Gll - S, Se, Te, Po

8 ... 3219 1969

NdS(Do); EuS(Do); GdS(Do);
HoS(Do); LuS(Do) VIII 2041
Sm S, TbS, DyS, ErS, TmS (D°)
Smoes S., Coppens P., Bergman C.,
Drowart J.
Trans. Faraday Soc, 1969, 65, №3, 682-687 (англ.)

Mass spectrometric determination of the dissociation energies of the gaseous rare earth monosulfides

РЖ Хим, 1969, 10Б89 ИСМ 5 ⑥

OM. 3131 ? 1970

La Se, Gd Se, Nd Se, Ho Se, Ce Te,
Eu Se, Lu Se, La Te, Gd Te, Nd Te, Ho Te,
Eu Te, Lu Te, Ce Se, Tb Se, Tm Se, Pr Se, Dy Se,
Sm Se, Er Se, Sm Te, Er Te, Ce Te, Tb Te, Tm Te,
Pr Te, Dy Te (Do) 89 – VIII 3719

Bergman C., Coppens P., Drowart J., Smoes S.

Trans. Faraday Soc., 1970, 66, N4, 800-808 (анг)

Mass spectrometric determination energies of the gaseous rare earth monoselenides and monotellurides

РЖХим., 1970
206726

ЗГ Ю (Ф)

Zn S

Zn Se

спектр

Tsu R., Esaki L. 1970

Phys. Rev. Letters, 24(9), 455.

(Сл. ZnO) III

HS; BeS; MgS; CaS; SrS; BaS; BS; AlS; | Do, | 197
CS; SiS; GeS; SnS; PbS; NS; PS; AsS; SbS; | М.П. |
BiS; OS; S_2; SeS; TeS; FS; ScS; TiS; CuS;
LaS; VS; CrS; MnS; FeS; CoS; NiS; ZnS; GaS;
LaS; CeS; PrS; NdS; EuS; GdS; HoS; LuS; AuS; VIII
NS; HS⁻; NS⁻; PS⁻; AsS⁻ (Обзор)

VIII 5915 Barrow R.F. Cousins C.
Adv. High Temp. Chem. Vol. 4, New-York
-London, 1971, 161-170 (англ.)
Spectroscopic properties of the gaseous diatomic sulfides. есть ФК

РЖ Хим, 1974, 4Б117 Ю (Ф) 4 шт

E и S

Вф. 5511- VIII

1973

Гордиенко С. П.

До

Редколлегия ж. физ. химии АН СССР М,
№ 6985-73 Деп. от 9 X-73

40530.8188 Ex-Ch/XHB-z, TC,Ch,Me1,Ph	40891 EuSe (Bp)	1974 У-4944

Hariharan A.V., Eick Harry A. Sublimation thermodynamics of EuSe. "J. Chem. Thermodyn.", 1974, 6, N 4, 373-378 (англ.)

оттиск 2795 1974

Eu Se

О химической связи в молекулах редкоземельных металлов цериевой подгруппы.

Янсенко А.А.

Физ. терм. диссоц.

В. сб. „Халькогениды" Вып. 3. Киев. „Наук. думка" 1974, 92-98

41017.8445
Ch,TC

29932

EuTe
ΔH°_{298}; Dеff

02

1974

*Ч-6967

Nagai Shu-Ichiro, Shimei Masahiro, Yokokawa Toshio. Heats of atomization, dissociation energies and heats of sublimation of several rare earth monochalcogenides. "J. Inorg. and Nucl.Chem.",1974, 36,N 8,1904–1905 (англ.)

0215 пик

181 183

ВИНИТИ

41017.8445

Ch, TC

EuSe 29932

ΔH°_f; D.// 02

1974

*4-6967

Nagai Shu-Ichiro, Shimei Masahiro, Yokokawa Toshio. Heats of atomization, dissociation energies and heats of sublimation of several rare earth monochalcogenides. "J. Inorg. and Nucl.Chem.", 1974, 36, N 8, 1904–1905 (англ.) 0215 пик

181 183

ВИНИТИ

#75-6967 1974

EuS
EuSe
EuTe
(ΔHs, ΔHatom)
298

22438u Heats of atomization, dissociation energies, and heats of sublimation of several rare earth monochalcogenides.

Nagai, Shuichiro; Shinmei, Masahiro; Yokokawa, Toshio (Dep. Chem., Hokkaido Univ., Sapporo, Japan). *J. Inorg. Nucl. Chem.* 1974, 36(8), 1904–5 (Eng). Thermochem. properties of EuS, EuSe, EuTe, SmSe, SmTe, LaSe, PrSe, and NdSe were studied at high temp. by Knudsen effusion measurements with a time-of-flight mass spectrometer and a thermomicrobalance. Heats of sublimation and heats of dissocn. of the solid and gaseous compds. were detd. The latter 2 values change regularly with at. no., but the heats of sublimation are insensitive to the no. of *f* electrons in the rare earth metals.

(74) ☒

C.A. 1975. 82 N4

Se-Eu CIT 4824 1975

(Qc)

Kerr J. A., et al.

Handbook Chem. Phys.,
55th Ed., 1974-75.

Te-Eu of 4824 1975

Kerr J. A., et al

(Do) Handbook Chem. Phys.,
95th Ed., 1984-85,

$Eu(SO_3F)_3$ 40534 *

1976
4-14119

(англ.)

Johnson Wesley M., Macklin John W.

Vibration spectr and structures of lanthanide fluorosulfate compounds.

"Inorg.Chem.", 1976, 15, N 5, 1216-1220

Safran S.A., Lax B., Drossolhaus G.

Phenomenological theory of Raman scattering in europium chalcogenides.

"Solid State Commuins", 1976, 19, N 12, 1217-1220 (англ.)

EuSx *Ч-18233 1977

EuOx

EuOS

86: 146739v **Thermodynamic study of the vaporization of europium monosulfide by Knudsen-cell mass spectrometry. Atomization energies of europium monosulfide(g), dieuropium sulfide(g), europium disulfide(g), dieuropium oxide(g), dieuropium dioxide(g), dieuropium oxide sulfide(g), and dieuropium disulfide(g).** Smoes, S.; Drowart, J.; Welter, J. M. (Lab. Fys. Chem., Vrije Univ. Brussel, Brussels, Belg.). *J. Chem. Thermodyn.* **1977**, 9(3), 275-92 (Eng). The vaporization of EuS(s) is studied at 1550 to 2500 K. Mass-spectrometric anal. of the vapor leads to the characterization of the gaseous mols. EuS, EuS_2, Eu_2S, Eu_2S_2, EuOS, Eu_2O, Eu_2O_2, and probably Eu_2S_3 and Eu_2S_4. The main vaporization process is EuS(s) = Eu(g) + αS(g) + $\{(1 - \alpha)/2\}S_2(g)$, which leads to congruent effusion. The congruently effusing compn. varies slightly with temp., the mol ratio $n(Eu)/n(EuS)$ being displaced from 1830 to

D^0 атомиз.

ΔH_f

в III картотеку.

C.A. 1977, 86 N20

2260 K by (7.6 U 0.9) × 10 ^{4} towards the S rich side. EuS(s) exists within a homogeneity range which extends between $EuS_{1.027}$ at 1420 K and at least $EuS_{0.99}$ at 1935 K, when the congruently effusing compn. at 2000 K is set at exact stoichiometry. Partial pressures detd. by the mass-spectrometric Knudsen-effusion method are compared with the literature data. Exptl. ionization cross-section ratios are detd. for Eu(g)/S(g) and S_2(g). The atomization energies in kcal/mole are $D°_{at}$(EuS, s, 0) = (217.4 ± 2.6), $D°$(EuS, g, 0) = (85.7 ± 3.1), $D°_{at}$(EuS_2, g, 0) = (171.7 ± 5.0), $D°_{at}$(Eu_2S, g, 0) = (167.3 ± 5.0), $D°_{at}$(Eu_2S_2, g, 0) = (283.2 ± 5.0), $D°_{at}$(EuOS, g, 0) = (315.1 ± 5.0), $D°_{at}$(Eu_2O, g, 0) = (205.1 ± 5.0), $D°_{at}$(Eu_2O_2, g, 0) = (345.1 ± 5.0), $D°_{at}$(Eu_2S_3, g, 0) ≤ (354.3 ± 10.0), and $D°_{at}$(Eu_2S_4, g 0) ≤ (452.7 ± 10.0). The corresponding std. enthalpies of formation are also listed.

C.A. 1977, 86 N20

Eu Se

Gingerich K. A., 1980

Current Topics in Materials Science, Volume 6, edited by Kaldes E.

Do, North-Holland Publishing Company, 1980.

(есть оттиск в коробке оттисков Gingerich).

Eu Te

Gingerich K. A., 1980

Current Topics in Materials Science, Volume 6, edited by Kaldes E.

Do;

North-Holland Publishing Company, 1980.

(есть оттиск ● в коробке оттисков Gingerich).

Eu_2O_2Se

1980

94: 73997f Thermal stability and infrared absorption spectrum of europium oxyselenide (Eu_2O_2Se). Leskela, Markku (Dep. Chem., Helsinki Univ. Technol., SF-02150 Espoo, 15 Finland). *Finn. Chem. Lett.* 1980, (6), 173-6 (Eng). Eu_2O_2Se was obtained by partial oxidn. of EuSe powder. The x-ray powder diffraction pattern, IR spectrum and thermal decompn. for Eu_2O_2Se are presented. The oxyselenide oxidizes to oxyselenite at 500–600° when heated in air and the oxyselenite phase decomps. to oxide at 700–1150°. The IR spectrum of Eu_2O_2Se shows strong absorption max. at 475 and 380 cm^{-1}.

UIK.

Chem p

C.A. 1981. 94 N10

Eu_2O_2S 1981

Hauck J.

Z. Naturforsch., 1981,

ΔG A36, N 12, 1309–1314.

(см. EuS ; I).

EuS

оттиск 12136

1981

$(EuS_6)^{10-}$

Zhukov V. P., et al.

расчет эл. структ., хим. связь кластеров

J. Phys. Chem. Solids, 1981, 42, 641–647.

$(EuS_6)^{10-}$ [Ommuck 1235] 1981

$(EuSe_6)^{10-}$ Zhukov V. P., et al.

кв. сист. J. Phys. Chem. Solids

расчёт. 1981, 42 (8), 631-639.

(сеч. $(EuO_6)^{10-}$; III)

EwS [Оп. 19228] 1984

(We, оценка) Goodfriend P. L., Spectrochim. acta, 1984, A40, N3, 283–285.

EuS 1985

Singh O. P., Gupta V. P.

Phys. Status Solidi B 1985, 129(2), K 153 - K 156.

теор. расчёт эл. структ. соединений.

(см. EuO; III)

EuSe 1985

Singh O. P., Gupta V. P.

теор. расчёт эл. структ. поверхности

Phys. Status Solidi B 1985, 129(2), K153 – K156.

(сер. EuO; III)

EuTe

1985

Singh O. P., Gupta V. P.

теор. расчёт эл. структ. кристалла.

Phys. States Solidi B 1985, 129(2), K153 – K156.

(см. EuO; III)

EuS
Eu_3S_4

1987

1 Е283. Термодинамические свойства EuS и Eu_3S_4 в широкой области температур. Крикля А. И., Болгар А. С., Дроздова С. В. «Ж. физ. химии», 1987, **61**, № 8, 2223—2225

Исследована энтальпия EuS в области т-р 400—2100 К и Eu_3S_4 в интервале 400—1500 К. Получены температурные зависимости энтальпии, на основании которых рассчитаны и табулированы основные термодинамич. ф-ции (теплоемкость, энтропия, приведенная энергия Гиббса) исследованных в-в. Выше 1700 К для моносульфида европия обнаружен интенсивный рост энтальпии. Резюме

H-Ho, Cp;

(H) ☒

Ф. 1988, 18, N 1

Халькогениды Eu 1997

EuS, EuSe, EuTe (Re, Wc)

теор. расч. сравнение с экспер.

EuO (H)

CA. 1998, 128, N3

128: 27095h **Study on europium chalcogenides by means of density functional theory.** Dai, Dadi; Li, Lemin (State Key Laboratory of Rare Earth Materials Chemistry and Applications, Department of Chemistry, Peking University, Beijing, Peop. Rep. China). *THEOCHEM* 1997, 417(1–2), 9–17 (Eng), Elsevier. The bond lengths and vibrational frequencies obtained for europium chalcogenide mols. are in fairly good agreement with expt. The local d. approxn. overestimates the bond energies by 2 eV. The results can be improved by taking gradient corrections into account, but the values are still higher; there is no marked difference in accuracy among the different approx. d. functional formulas, although PW86x seems a little better than the others. It has been found that the X_α method can also yield reliable bond energies. Relativistic effects make the bond lengths a little shorter and affect the frequencies only slightly, but lower the bond energies considerably. Mulliken anal. shows that Eu 5d orbitals play an important role in bonding. The population on the Eu 5d orbitals decreases in the order EuO, EuS, EuSe, EuTe, following the same trend as the bond energies. The calcd. charges and dipole moments show that the bond in europium chalcogenides has large covalent character. Relativistic effects destabilize the bonds, which are correlated with the electron transfer from 6s to 5d in the Eu atom in the process of bond formation.

EuS

1997

Liu Wen Jian, Hong Gong Li, et al.

сим. Theor. Chem. Acc. 1997, 96(2), 75-83.

посещ.

(сим. EuO; III)

EuS_2
Eu_2S

1998

129: 86297u **Study on EuS_2 and Eu_2S molecules with apparently abnormal valence by density functional theory.** Lu, Haigang; Li, Lemin (College of Chemistry and Mol. Eng., State Key Lab. of Rare Earth Materials Chemistry and Applications, Peking Univ., Beijing, Peop. Rep. China 100871). *Wuli Huaxue Xuebao* 1998, 14(5), 413–418 (Ch), Beijing Daxue Chubanshe. D. functional theory is used to study the mol. structure, electronic structure and chem. bonding of EuS_2 and Eu_2S. EuS_2 has both bent and linear configurations, whereas Eu_2S has only the bent one. There is a chem. bond between S–S, as well as between Eu–Eu atoms. In these mols., Eu and S are in the normal valence state with their valence shell satisfying the octet rule. The calcd. ionization potentials and atomization energies are in fairly good agreement with the exptl. values. The relativistic effects only slightly influence the geometry and vibrational frequency of the mols., while significantly influencing the MO levels and the bonding energy, but the spin–orbit interaction does not result in an important effect.

структура и энергия мол-ул

C.A. 1998, 129, N7