Hf - Sn, In, Te

Hf Cax

Вф-2707-VII. 1962

Potzshke M.
Schubert K.

(Tm) „Z. Metallkunde"
1962, 53, N 7, 479-88.

Teitschko W. 49 p.

1964

HfTeC

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Кристаллическая структура Ta_2Mo_3C

(сист. Zr-Pb) I

$GaCl_3 \cdot TiCl_4 \cdot 3POCl_3$, $GaCl_3 \cdot ZrCl_4 \cdot 3POCl_3$ 1968

$GaCl_3 \cdot HfCl_4 \cdot 3POCl_3$ (Tm)

VII 2579

Войтович Б.А., Звягольская Е.В.,

Укр. хим. ж., 1968, 34, №8, 778-783

Термический анализ тройных систем

$GaCl_3 - Ti(Zr, Hf, Sn)Cl_4 - POCl_3$ и $GaCl_3 -$

$Nb(Ta, Sb)Cl_5 - POCl_3$

РЖХим, 1969

56832

5

VII-6374 1972

Tl_3HfF_7

145935n Thallium fluoride-hafnium fluoride and thallium fluoride-zirconium fluoride systems. Avignant, Daniel; Cousseins, Jean C. (Serv. Chim. Miner., U.E.R. "Sci. Exactes Nat.," Aubiere, Fr.). *C. R. Acad. Sci., Ser. C* 1972, 274(6), 631–4 (Fr). Detn. of the phase diagrams revealed: for the TlF–HfF_4 system, eutectic at 322° and 9 mole % HfF_4, cubic Tl_3HfF_7 (congruently m. 567°; *a* 9.335 Å, d.(exptl.) = 7.49, d.(calcd.) = 7.55, *Z* = 4), orthorhombic Tl_2HfF_6 (m. 424° with decompn.), peritectic at 424° and 34 mole % HfF_4, eutectic at 380° and 39 mole % HfF_4, and $TlHfF_5$ (m. 452°); for the TlF–ZrF_4 system, eutectic at 324° and 7.5 mole % ZrF_4, cubic Tl_3ZrF_7 (congruently m. 565°; *a* 9.340 Å, d.(exptl.) = 6.78, d.(calcd.) = 6.82, *Z* = 4), orthorhombic Tl_2ZrF_6 (m. 426° with decompn.), peritectic at 426° and 37 mole % ZrF_4, eutectic at 392° and 42 mole % ZrF_4, and $TlZrF_5$ (m. 436). Tl_2HfF_6 underwent a reversible polymorphic transformation at 384°. The lattice parameters *a* and *c* (in Å), resp., for hexagonal $Tl_{1-x}MF_{3-x}$ were: M = HF, 6.74 and 3.84; M = Zr, 6.76 and 3.85.

(T_m)

Tl_2HfF_6

(T_{t2})

C.A. 1972 · 76 · 24

Hf-Cr-Ga (сплав) 1977

фазовая диагр.

87: 173524y Study of the phase equilibriums in the hafnium-chromium-gallium and hafnium-iron-gallium systems. Belyavina, N. N.; Markiv, V. Ya. (Kiev. Derzh. Univ., Kiev, USSR). *Dopov. Akad. Nauk Ukr. RSR, Ser. A: Fiz.-Mat. Tekh. Nauki* 1977, (9), 849–52 (Ukrain). Alloys of the Hf–Cr–Ga and Hf–Fe–Ga systems were examd. by x-ray anal. and x-ray microanal. The phase equilibria at 800° were established. The Hf–Cr–Ga system has four ternary phases: *W*, *μ*, *ν* and λ_1 ($MgZn_2$ structure type); the Hf–Fe–Ga system also has four ternary phases Ψ ($ThMn_{12}$), *T* (Th_6Mn_{23}), λ_1 ($MgZn_2$) and *Z*.

C.A. 1977. 87 N22

TlMnF5

1981

Avignant D., et al.

J. Solid State Chem.,

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(кристал. структ., ион. проводим.)

(см. TlZr2F5; 1).

$HfCr_2$

1981.

Mirnaeva S. A., Budberg P. B.

Fazovye Ravnovesiya

Met. Splavakh 1981, 179–185.

(см. $TiCr_2$; I)

полиморфизм.

Hfba

1986

20 Б2029. Кристаллическая структура соединения HfGa, его аналогов и новые представители структурного типа $Hf_3Cr_2Si_4$. Маркив В. Я., Белявина Н. Н. «Докл. АН УССР», 1986, Б, № 4, 44—48

Методом порошка и монокристалла определена крист. структура HfGa (I) и его аналогов $Zr_{0,88}V_{0,12}Ga$ (II), $Zr_{0,9-0,7}Ti_{0,1-0,3}Ga$ (III), $Zr_{0,9-0,4}Nb_{0,1-0,6}Ga$ (IV). I кристаллизуется в собственном СТ, соединения ромбич. ф. гр. *Pbcm*; Z 24; *a* 0,9171; *b* 0,8503; *c* 0,5648 нм; *a* 9250; *b* 0,8577; *c* 0,5638 нм; *a* 0,9243—0,9161; *b* 0,8592—0,8560; *c* 0,5650—0,5591; *a* 0,9267—0,9122; *b* 0,8552—0,8385; *c* 0,5648—0,5441 соотв. для I—IV. Атомы I размещены по правильным системам точек: ф. гр. *Pbcm*: Hf^{1-3} в 4 (*d*) с *x* 0,1918, *y* 0,6407, *B* 1,30; в 4 (*d*) с *x* 0,626, *y* 0,527, *B* 1,11; и в 4 (*c*) с *x* 0,112, *B* 0,50; Ga^{1-3} в 4 (*d*) с *x* 0,077, *y* 0,963, *B* —0,64; в 4 (*d*) с *x* 0,659, *y* 0,897, *B* —0,21; и в 4 (*c*) с *x* 0,556, *B* —0,84; *R* 0,055 для 52 отражений. Установлено, что 5 соединений кристаллизуется в СТ $Hf_3Cr_2Si_4$: $Zr_3V_2Ga_4$ (*a* 1,683; *b* 0,5474; *c* 1,377 нм); $Hf_3V_2Ga_4$ (1,671; 0,5418; 1,362); $Hf_3Cr_2Ga_4$ 1,666; 0,5277; 1,350); $Zr_3Mn_2Ga_4$ (1,675; 0,5355; 1,357); $Hf_3Mn_2Ga_4$ (1,666; 0,5306; 1,347).

О. Е. Г.

кристаллструктура

Х. 1986, 19, №20

2000

F: Hf5Ga3
P: 1
133:287219 Standard enthalpies of formation of some 5d transition metal gallides by high-temperature direct synthesis calorimetry. Meschel, S. V.; Kleppa, O. J. James Franck Institute, The University of Chicago Chicago, IL 60637, USA J. Alloys Compd., 311(2), 241-247 (English) 2000. The std. enthalpies of formation of some 5d transition metal gallides have been measured by high-temp. direct synthesis calorimetry at 1373.+-.2 K. The following results

(in kJ/mol) are reported: LaGa2 (- 69.2.+-.2.4); HfGa3 (-42.4.+-.2.7); Hf5Ga3 (-45.4.+-.2.1); Ta5Ga3 (- 28.3.+-.2.2); OsGa3 (-27.4.+-.1.6); IrGa3 (- 41.2.+-.1.9); IrGa (-43.3.+- .1.8); Pt3Ga (-41.3.+- .2.2); and PtGa (-57.3.+-.2.3). The results are compared with some earlier values obtained by soln. calorimetry or derived from EMF measurements. They are also compared with the predicted values of Miedema and coworkers. We compare the enthalpies of formation of 3d, 4d and 5d transition metal gallides and the heats of formation of the 5d gallides with available values for the 5d transition metal aluminides and germanides.

F: HfGa3
P: 1
133:287219 Standard enthalpies of formation of some 5d transition metal gallides by high-temperature direct svnthesis calorimetry. Meschel, S. V.; Kleppa, O. J. James Franck Institute, The University of Chicago Chicago, IL 60637, USA J. Alloys Compd., 311(2), 241-247 (English) 2000 · The std. enthalpies of formation of some 5d transition metal gallides have been measured by high-temp. direct synthesis calorimetry at 1373.+-.2 K. The following results (in kJ/mol) are reported: LaGa2 (- 69.2.+-.2.4); HfGa3 (-42.4.+-.2.7); Hf5Ga3 (- 45.4.+-.2.1); Ta5Ga3 (- 28.3.+-.2.2); OsGa3 (- 27.4.+-.1.6); IrGa3 (-41.2.+-.1.9); IrGa (-43.3.+-

2000

.1.8); Pt3Ga (-41.3.+-.2.2); and PtGa (-57.3.+-.2.3). The results are compared with some earlier values obtained by soln. calorimetry or derived from EMF measurements. They are also compared with the predicted values of Miedema and coworkers. We compare the enthalpies of formation of 3d, 4d and 5d transition metal gallides and the heats of formation of the 5d gallides with available values for the 5d transition metal aluminides and germanides.