

Si-галогениды

SiCl₃I₃
SiBr₄I₃
SiClBr₃
SiCl₃Br
SiCl₂Br₂

Tm

Tb

Bp-7322-IV

1891

Besson A.

Compt rend. 1891, 112,
788-91

B90-5858-IV

1950

SiF₃YSiFBr₂SiF₂Y₂SiF₂Br₂SiF₃Y₃SiF₃Br

Anderson H.H.

Tb

J. Am. Chem. Soc. 1950,
72, 2091-93

Tm

1854

Sil 10 102

Schmeisser M.

Sil 10 216

Silicium, Schwefel, Phosphor, Arsen,

Sil 10 216

Colleg. Sek. Arzng. Chem. Intern.

Sil 10 222

Union Zeits. u. Arzng. Chem. Münster,
1854, 28-31 (Vergleichung 1855)

Chem. u. Arzng.

Chem. u. Arzng. u. Arzng.

Arzng.

Arzng.

Arzng.

Chem. u. Arzng. u. Arzng.

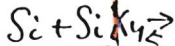
Chem. u. Arzng. u. Arzng.

C. A., 1852, 14475 48h

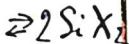
кратчайшая, $(SiF_n)_x$ - наиболее распространенная, энергетически при образовании NaOH выгодная.

$Si_{10}Cl_{22}$ взаимодействует с ZnF_2 и дает $Si_{10}F_{22}$ -
белый мелкокристаллический порошок, а $Si_{10}Br_{16}$ дает
 ~~Si_4Br_4 Si_4Br_4 $Si_{10}Br_{16}$ $Si_{10}Br_{16}$ $Si_{10}Br_{16}$~~ $Si_{10}F_{16}$. . .

1956



Kempfer Ch. P.



Diss. Abh., 1956, 16, № 7, 1209

Реакция кремния с тетраэдрическими
соединениями кремния

Реакция,

как источник

получения

чистого Si.

См. также

ДМЗ, или Кр. № 5.

Шефер, Моркер.

1957

SiCl₂

Schäfer, Morcher.

SiBr₂

Z. anorgan. und allgem. Chem.

SiY₂

1957, 290, No 5-6, 279-291, 221,

Перенос бензилла в хлоридных

образовании

реакциях III. О переносе кремния

перенос

при перегонке температур

кремния

при помощи диалогенизов крем-

нитридов

ния и о

зависимости направ-

X-

58-6-16982

294

ления пересое сн̄ давлениѣ.

Гранов.

1958.

Si Pranić Petar

заповедник Техника, 1958 13, N 10;

Rud. i metalurg., 9, N 10,
220-221.

Получение лабораторных
копий в заповеднике
Кремль

X-59-19-64485. ●

Si-Hal(mer) Schenk P.W.,
Bloching H.

Z. anorgan. und allgem.

T₆

Chem., 1965, 334, n 1-2, 54.



Si Hal

1967

11 B19. Неорганические галогениды кремния. H e n g -
g e E. Inorganic silicon halides. «Halogen Chem. Vol. 2».
London—New York, Acad. Press, 1967, 169—232 (англ.)
Обзор. Библ. 381

X. 1968 . 11

1984

Si -

субгалогени-

ды

(обзор)

19 В38. Получения и химические свойства субгалогенидов кремния. Schmeißer M., Voss P. Darstellung und chemisches Verhalten von Siliciumsubhalogeniden. «Fortschr. chem. Forsch.», 1967, 9, № 1, 165—205 (нем.)

Обзор. Библ. 153

Х. 1988. 19

Si-Hal

1970

(124226e) Thermodynamic functions of halosilanes. Boiko, V. V.; Karetnikova, N. N.; Maslov, P. G.; Veretenova, G. I.; Georgieva, I. I. (Leningrad. Pedagog. Inst. im. Gertsena, Leningrad, USSR). *Termodin. Termokhim. Konstanty* 1970, 224-9 (Russ). Edited by Astakhov, K. V. Izd. "Nauka": Moscow, USSR. Internally consistent equations for heat capacity C_p , enthalpy H , entropy S , and Gibbs free energy G as functions of temp. T and pressure were proposed for halosilanes. The equations are quadratic forms in T and $\ln T$ and they are valid at 250-2000°K where the gases may be considered to be ideal. Coeffs. in the equations were evaluated on the basis of statistical mech. calens. The accuracy is 0.2-1.5% for S and G and 0.2-3.0% for H and C_p . Karel A. Hlavaty

C.A. 1970.73.24

Si - Hal

1970

137173q Thermodynamic functions of SiX_2YZ -type halosilanes. Maslov, P. G.; Usvyattseva, T. R.; Boiko, V. G.; Karetnikova, N. I.; Engalychev, Yu. S. (Leningrad. Gos. Pedagog. Inst. im. Gertsena, Leningrad, USSR). *Zh. Fiz. Khim.* 1970, 44(3), 825 (Russ). Formulas are derived for the calculn. of thermodynamic properties of 12 gaseous halosilanes SiX_2YZ ($\text{X}, \text{Y}, \text{Z} = \text{F}, \text{Cl}, \text{Br}, \text{I}$) as function of temp. and pressure. They were obtained by the method reported earlier (CA 64: 16715f). Formulas are valid for C_p° and enthalpy ($H_T^\circ - H_0^\circ$) at 250-1000°K (accuracy 0.2-3%); as well as for entropy at 250-1500-2000°K (accuracy 0.2-1.5%). Values of coeffs. in these formulas, are given.
T. Ya. Cheroc

C_p

$H_T^\circ - H_0^\circ$

ΔS

C.A.-1970. 72. 26

SiF₄

SiCl₄

SiBr₄

ΔH_f

1973

Yushin A.S., et al.

Zh. Fiz. Khim. , 1973,
47(7), 1828-31.

• (ex. BF₃ ; I)

SIX 4

1982

X-ranoug Dittmer G., Niemann U.
(F, G, H, I)

u okurranag Philips J. Res., 1982,
ΔfM 37, N 1-2, 1-30.

● (cer. BX₃ ; I)

$\text{SiH}_4\text{-}n\text{X}_n$

Сенатор
(записки академика) 1982

$\text{SiH}_4\text{-}n\text{X}_n\text{Y}_m$

$\text{X, Y} = \text{Cl, CH}_3,$

C_2H_5

97: 116245r Additive schemes for the calculating enthalpies of formation of substituted silanes in an atom-by-atom approximation. Kanovich, M. M.; Papulov, Yu. G.; Smolyakov, V. M.; Poterin, V. N.; Klyuchnikov, V. A. (Kalinin. Gos. Univ., Kalinin, USSR). Zh. Fiz. Khim. 1982, 56(7), 1766-9 (Russ). An optimum additive scheme is presented for calcg. the heats of formation of substituted silanes $\text{SiH}_{4-e}\text{X}_e$ and $\text{SiH}_{4-e}\text{X}_e\text{Y}_m$, where X and Y each are Cl or Me(Et); e and m each are 0, 1, 2, 3, or 4; and $e \leq m$. Calcd. and exptl. values were compared for 35 compds. This procedures may be used for predicting the heats of formation of as-yet unstudied silanes.

$e \leq m = 0 \div 4$

(агрегирован. примеры)

Q: A. 1982, 97, N 14

$Si_2Cl_6 - Si_2Br_6$

1983

10 Б3080. Равновесные реакции дисиланов. Äquilibriumsgleichungen an disilanen. Schmörlzer H., Hengge E. «Österr. Chem.—Z.», 1983, 84, № 9, 228 (нем.)

С помощью ЯМР, ИК- и КР-спектроскопии изучены равновесные р-ции в системах $Si_2Cl_6 - Si_2Br_6$ (1) и $Me_2Si_2Cl_4 - Me_2Si_2H_4$ (2). В системе (1) образуются дисиланы типа $Si_2Cl_xBr_{6-x}$, причем равновесие в системе достигается за 60—70 ч при 100°С. Однако разделить продукты р-ций невозможно из-за лабильности системы, обусловленной р-циями диспропорционирования. В системе (2) происходит обмен между атомами хлора и водорода при 200°С в присутствии катализатора $AlCl_3$. Равновесие достигается в течение часа при 90°С. Возможно дистилляц. разделение продуктов р-ции состава $Me_2Si_2Cl_xH_{4-x}$ после отделения от катализатора.

Л. Г. Титов

Кр;

Х. 1984, 19, N10

Смешанные
газогенные Si. 1983
Sladkow I. B.

V_{H} -мол. объём
при T_6 ; Zh. Fiz. Khim.
1983, 57 (10),
2619-22.

(см. Смешанные газогенные Si; I)

Si - X_n

1983

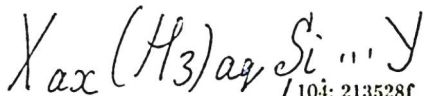
X-заполн

(ΔfH)

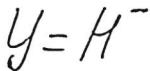
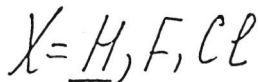
99: 219783k Thermochemistry of silicon-containing compounds. Part 1. Silicon-halogen compounds, an evaluation. Walsh, Robin (Dep. Chem., Univ. Reading, Reading, UK RG6 2AD). *J. Chem. Soc., Faraday Trans. 1* 1983, 79(9), 2233-48 (Eng). Literature data on the heats of formation of Si-halogen compds. were collected and reviewed. The coverage includes all tetravalent monosilicon compds. contg. Si-H-X, where X is a single halogen, as well as the subhalides SiX_n, where n = 1, 2, or 3. The data are critically evaluated from the standpoints of bond additivity and general chem. reactivity of the species involved as well as by detailed consideration of individual studies. A set of recommended values (with uncertainties) is proposed. For the divalent species, SiX₂, a self-consistent set of lone-pair stabilization energies was obtained.

C. A. 1983, 99, N 26

all. opm.

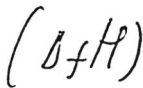


1986

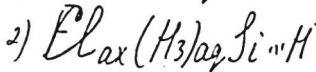
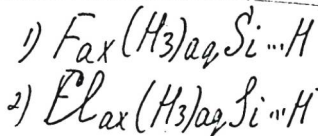


104: 213528f Quantum-chemical analysis of silicon atom pentacoordination. Frolov, Yu. L.; Shevchenko, S. G.; Voronkov, M. G. (Irk. Inst. Org. Khim., Irkutsk, USSR). *Teor. Eksp. Khim.* 1986, 22(1), 70-5 (Russ). The energy characteristics and charge redistribution in model systems $X_{ax}(H_3)_{eq}Si \cdots Y$ as a function of the Si $\leftarrow$ Y coordination bond and rehybridization of valence shell AOs of Si were calcd. within the MNDO approxn. with total or partial geometry optimization. Formation of complex anions $X = H, F, Cl$, $Y = H^-$ and of complex $X = F$, $Y = O-CH-OH$ was examd. During formation of intramol. coordination bond Si $\leftarrow$ Y, there is an electron

transfer to the axial and equatorial atoms surrounding Si. The calcd. heat of complexation [kJ/mol] are: -253.9 ($X = H$, $Y = H^-$); -273.2 ($X = F$, $Y = H^-$); -298.7 ($X = Cl$, $Y = H^-$) and 72.4 for $X = F$, $Y = O-CH-OH$.



C. A. 1986, 104, N24



$F_{ax}(H_3)_{aq} Si \dots H^-$

1986

Frolov Yu. L., Sherchen-
ko S. G., et al.

(Δ f H) Teor. Eksp. Khim. 1986,
22(1), 70-5.

(see $X_{ax}(H_3)_{aq} Si \dots Y; \underline{I}$)

SiH_3X

X-замена.

1989

110: 102782p New electronegativity scale for the correlation of heats of formation. 5. Simple silicon-containing compounds. Luo, Yu Ran; Benson, Sidney W. (Donald P. and Katherine B. Loker Hydrocarbon Res. Inst., Univ. South. California, Los Angeles, CA 90089-1661 USA). *J. Phys. Chem.* 1989, 93(4), 1674-5 (Eng). A linear equation for the calcn. of the heats of formation of simple Si-contg. compds. (SiH_3X) was derived in terms of heat of formation of a related CH_3X compd., the no. of H atoms in the HX mol., and the unshielded core potential of the X atoms attached to H. The equation thus relate the thermodyn. properties of Si compds. to those for C compds.

($\Delta_f H$)

c.A. 1989, 110, N/2

SiH_mX_n (2)

1993

X-2anovet.

($\Delta_f H$)

121:118899f Relationship between thermodynamic properties and structure of covalent compounds -- gas phase standard enthalpies of formation of SiH_mX_n. Li, Liangchao; Luo, Mingdao; Qu, Songsheng; Yan, Xiaoci; Zhang, Guoding (Jingzhou Educ. Coll., Jingzhou, Peop. Rep. China 434108). *Xibei Daxue Xuebao, Ziran Kexueban* 1993, 23(5), 437-41, 449 (Ch). An exptl. formula of estg. the gas phase std. enthalpies $\Delta_f H_m$ (SiH_mX_{n,g}) of SiH_mX_n is presented. It shows that $\Delta_f H_m$ (SiH_mX_{n,g}) is related to bond enthalpy and bond nos. (m,n) of Si-H and Si-X bond. Moreover, when (m+n) < 4, conjugate and coordinate effect has an great influence on $\Delta_f H_m$ (SiH_mX_{n,g}) in central atom and adjacent atoms.

C.A. 1994, 121, n 10

172. 2a novalapib

1998

(3)

129: 33002n Standard entropy of liquid halosilanes and halogermanes. Sladkov, I. V. (St. Petersburg. Gos. Tekh. Univ., St. Petersburg, Russia). *Zh. Prikl. Khim.* (S.-Peterburg) 1998, 71(1), 41-45 (Russ), Nauka. A method is proposed for calcg. the entropy of liq. mol. inorg. compds. in std. conditions. The initial data are the substance's entropy in gas phase and a parameter which characterizes the thermodyn. similarity of mol. inorg. compds. The method was used to calc. the std. entropies of 17 liq. halosilanes and 15 liq. halogermanes.

(4)

15

2a novalapib

C.A. 1998, 129, 23

SiF_4 K_2

2001

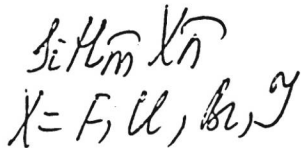
Lyman, J. L. et al.,

J. Phys. Chem. Ref. Data,
2001, 30 (1), 165-186

(m.x)

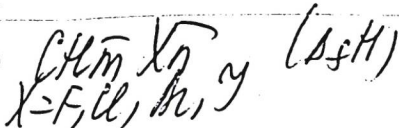
(cell. Si_2F_6 ,  2, k (I))

2001



135: 186194a Study on standard formation enthalpies of SiH_mX_n and CH_mX_n molecules with charge/radius of atoms. Xie, Bing; Feng, Lin; Yang, Feng; Luo, Mingdao; Qu, Songsheng (Department of Chemistry, Guizhou Institute for Nationalities, Guiyang, Peop. Rep. China 550025). *Diqiu Kexue* 2001, 26(3), 328-330 (Ch), *Zhongguo Dizhi Daxue Xuebao Bianjibu*. The at. and mol. structure parameters P_1 and P are defined as: $P_1 = (m_i/4r_i)(1 + n_i^*/n_i)(1 + (Z_i' + 2)/Z)$ and $P = \sum_i P_i$. The correlation relationships between P and the std. formation enthalpies of SiH_mX_n and CH_mX_n ($X = \text{F, Cl, Br, I}$) show correlation coeffs. of 0.9765 and 0.9752, resp.

⑦



C.A. 2001, 135, 173