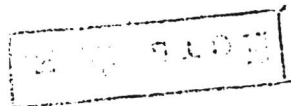


Pan-ga

Ho Ya₃, On Ya₃, Tu Ya₃, Li Ya₃ 1964
(Кривич. евро-па) VIII 4140

Кривичеве Н.Т., Маркив В.Т.,
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1967

M Ga (M=Y и P3M кроме En 36)

VIII-61

Dwight A. E. Dewdney J.W.
Conner R. A. Acta Crystallogr.
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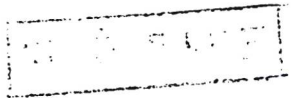
Px 1968

75 377

M Ga ($M = Nd, Sm, Ho, Er, \text{Lu}$, ¹⁹⁶⁷Lu) (критер. сир-ра)

Rieger W., Parthe' E,

Monatsh. Chem., VIII 3857
1967, 98, N 5, 1935-1940



PX, 1968, 245 to 258 M

La_5Ga_3 ; Nd_5Ga_3 , Sm_5Ga_3 , Gd_5Ga_3 VIII 194
 Tb_5Ga_3 ; Dy_5Ga_3 ; Ho_5Ga_3 ; Er_5Ga_3 ; Tm_5Ga_3 ,
 Lu_5Ga_3 Кривич. сѣ-ра

Palenzona A., Franceschi L., J. Less-Com-
mon Metals 1968, 14, N1, 47-53

The crystal structure of rare-earth
gallides (RE_5Ga_3)

PX

111

VIII R₅Gaz; R = La, Nd, Sm, Gd, Tb, Ho, Er, Tu, Lu. 1969.
abc.

Дана Д., Крим'ячкер П.І.

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Свогун Турів Cr₅B₃ і Mn₅Si₃ в ас-
тематично-фізико-хімічному

Е. В. Д. 1969.

Мі

TmGa₃

XVII-92

1973

74928g' Thermodynamics of thulium-gallium interactions.
 Shkol'nikova, T. M.; Bayanov, A. P.; Serebrennikov, V. V.
 (Tomsk. Gos. Univ., Tomsk, USSR). *Tr. Tomsk. Gos. Univ.*
 1973, 237, 192 (Russ). The thermodyn. of Tm-Ga interactions
 was studied by emf. (E) measurement at 500-650° for alloys
 contg. 0.01-10 wt. % Tm. The concn. dependence of E was
 expressed by the equations $E_{773^{\circ}\text{K}} = 0.313 - 0.15071 \ln X \pm 0.004$,
 $E_{673^{\circ}\text{K}} = 0.365 - 0.12301 \ln X \pm 0.002$, and $E_{523^{\circ}\text{K}} = 0.393 - 0.10651 \ln X \pm 0.003$, where E is in V and X is the Tm
 mole fraction. The temp. T dependence of E for satd. solns. is
 described by the equation $E = 1.118 - 5.55 \times 10^{-4} T \pm 0.0015$.
 The T dependences of the activity coeff. of the liq. Tm (γ), of
 the excess Gibbs free energy ΔG^E of the liq. Tm in kcal/mole, of
 the soly. C of the TmGa_3 compd. in Ga in at. % Tm, and of the
 Gibbs free energy ΔG of TmGa_3 in kcal/mole, resp., are expressed
 by the equations: $\ln \gamma = 6.892 - 11217/T \pm 0.1$, $\Delta G^E = 48 - 0.027T \pm 0.2$, $\ln C = 3.575 - 3231/T \pm 0.018$, and $\Delta G = 0.0237T - 50 \pm 0.34$.
 Karel V. Ains

ΔG

C.A. 1974 80. N14

1978

T_{mx} Gay

Yatsenko S. P., et al

Izv. Akad. Nauk SSSR,

Met. 1978, (3), 207-4

T_m



(См Мос Газ; 7)

Tm_2Ga_3

$YbGa$

ополоз
переп.

1979

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г. Less-Common Met.
1979, 64(2), 185-99.

ср. Sc Ga_x-I

Tm Ga₃

1986

104: 178829f Quadrupole pair order in cubic thulium-gallium (TmGa₃) studied by thulium-169 Moessbauer spectroscopy. Gubbens, P. C. M.; Van der Kraan, A. M.; Buschow, K. H. J. (Interuniv. React. Inst., 2629 JB Delft, Neth.). *Hyperfine Interact.* 1986, 29(1-4), 1343-6 (Eng). Cubic TmGa₃ was studied by ¹⁶⁹Tm Moessbauer spectroscopy. Below the paramagnetic-to-antiferromagnetic 1st-order transition coexistence of a paramagnetic and a magnetically ordered phase was found. Above and below the quadrupolar pair ordering temp. no change in quadrupole splitting was found in the paramagnetic phase.

T
tr;

c.A. 1986, 104, N20

TmAl₃

(IM. 32546)

1989

Deutz A.F., Brom H.B.
et al.,

G.
maassen.
cb-ra

Physica B 1989, 160,
N1, 83-90.

Magnetic

properties
of TmAl₃ and TmGa₃

TmGa₃

1991

114: 193644s Thermal properties of thulium-gallium (TmGa₃). Czopaik, A.; Madge, H.; Post, R. (W. Trzebiatowski Inst. Low Temp. Struct. Res., Int. Lab. High Magn. Fields Low Temp., PL-50-950 Wroclaw, Pol.). *Phys. Status Solidi B* 1991, 163(2), 473-80 (Eng). The heat capacity and thermal expansion of TmGa₃ single crystal are reported. At low temps. in comparison to T_N the heat capacity and thermal expansion coeff. have a T³ exp(-Δ/T) dependence with an energy gap Δ in the spin-wave spectrum equal to 1.15 K. In the paramagnetic state the crystal-field contribution to the thermal properties of TmGa₃ is analyzed.

(cp)

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Tm Ga_2

1999

Meschel S.V. et al.,

(AsH¹⁰⁰) J. Alloys Compd. 1999,
285 (1-2), 179-184

(all - Tm Ga_2 ; $\bullet$ $\overline{\text{I}}$)

Tm 6a₃

2007

Meschel S.V. et al.,

Δ₅H, H₂CO -
комментар.
канонич.

g. Ollees Compd. 2007,
319 (1-2), 204-209

(all. ● 6a₂; I)