Ce – Ga, In, Te

Me_2X, MeX_3, Me_2X_3 (Tm)

$M = Pr, Ce, La$ $X = Sn$,

$M'Y$, $M'Y_2$, $M'Y_3$ (Tm)

$M' = Pr, La, Ce$ $Y = Ag, Au$

$PrPb$, $PrPb_3$, Pr_2Pb, $PrCu_2$, $PrCu_6$, $PrAl_2$, Ce, La,
$PrTl$, $PrTl_3$, Ce_2Pb, $CePb_3$, $CeTl$, $CeTl_3$, $CeCu_2$,
$CeCu_6$, $CeAl_2$, $LaPb$, $LaPb_3$, La_2Pb, $LaTl$, $LaTl_3$,
$LaCu_2$, $LaCu_6$, $LaAl_2$ (Tm)

Rolla L., Iandelli A., Cannerii G., Vogel R.,
Z. Metallkunde, 1943; 35, 29-42 Б

$LaHfO_3$, $3Y_2O_3 \cdot 5Al_2O_3$,
$CaTiO_3$, $Y_2O_3 \cdot Al_2O_3$,
$KNbO_3$, $3Sm_2O_3 \cdot 5Ga_2O_3$,
ReO_3, $3Nd_2O_3 \cdot 5Ga_2O_3$,
$3Ce_2O_3 \cdot 5Ga_2O_3$, (кр. стр.)

VIII 5028
1955

Keith M. L., Roy R.,
Amer. Mineralogist, 1954, 39
№ 1-2, 1-23

BP - 4576 - VIII 1954

CeJn$_x$ BP - 2184 - VIII

Vogel R., Kloss H

(Tm, Kp. ETh-Ha) Z. Metallkunde

1954, 45 nH, 633-38.

Nd Ga_2 / Nd = Y, La, Ce, Pr, Nd, Sm, Gd, Tb, Dy, Ho, Er) 1961
(кристал. стр-ра) VIII 4241

Haszko S.E.

Trans. Metallurg. Soc. AIME,
1961, 221, nr 1, 201-202

РЖ, 1961, 8 Ж42

Ce_3In, Ce_3Tl, Ce_3Sn, Ce_3Pb, Nb_3In | VIII-3978

(кристал. структура) VIII 4256

19 М

Yeitschko W., Nowotny H., Benesovsky F., Monatsch. Chem., 1964, 95, N 4-5, 1040-1043

РЖХ, 1965, 9Д30

М-11

1964

$Ce-X_{0,75\to1,0}^{}Ni_{3,25\to3,0}$

(X = Cu, Be, Zn, Cd)

(кристал. стр-ра)

$CeGa_2Ni_2$

Заренюк О.С., Кринякевич Я.И., Гладышевский Е.И.,

Кристаллография, 1964, 9, №6, 835-836.

РХ, 1965, 8Д218 мл

$CaSn_3$, $CaIn_3$ (A = P3?) VIII 4234
(кристал. стр-ра) 1965

Harris I.R., Raynor G.V.,
J. Less-Common Metals,
1965, 9, №1, 7-19

РЖ, 1966, 8Б339

Ce_3Zn (Кристал. стр-ра) - 1966

VIII 4111

Daniel M.,

Acta crystallogr.,
1966, 20, № 4, 586.

"The structure of intermetallic compound Ce_3Zn".

Ли

РЖ, 1966, 23 Б242

$CeAlO_3$ (Tm)
$CeCrO_3$
$CeGaO_3$

VIII 2847 1966

Леонов А.И., Андреева А.Б., Швайко-Швайковский В.Е., Келер Е.К.,

Изв. АН СССР, Неорган. Материалы, 1966, 2/3/, 517-23

Высокотемпературная химия церия в системах $CeO_2-Al_2O_3$, $-Cr_2O_3$, $-Ga_2O_3$

CA, 1966, 65, № 3, 3314 Б

YCu, EuCu YAg, YbAg, YbAu, YIn, LaIn,
PrIn, TmIn, YbIn, TmTl, TmPt$_2$, YbPt$_2$,
TbFe$_2$, YbAu$_2$, YAg$_2$, YAl$_3$, TbIn$_3$, TmIn$_3$,
YbIn$_3$, EuTl$_3$, TbTl$_3$, TmTl$_3$, LaPt$_3$, PrPt$_3$,
NdPt$_3$, SmPt$_3$, TbPt$_3$, TmPt$_3$, YbPt$_3$, LaIn$_3$,
CePt$_3$, CeIn$_3$, PrIn$_3$, NdIn$_3$, YbAl$_3$.
(кристал. стр-ра)

1968

Moriarty J.L., Humphreys J.E.,
Gordon R.O., Baenziger N.C.,
Acta crystallogr., 1966, 21, N5, 840

РЖ, 1967, 3Д23 Ам

Mg (M = Y и РЗМ, кроме Eu, Ce)
Крист. стр-ра VIII 61 1964
Dwight A. E., Downey J. W., Conner R. A., Acta crystallogr.
1967, 23, N5, 860

$LaGaS_3(Se_3)$, $CeGaS_3(Se_3)$, $PrGaS_3(Se_3)$ 1967

$NdGaS_3(Se_3)$, $SmGaS_3(Se_3)$ (Tm) VIII 614

Эфендиев Г.Х., Караев З.Ш.

В сб. „Халькогениды" Киев, Наук. думка, 1967, 133-140

Синтез и исследование сульфо- и селеногаллатов редкоземельных элементов.

8

РЖ Хим. 1968

23Б416

VIII Ce_5Ga_3 и Pr_5Ga_3. 1968.

кр. стр.

Дзяна Д.І., Гладишевський Е.І.
Кріпякевич П.І.

Доповіді АН УРСР, 1968, А, №3, 282-284 (укр.)

Сполуки Ce_5Ga_3 і Pr_5Ga_3 та їх кристалічні структури.

РЖ, 1968, 19Б471.

RX_2 (R = РЗМ; X = Cu, Ag, Au, Zn, Cd, Ga, In, Tl) (кристалл. стр-ра) 1968 VIII 4231

Iandelli A., Palenzona A.

J. Less-Common Metals

1968, 15, №3, 273-284

РЖХ, 1968, 17Б164

Ln_2In, Ln_5In_3 VIII 3421 1968

VIII

Palenzona A.

J. Less-Common Metals, 1968, 16, 379-384

The crystal structure and lattice constants of $R.E._2In$ and some $R.E._5In_3$ compounds.

РЖХим, 12Б462 (1969). Ф Ме

8 VIII 4904 1970

$CeFe_2Si_2$, $CeGa_2Al_2$, Ce_2FeSi_3, $CeFeSi_2$, $CeFeSi$

Крист. сф-ла

Бодак О.И., Гладышевский Е.И., Кардаш А.Е.
Черкашин Е.Е.

«Изв. АН СССР. неорган. материалы»,
1970, №6, 6, 1069-1072

АМ 12

ФМ, 1970, 10456

CeCa$_2$ VIII 5251 (ΔG4) 1971

Chowdhury P.J., Roy, Ghost A.

„Met. Trans," 1971, 2, №8, 2171-2174 (англ.)

Изменение периодических характеристик энергий связей Sn-Ag.

РЖ, 1972, 1А171

LaIn$_3$, CeIn$_3$, Pr In$_3$ (Cp) VIII 5419/1971

Nasu S., Van Dieper A.M., Neumann H.H.,

Craig R.S.

J. Phys. and Chem. Solids, 1971, 32, N12,

2773-2777 (англ)

Specific heats of LaIn$_3$, CeIn$_3$ and PrIn$_3$ at temperatures between 1,5 and 4,2°K.

РЖ Хим., 1972

135577

Ал Б Ср 5

$LaIn_3$, $CeIn_3$, $PrIn_3$ (Cp) 8 1971

Van Diepen A.M., Craig R.S.,
Wallace W.E., VIII 5192

J. Phys. Chem. Solids, 1971, 32, N8,
1867-72 (англ.)

Crystal field and magnetic
heat capacity in $PrIn_3$ and
$CeIn_3$.

An (Cp) 9 CA1971, 75, N22, 133739t

VIII - 5988

1972

Гл. сеть изр. (abc);

Kabre S., Julien-Poujol M., Guittard M.

C. r. Acad. sci.", 1972, C275, N 22, 135[illegible]
1370 (франц.).

Пл. есть оригинал

$Ce_6Ga_{10/3}Se_{14}$ Lozac'h 1973

Anne-Marie, Mlle; et al

нашл.; „Bull. Soc. chim. France"

нарам

решетки 1973, jan., part 1, 6-11, IV

(см Gd_2Se_3; I)

XVIII-341 1974

$LaSn_3$, $CeSn_3$,
$PrSn_3$, $NdSn_3$, $SmSn_3$, $EuSn_3$, $GdSn_3$, $YbSn_3$,
$LaIn_3$, $CeIn_3$, $PrIn_3$, $LaPb_3$, $CePb_3$, $PrPb_3$, $NdPb_3$,
$SmPb_3$, $EuPb_3$, $GdPb_3$, $TbPb_3$, $DyPb_3$, $HoPb_3$, $ErPb_3$,
$TmPb_3$, $YbPb_3$, $LaTl_3$, $CeTl_3$, $PrTl_3$ $NdTl_3$, $SmTl_3$,
$GdTl_3$, $TbTl_3$, $DyTl_3$ $YbTl_3$ (a Hf, Tm, a Hm)

Palenzona A., Cirafici S. Есть Ф-К

Anal. Calorim. Vol. 3. New York-London, 1974,

743-756

Ал, М

$LaIn_3$, $CeIn_3$, $PrIn_3$, $NdIn_3$, $SmIn_3$, $GdIn_3$, $TbIn_3$, $DyIn_3$, $HoIn_3$, $ErIn_3$, $TmIn_3$, $YbIn_3$, $LuIn_3$ $LaTl_3$, $CeTl_3$, $PrTl_3$, $NdTl_3$, $GdTl_3$, $TbTl_3$, $DyTl_3$, $YbTl_3$ (ΔH_f, ΔH_m, ΔS_m)

1974

XVIII 14.1

Palenzona A., Cirafici S.

Thermochim. acta, 1974, 9, N4, 419-425 (англ)

Dynamic differential calorimetry of intermetallic compounds. VI. Heats of formation, heats and entropies of fusion of $REIn_3$ and $RETl_3$ compounds

РЖХим, 1975
15701

[illegible]

$Ce_2S_2 \cdot Ga_2S_3$

1944

Loireau-Lozac'h et al.

Mater. Res. Bull.

1974, 12(9), 881-6 (Fr)

Polycrystalline

(cer. $La_2S_2 \cdot Ga_2S_3$, T)

1977

$CeGa_2$

Ce_5Ga_3

(Tm)

88: 127023g **Cerium-gallium, neodymium-gallium, and samarium-gallium phase diagrams.** Yatsenko, S. P.; Semenov, B. G.; Chuntonov, K. A. (Sverdlovsk, USSR). *Izv. Akad. Nauk SSSR, Met.* 1977, (6), 185–7 (Russ). X-ray diffraction and DTA were used to det. the phase diagrams of Ce–Ga, Nd–Ga, and Sm–Ga alloys. The Ce–Ga system is characterized by a max. of the liquidus at ~66.6 at.% Ga. $CeGa_2$ m. 1460°. The compd. has a AlB_2–type structure with *a* 4.311 and *c* 4.327 Å. CeGa and Ce_5Ga_3 incongruently m. 955 and 830°, resp., and have a CrB– and W_6Si_3–type structure, resp. The temp. of the peritectic formation of Ce_3Ga (560°) could be detd. only after 300–h homogenization at 450°. Ce_3Ga has a Cu_3Au–type structure (*a* 5.40 Å). The eutectic temp. is ~500° (~20 at.% Ga). The Nd–Ga system contains: AlB_2–type $NdGa_2$ which crystallizes at 1455° (*a* 4.258 and *c* 4.258 Å), NdGa, and Nd_5Ga_3 isomorphous with CeGa and Ce_5Ga_3 and formed by the peritectic reaction at 1090 and 930°, resp. Nd_3Ga has a Cu_3Au–type cubic structure (*a* 5.43 Å). Analogous intemetallides were found in the Sm–Ga system which points to a great similarity of these systems.

C.A. 1978 88 N18

1978

CeTl3

Fryanova T.V., et al

Zh. Fiz. Khim. 1978, 52(2),

ΔHf

504-5

(See LaTl3; I)

$CeIn_3$
Ce_2In_3
$CeIn$

1978

ΔH_f

17 Б768. Теплоты образования сплавов церия с индием. Новоженов В. А., Школьникова Т. М., Серебренников В. В. «Реакцион. способность веществ». Томск, 1978, 9—11

В жидкостном калориметре переменной т-ры при 25° определены теплоты р-рения 15 сплавов Ce—In и чистых металлов в HCl-к-те. Рассчитаны и табулированы значения теплот образования сплавов. На кривой зависимости ΔH(обр.) от содержания Ce в сплаве есть три перегиба — при 25,5; 41,1 и 50,0 ат.% Ce, отвечающих интерметаллич. соединениям $CeIn_3$, Ce_2In_3 и CeIn, что соответствует диаграмме состояния системы Ce—In. Значения $-\Delta H$(обр.) указанных соединений равны соотв. 14,7±0,2; 15,5±0,2 и 14,5±0,2 ккал/г-атом и являются наибольшими в изученной системе. А. Б. К.

Ж. 1979, N17

In-Ce x
(сплав)

1978

93: 77800p Heats of formation of alloys of cerium with indium. Novozhenov, V. A.; Shkol'nikova, T. M.; Serebrennikov, V. V. (USSR). *Reakts. Sposobn. Veshchestv* 1978, 9–11 (Russ). Edited by Serebrennikov, V. V., Tomskii Univ.: Tomsk, USSR. The heat of formation (ΔH) was detd. for In–Ce alloys as a function of the Ce content which varied from 1.5 to 95.5 at.%. The alloys were prepd. by vacuum m. 800° for 100 h and followed by 150 h annealing at 500°. Max. ΔH was shown by the intermetallic compds. *CeIn*$_3$ [12157-59-4], *Ce*$_2$*In*$_3$ [71873-82-0], and *CeIn* [12590-72-6] as an indication of their high thermodn. stability.

(ΔHf)

CA 1980 93 N 8

1978

CeGa2
PrGa2
NdGa2
GdGa2
TbGa2
DyGa2
HoGa2
ErGa2
(TNeel)

89: 35443m Magnetic properties of the rare-earth intermetallics RGa_2. Tsai, T. H.; Gerber, J. A.; Weymouth, J. W.; Sellmyer, D. J. (Behlen Lab. Phys., Univ. Nebraska, Lincoln, Nebr.). *J. Appl. Phys.* 1978, 49(3, Pt. 2), 1507-9 (Eng). The magnetic susceptibility (χ) of polycryst. samples of RGa_2, R = Ce, Pr, Nd, Gd, Tb, Dy, Ho, and Er, was measured at low field, from 1.5 K to 300 K. The magnetization of these samples also was measured up to 80 kOe at low temps. Antiferromagnetic behavior was obsd. for all the samples with Neel temps. (T_N) ranging from about 4.1 K for $CeGa_2$ to about 14.8 K for $TbGa_2$. Curie-Weiss fits to the high-temp. $\chi(T)$ data led to effective moments in good agreement with those expected for R^{3+} ions. The paramagnetic Weiss temps. cannot be reconciled with the de Gennes theory based on free electron coupling of the R spins via the RKKY interaction. Elec. resistivity of selected polycryst. samples has been measured, and the effects of spin-disorder scattering obsd. below T_n. $CeGa_2$ shows no evidence of Kondo behavior. Magnetization measurements for the polycryst. samples show metamagnetic phase transitions when the antiferromagnetic R–R interactions are overcome. Measurements on a $HoGa_2$ single crystal show that the [100] direction is the easy direction.

+7

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C.A. 1978, 89, 87

CeIn$_3$
CeAl$_2$
CeAl$_3$

1979

91: 31816d Magnetization and specific heat of abnormal cerium compounds. Berton, A.; Chaussy, J.; Chouteau, G.; Cornut, B.; Flouquet, J.; Odin, J.; Palleau, J.; Peyrard, J.; Tournier, R. (Cent. Rech. Tres Basses Temp., CNRS, 38042 Grenoble, Fr.). *J. Phys., Colloq. (Orsay, Fr.)* 1979, (C5), 326–7 (Eng). The abnormal Ce compds. $CeIn_3$, $CeAl_2$, and $CeAl_3$ were studied by magnetization and sp. heat measurements under pressure. The vicinity of the low temp. magnetic–nonmagnetic transition for $CeIn_3$ leads to a strong increase under pressure of the electronic sp. heat, whereas for $CeAl_2$ a decrease is obsd. Magnetization expts. performed on Ce_3Al_{11} clearly show that striking properties attributed to $CeAl_3$ may be due to a small content of Ce_3Al_{11} in $CeAl_3$ samples.

(Cp)

C.A. 1979, 91, N4

91: 217807g Heats of formation of cerium-indium alloys. Novozhenov, V. A.; Shkol'nikova, T. M.; Serebrennikov, V. V. (USSR). *Reaktsion. Sposobnost Veshchestv, Tomsk* 1978, 9-11 (Russ). From *Ref. Zh., Khim.* 1979, Abstr. No. 17B768. Title only translated.

1979

C-Ce-In

91: 182562d Heats of the formation of cerium-indium alloys. Novozhenov, V. A.; Shkol'nikova, T. M.; Serebrennikov, V. V. (USSR). *Reaktsion. Sposobnost Veshchestv, Tomsk* 1978, 9–11 (Russ). From *Ref. Zh., Metall.* 1979, Abstr. No. 8161. Title only translated.

(ΔHf)

C.A. 1979 91 No 22

CeGa$_2$

1979

V92: 170060m The cerium-gallium system. Dayan, D.; Pelleg, J.; Guisser, R. (Mater. Eng. DDep., Ben-Gurion Univ. Negev, Beer Sheva, Israel). *J. Less-Common Met.* 1979, 68(2), 199–205 (Eng). The Ce-Ga system was studied by DTA, metallog., x-ray diffraction, and electron microprobe anal. The following intermediate phases were obsd: Ce_3Ga_2 (decomps. at 850°), CeGa (decomps. at 960°) and $CeGa_2$ (m.p. 1444°). Two eutectic reactions occur: Ce–Ce_3Ga_2 (459 ± 3°) and one on the gallium-rich side at about 30°. The addn. of Ga to Ce effects the δ(bcc.) to γ(fcc.) transition temp. of Ce, lowering it from 725 to 703°. The structure of Ce_3Ga_2 was identified as the tetragonal Zr_3Al_2 type with the following lattice parameters: a = 8.3 Å, c = 7.64 Å.

(Tm)

CA 1980 92 N20

Ce-In
Ce-Tl

1980

92: 186582u Phase equilibria in the cerium-indium and cerium-thallium systems. Delfino, Stefano; Saccone, Adriana; Ferro, Riccardo (Ist. Chim. Gen. Inorg., Univ. Genova, Genoa, Italy). *Z. Metallkd.* 1980, 71(3), 165-71 (Eng). The Ce-In and Ce-Tl systems were studied by DTA, metallog., and x-ray anal. In the Ce-In system several phases were obsd. and 4 eutectics. In the Ce-Tl system 6 phases were obsd. and 4 eutectics. The crystal structures of Ce_3In, Ce_3Tl, $CeIn$, Ce_3Tl_5, $CeIn_3$, and $CeTl_3$ were confirmed. $CeIn_3$ and Ce_3Tl_5 are orthorhombic Pu_3Pd_5-like structures and $CeIn_2$ is orthorhombic $CeCu_2$ type.

pasted fabric.

CA 1980 92 N2

1980

$Ce Te_3$
(cmiab)

Denyskina T.K. et al

Izv. Akad. Nauk SSSR,

ΔH_f
ΔG_f
ΔS_f

Met. 1980, (4), 58-60

See $La Te_3$; I

1980

$CeTl_3$

94: 94885h Heat capacity, magnetization, electrical resistivity and neutron diffraction of cerium thallium ($CeTl_3$). Elenbaas, R. A.; Schinkel, C. J.; Storm van Leeuwen, S.; Van Deudekom, C. J. M. (Natuurkundig Lab., Univ. Amsterdam, 1018 XE Amsterdam, Neth.). *J. Magn. Magn. Mater.* 1980, 15–18(3), 1218–20 (Eng). Magnetic susceptibility, magnetization in high fields, neutron diffraction, elec. resistivity and heat capacity measurements in various magnetic fields of $CeTl_3$ are reported. The Ce^{3+} atoms exhibit a crystal-field splitting of 60 K and order antiferromagnetically at $T' = 3.85$ K. Complex internal fields play an important role in this system.

(Cp)

C.A. 1981 94 N 12

1980

$CeIn_3$

93: 229857c Magnetic ordering in the presence of fast spin fluctuations: A neutron scattering study of cerium-indium ($CeIn_3$). Lawrence, J. M.; Shapiro, S. M. (Phys. Dep., Univ. California, Irvine, CA 92717 USA). *Phys. Rev. B: Condens. Matter* 1980, 22(9), 4379–88 (Eng). In $CeIn_3$, antiferromagnetic order occurs at 10.23 ± 0.01 K. The satd. ordered moment 0.64 ± 0.1 μB per Ce atom is comparable to the value 0.71 μB expected for ordering within the Γ_7 doublet, which is the ground level expected for $J = 5/2$ Ce moments in a cubic crystal field. The crit. behavior of the order parameter is expressed in terms of the staggered magnetization. The nearly mean-field behavior is discussed in the context of recent theories which describe crit. behavior in systems where the crit. temp. is much smaller than a characteristic spin-fluctuation temp. The inelastic scattering measurements provide evidence for the existence of such a characteristic energy. At low temps. the inelastic cross section is dominated by an anomalously broad magnetic scattering peak, centered near 13 meV and with half-width of ~10 meV. The large linewidth arising from fast spin fluctuations can be related to the strong Kondo-type exchange coupling of the 4*f* spins to the conduction electrons.

Ttr

C.A. 1980. 93 n 24

CeTl 1981

Sekizawa Kazuko.,
et al.

образов. J. Phys. Soc. Jap., 1981,
перех. 50, N 10, 3467-3471.

(см. LnTl; III)

$CeIn_3$ 1982

Gschneidner K. A., Jr.,
Ikeda K., et al.
Rare Earths Mod. Sci. and
Technol. Proc. 15th Rare
Cp, Earths Res Conf., Rolla, 15-18
June, 1981. New York; London,
1982, 299-300.

(cell. $ScIn_3$; I)

$TlPO_3 \cdot Ce(PO_3)_3$, $2TlPO_3 \cdot Ce(PO_3)_3$ 1983

6 Б3106. Фазовые равновесные соотношения в псевдобинарной системе $TlPO_3$—$Ce(PO_3)_3$. Phase equilibrium relations in the pseudo binary system $TlPO_3$—$Ce(PO_3)_3$. Rzaigui Mohamed, Trabelsi Malika, Ariguib Najia Kbir. «J. Solid State Chem.», 1983, 50, № 1, 86—90 (англ.)

С помощью ДТА, дифрактометрии и ИК-спектроскопии изучены фазовые соотношения в системе $TlPO_3$ (I)—$Ce(PO_3)_3$ (II). Образцы получены нагреванием соотв-щих кол-в смеси I и II в кварц. тиглях при 573—873 К в течение нескольких дней. Представлена фазовая диаграмма системы, в к-рой образуются два соединения I·II и 2I·II. Оба плавятся перитектически при т-ре 1078 и 843 К соотв. В системе образуется эвтектика с т. пл. 699 К при 3 мол.% II. I претерпевает полиморфное превращение при 685 К. Параметры ячейки для I·II; монокл., a 10,541 (3); b 9,133 (3); c 11,034 (3) А; β 105,92 (1)°; $Z=4$, ф. гр. $P2_1/n$; для 2I·II: трикл.; a 7,218 (3); b 13,286 (4); c 7,243 (3) А; α 90,25 (4); β 107,71 (2); γ 90,29 (3)°; $Z=2$; ф. гр. P1. Оба соединения относятся по структуре к полифосфатам с длинной цепью. Л. Г. Титов

Tm;

Ж. 1984, 19, №6

Cl Fn3

Dm. 21530

1985

Gao Q.Z., Kanda E.,
Kitazawa H., et al.,

Electro-
conversion,
Cp.

J. Magn. and Magn.
Mater., 1985, 47-48.

СПб | Оп. 22849 | 1985

Kurisu M., Tanaka H.,
Kadomatsu H., et al.,

Электро-
сопротивл.
магнито-
восприимчив.

J. Phys. Soc. Jap.,
1985, 54, N 9, 3548-
3553.

Tl_4CeS_4 1985

Tl_2CeS_5 Перец Е.Ю., Лазарев В.Б. и др.

9 Всес. совещ. по терм. термо-графич. исслед. анализ., Ужгород, сент., 1985. Тез. докл. Киев, 1985, 176–177.

(см. $Tl_4Si_5S_{11}$ и др.; I)

$Tl_2Ce_2S_5$ 1985

Переш Е.Ю., Лазарев В.Б. и др.

9 Всес. совещ. по терм. анал., Ужгород, сент., 1985. Тез. докл. Киев, 1985, 176-177.

термо-
графия.
Исслед.

(см. Tl-Y-Si-S и др.; I)

CeTl 1987

Kadomatsu H.,
Karisu M., et al.

Tr; J. Phys. F: Met. Phys.
1987, 17 (12), L 305-L 309.

(cv. La Ag; I)

$CeIn_3$ 1988

Marcenat C., Fisher R. A.
et al.

Cp; J. Magn. Magn. Mater.
1988, 76-77, 115-16.

(c.u. $CeAl_2$; I)

1988

$CeBa\tilde{x}$ Новожсенов В.А.

ΔH_f; Физ. хим. методы исслед. хим. процессов. Барнаул, 1988. С. 92-95.

(см. $Ce\text{-}Al\tilde{x}$; I)

CeInx Мовчанов В.А. 1988

ΔH_f; Физ. хим. методы исслед. хим. процессов. Барнаул, 1988. С. 92-95.

(см. CeAlx; I)

$CeAl_2Ga_2$ (Om 30429) 1988

Sampathkumaran E.V.,
Das I.K. et al.,

Cp. магнитовосприимчив.

Solid State Commun. 1988, 67, N 10, 945-948.

Себа́з (от. 29516) 1988

Takahashi M., Tanaka H.,
et al.,
J. Phys. Soc. Jap., 1988,
57, N 4, 1377–1383.

фаза. переход

Li 3h (OM 33878) 1989

Chen Y.-Y., Lawrence J. M.,
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Phys. Rev. B 1989, 40,
N16, 10766-10777.

Ce_3Ga_2

1989

) 4 Б2050. **Кристаллическая структура Ce_3Ga_2.** Crystal structure of Ce_3Ga_2 compound / Jatsenko S. P., Grin Y. N., Sichevich O. M., Sabirsiyanow N. A., Fedorchyuk A. A. // Twelfth European Crystallographic Meeting, Moscow, Aug. 20—29, 1989: Collect. Abstr.— Vol. 2 / USSR Acad. Sci.— Moscow, 1989.— С. 85.— Англ.

Проведен РСтА (389 отражений, R 0,035), Ce_3Ga_2. Параметры тетрагон. решетки: a 8,066, c 14,495 А; Z 4, ф. гр. $P4/ncc$. Атомы Ga окружены 9 атомами по мотиву архимедовой антипризмы, атомы Ce имеют координац. числа Ce — 13 или 14. Кратчайшие межатомные расстояния: Ce—Ce 3,321, Ce—Ga 3,135, Ga—Ga 2,670 А. Структура м. б. описана как производная от Ba_5Si_3, а не Zr_3Al_2 как считалось ранее.

В. Б. Калинин

кристаллструктура

Х.1990, №4

CeJnPt4 | Оп. 33864 | 1989

Malik S.K., Adroja D.T.,

(Ср) Phys. Rev. B 1989, 40,

N 13, 9378 – 9381

CeTl3

1989

111: 223826k Thermodynamic and transport properties of the local moment antiferromagnet cerium-thallium (CeTl3). Rehman, S.; Crow, J. E.; Mihalisin, T.; Schlottmann, P. (Dep. Phys., Temple Univ., Philadelphia, PA 19122 USA). *Solid State Commun.* 1989, 71(5), 379-82 (Eng). The sp. heat, susceptibility and resistivity of CeTl3 were measured as a function of temp. The Ce^{3+}-ions have well-defined local moments which order antiferromagnetically below T_N = 3.8 K. The J = 5/2 level of the Ce^{3+}-ions is split by the cubic cryst. field into a Γ_8-excited multiplet. The features of the sp. heat, susceptibility and the resistivity are interpreted in terms of the antiferromagnetic order, the crystal field splitting and a weak Kondo effect. Analogies to the isostructural compd. CeIn3 are stressed.

Cp, Tt2

C.A. 1989, 111, N 24

$CeInCu_2$ 1992

Sato K., Isikawa Y.,
Mori K.

(Сравн., J. Magn. Magn. Mater.
Tr) 1992, 104-107, 1435-6.

(сокр. $LaInCu_2$; I)

CeGeGa

1993

120: 21781s Cerium-germanium-gallium (CeGeGa) - a ferro= magnetic dense Kondo system. Dhar, S. K.; Pattalwar, S. M.; Vijayaraghavan, R. (Tata Inst. Fundam. Res., Bombay, 400 005 India). *Physica B (Amsterdam)* 1993, 186-188, 491-3 (Eng). Heat capacity, magnetic susceptibility and elec. resistivity measurements of CeGeGa, which has α-$ThSi_2$-type structure, show that it orders ferromagnetically at ~5.5 K. The heat capacity data show that the Kondo interaction is also operative and a value of 2.1 K for the Kondo temp. is estd.

(Cp)

C.A. 1994, 120, N2

CeGaO3

1996

12Б228. Кристаллическая структура $CeGaO_3$ типа перовскита, полученных методами дуговой и зонной плавки / Shishido T., Yutong Z., Horiuchi H., Yoshikawa A., Hosoya S., Tozawa S., Saito A., Tanaka M., Fukuda T. // Nippon kagaku kaishi = J. Chem. Soc. Jap.— 1996 .— № 11 .— С. 991—994 .— Яп. ; рез. англ.

структура

Кристаллическая фаза $CeGaO_3$ синтезирована двумя методами. Параметры тетрагональной решетки двух образцов идентичны: a 0,3873, c 0,3880 нм, V $0{,}5819 \cdot 10^{-28}$ $м^3$, Z 1, ф. гр. P4/mmm. Соединение не устойчиво на воздухе при высокой температуре, а разлагается при 1250 °C на CeO_2 и Ga_2O_3.

Н. Л. Смирнова

X. 1997, N 12

Le fax

Dm. 40784

2001

Babu R., Nagarajan K.
et al;

Δ Hf

J. of Alloys and
Compounds, 2001, 316,
159-168

Ce_3Ga_2, CeGa
$CeGa_2$, $CeGa_6$

2001

135: 98042u **Standard enthalpies of formation of cerium gallides by high temperature reaction calorimetry.** Babu, R.; Nagarajan, K.; Venugopal, V. (Fuel Chemistry Division, Indira Gandhi Centre for Atomic Research, Kalpakkam, 603 102 India). *J. Alloys Compd.* **2001**, 316(1–2), 159–168 (Eng), Elsevier Science S.A. The std. enthalpies of formation of Ce_3Ga_2, CeGa, $CeGa_2$ and $CeGa_6$ at 298.15 K were detd. by high temp. liq. gallium soln. calorimetry to be −(71.1 ± 2.7), −(84.1 ± 1.9), −(51.5 ± 1.4) and −(48.2 ± 3.7) kJ/gatom, resp. The enthalpies of formation of $Ce_{0.21}Ga_{0.79}$ at 1125 K and $CeGa_6$ at 876 K were detd. by using pptn. calorimetry to be −(36.7 ± 2.9) and −(52.8 ± 3.0) kJ/gatom. The partial enthalpies of soln. of cerium in liq. gallium at infinite diln. at 874 K and 1094 K were detd. to be −(186.4 ± 5.4) and −(213.0 ± 3.7) kJ/gatom, resp.

$\Delta H_{f,298}$

C.A. 2001, 135, N7.

$LeGa_2$

2001

135: 127808f **Standard enthalpies of formation of some lanthanide gallides by high temperature direct synthesis calorimetry.** Meschel, S. V.; Kleppa, O. J. (James Franck Institute, 5640 S. Ellis Avenue, The University of Chicago, Chicago, IL 60637 USA). *J. Alloys Compd.* 2001, 319(1–2), 204–209 (Eng), Elsevier Science S.A. The std. enthalpies of formation of some lanthanide metal gallides have been measured by high temp. direct synthesis calorimetry at 1373 ± 2 K. The following results (in kJ/mol of atoms) are reported; $CeGa_2$(−71.1±2.6); $PrGa_2$(−69.3±2.7); $NdGa_2$(−72.1±1.8); $SmGa_2$(−73.7±2.3); $GdGa_2$(−72.8±2.8); $TbGa_2$(−72.3±2.4); $DyGa_3$(−52.5±2.0); $HoGa_3$(−56.8±2.1); $ErGa_3$(−51.6±1.8); $TmGa_3$(−53.9±2.5); $LuGa_3$(−52.2±2.3). The results are compared with some earlier values derived from EMF measurements. They are also compared with the predicted values of Miedema, A.R. et al. [Calphad 7 (1983) 51]. We will also compare our measured enthalpies of formation with the predictions by Gschneidner, K.A. [J. Less Common Metals 17 (1969) 1; Metals Mater. Processes 1 (1990) 241] for lanthanide alloys.

$\Delta_f H$, высокотем. калориметр.

A C

C.A. 2001, 135, N9

CeIn3 2002

F: CeIn3 (ΔH_f)
P: 1

04.07-19Б3.22. Стандартные энтальпии образования некоторых лантаноидных соединений индия определенные высокотемпературной калориметрией прямого синтеза. Standard enthalpies of formation of some lanthanide indium compo by high temperature direct synthesis calorimetry / Meschel S. V., Kleppa // J. Alloys and Compounds. - 2002. - 337, N 1-2. - С. 115-119. - Англ.
Стандартные энтальпии образования некоторых лантаноидных соединений индия измерены высокотемпературной калориметрией прямого синтеза при 1373'+-'2 Получены следующие результаты (кДж/моль атомов): CeIn[3] (-49,1'+-'2,0); PrIn[3] (-51,3'+-'2,4); NdIn[3] (-51,5'+-

'1,8); SmIn[3] (-52,0'+-'3,1); GdIn[3] (-48,5'+-'2,2); IbIn[3] (-53,5'+-'2,5); DyIn[3] (-48,1'+-'2,0); Ho[5]In[3] (-50,2'+-'2,0); Er[5]In[3] (-47,7'+-'2,5); TmIn[3] (-47,5'+-'3 Lu[5]In[3] (-52,3'+-'1,9). Результаты сравнены с некоторыми предыдущими калориметрическими величинами и EMF-измерениями.