MoTe_2$	hex	MoS_2	0.35182		1.39736	61Kno1
$\beta MoTe_2$	mon	$MoTe_2$	0.633	0.3469 $\beta = 93.92°$	1.386	66Bro2

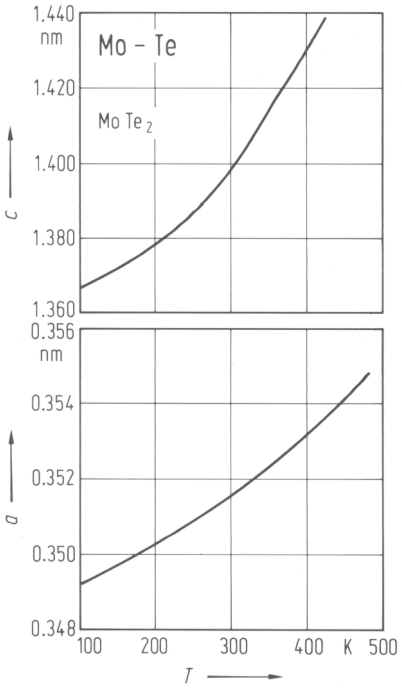

Fig. 2. Mo-Te. Lattice parameters for $MoTe_2$.

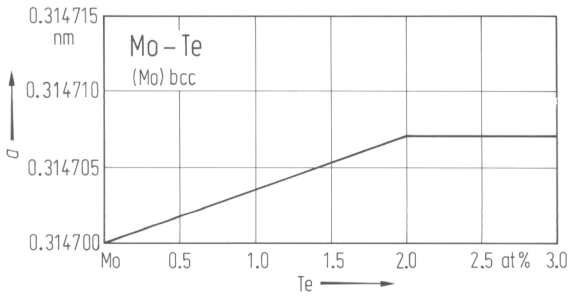

Fig. 3. Mo-Te. Lattice parameter for bcc (Mo) solid solution.

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