

Fe-Cl-H-O

1892
VI-1299

$\text{FeCl}_3 \cdot n\text{H}_2\text{O}$, $\text{FeCl}_3 \cdot \text{HCl} \cdot n\text{H}_2\text{O}$ (Tm)

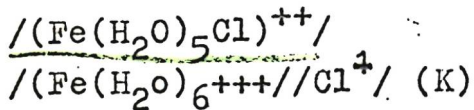
Roozeboom

10. Z.physik. Chem. 10, 477 (1892)

Circ. 500 W,

F

VI-1307 1937



Møller M.,

J. Phys. Chem. 1937, 41, 1123-8.

"Complex formation of ferric ions with chloride ions".

Est/F: G. H.

GAö, 1938, 412⁹

Ja

F

VI-1150

1956

TiO_2FeO , FeO , TiO_2 ,

$\text{FeCl}_2(\text{HCl}; \text{aq})$, T , $\text{Cl}_4 \cdot (\text{HCl}, \text{ap})$

$\text{FeCl}_2 \cdot (\text{HCl}, \text{aq})$, (Kp) , (F) .

Wilsa ~~Se~~ Seppo.

Suomen kem., 1956, 29, N11, B195 - B199.

RX., 1958, N17, 56649

W, M,

F.

1958

VI-1175

Fe₂O₃ (Ttr, Δ Haq b HCl)

Fe₂O₃ керн., Cl₂, FeCl₃O₂ (Kp, Δ H)

Fe₂O₃ крае, Cl₂, FeCl₃O₂ (Kp)

Kangro W., Wittke-Peschel I.

Wiebke, Krackow.

Z.anorgam. und allgem.Chem., 1958, 295,
N1-2, 117-130.

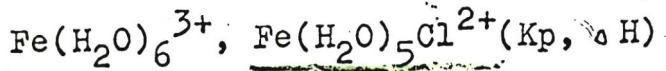
Über Eisen (III)-oxyd.

RX., 1958, N24, 80949 M, W,

F

1939

VI-1234

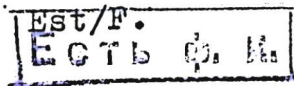


Connick R.E., Coppel C.P.

J. Amer. Chem. Soc., 1959, 81, N24, 6389-94.

Kinetics of the formation of the ferric chloride complex.

RX., 1960, 72799 Ja



1960

VI-1280

Kp(FeCl_2^+ , FeCl_3 , FeCl_4^- , HFeCl_4)

Marcus Y.

J. Inorg. and Nucl. Chem., 1960, 12, N3-4,
287-96.

The anion exchange of metal complexes IV.
The iron (III)-chloride system.

Est/F.
ECTB 4. 4.

RX., 1960, 91825 Ja

g³ 3-
Fe
Fe(OH)₃Cl₃

gabrobecu

1985

119383e Chemical equilibrium of ferric ion in sodium chloride medium. Tsaihua J. Chow (Univ. of California, Berkeley). *Trav. Centre Tech. Etud. Oceanogr.* (Paris) 6(1-2-3-4), 53-5 (1965)(Eng). The chem. equil. of ferric ion in 500 millimolar NaCl medium was studied at 25° by detg. the Fe³⁺ and H⁺ concns. Emf. measurements were made by using a glass electrode and Fe³⁺-Fe²⁺ and Ag-AgCl electrode half cells. The H⁺ and Fe³⁺ concns. were detd. periodically by emf. measurements, and the steady state was attained after 45 days. The test soln. contg. a high Fe³⁺ concn. attained the steady state faster than those of low concn. No stable reading was obtained for solns. of <1 millimolar Fe³⁺. The main hydrolysis product was a ppt. with the empirical formula Fe(OH)_{2.7}Cl_{0.3}. The chem. compn. of the ppt. was detd. by plotting -log [H⁺] vs. -log [Fe³⁺]. The equil. const. of the reaction Fe³⁺ + 2.7H₂O + 0.3 Cl⁻ ⇌ Fe(OH)_{2.7}Cl_{0.3}(s) + 2.7 H⁺ was calcd. as log K = -3.05 ± 0.10, and log K_s = -34.0 ± 0.2. D. Sri Rama Rao

C. A 1984. 66. 26

HFeCl₄

1976

Kguc.

25907a Effect of temperature on the extraction of iron(III) by methyl butyl ketone from hydrochloric acid solutions. Iofa, B. Z.; Kropotov, V. A. (Mosk. Gos. Univ. im. Lomonosova, Moscow, USSR). *Izv. Vyssh. Uchebn. Zaved., Khim. Khim. Tekhnol.* 1976; 19(3), 359-62 (Russ). The distribution coeff. of Fe(III) between BuCOMe and 1.5M HCl increased with temp. at 5-60° and decreased with concn. at $1.1 \times 10^{-3}M$ - $10^{-4}M$. The disocn. const. of the extd. complex HFeCl₄ is 1.5×10^{-3} at 5° and 13×10^{-3} at 60°. C. E. Stevenson

C.A. 1976. 85 N4

1979

$Fe(H_2O)Cl^{2+}_{aq}$

exp

(Kp)

91: 63512t Thermodynamics and kinetics of aqueous iron(III) chloride complexes formation. Strahm, Ulrich; Patel, Ramesh C.; Matijevic, Egon (Inst. Colloid Surf. Sci., Clarkson Coll. Technol., Potsdam, NY 13676 USA). *J. Phys. Chem.* 1979, 83(13), 1689-95 (Eng). The formation of ferric chloride complexes in aq. solns. was studied by spectrophotometric and temp. jump techniques by utilizing both the relaxation times and the relaxation amplitudes. The results were analyzed by a multiparametric curve fitting procedure. Equil. consts., and thermodyn. parameters were detd. for the following reactions at 25° and at an ionic strength of 2.6 M: (1) $Fe_{aq}^{3+} + Cl_{aq}^{-} \rightleftharpoons Fe(H_2O)Cl_{aq}^{2+}$; (2) $Fe(H_2O)Cl_{aq}^{2+} \rightleftharpoons FeCl_{lin,aq}^{2+}$; (3) $Fe_{aq}^{3+} + Cl_{aq}^{-} \rightleftharpoons FeCl_{aq}^{2+}$; (4) $FeCl_{lin,aq}^{2+} + Cl_{aq}^{-} \rightleftharpoons FeCl_{2,aq}^{+}$; (5) $FeCl_{2,aq}^{+} + Cl_{aq}^{-} \rightleftharpoons FeCl_{3,aq}$. The rate consts. for the formation of the inner-sphere complexes of the ferric mono- and dichloro ions are given. A species distribution diagram based on the thermodyn. data is shown for a const. ferric ion concn. (0.086 M $Fe(ClO_4)_3$) and a wide range of chloride ion concns.



P.A. 1979 Q118



DM 31067

1988

110: 102822b Evaluation of standard heats of formation of iron-group metal hydroxyhalide. Burylev, B. P. (Kubansk. Gos. Univ., Krasnodar, USSR). *Izv. Vyssh. Uchebn. Zaved., Chern. Metall.* 1988, (12), 131 (Russ). A comparison method was used to calc. the std. heats of formation of $\text{Fe}_2(\text{OH})_3\text{Cl}$ and $\text{Ni}_2(\text{OH})_3\text{Cl}$.

(ΔfH)

(H) ☒



C.A. 1989, 110, N 12

$Fe(H_2O)Cl_3(?)$

от 30125

1988

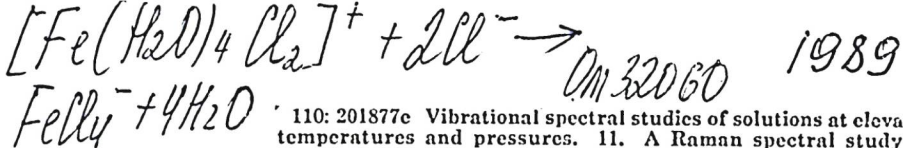
1 В6. Гидрат хлорида трехвалентного железа в паровой фазе. Iron(III) chloride hydrate in the vapor phase / Rustad D. S., Gregory N. W. // Inorg. Chem.— 1988.— 27, № 16.— С. 2840—2844.— Англ.

Спектрофотометрически в интервале длин волн 240—440 нм изучено равновесие в гомогенной системе $FeCl_3-Cl_2-HCl-H_2O$ при т-рах 415—640 К. Отмечено, что доминирующим равновесием в системе <600 К является $0,5 Fe_2Cl_6 (газ.) + H_2O (газ.) \rightleftharpoons Fe(H_2O)Cl_3 (газ.)$. Из равновесных данных определены термодинамич. параметры (ΔH и ΔS) процесса образования газ. $Fe(H_2O)Cl_3$. При 500 К значения ΔH и ΔS составляют -590 кДжмоль $^{-1}$ и 471 Джмоль $^{-1}$ К $^{-1}$ соотв. Энтальпия координац. дативной связи $Fe-O$ составляет при 500 К $93,6$ кДжмоль $^{-1}$. Изменение величины абсорбции пара $Fe(H_2O)Cl_3$ в интервале т-р 415—475 К объяснено присутствием в системе конденс. гидратной фазы состава $Fe_2Cl_6(H_2O)_3$.

Г. П. Чичерина

($K_p, \Delta H, \Delta S$)

X. 1989, N 1



(ΔH)

110: 201877c Vibrational spectral studies of solutions at elevated temperatures and pressures. 11. A Raman spectral study of aqueous iron(III) chloride solutions between 25 and 300°. Murata, Katsuo; Irish, Donald E.; Toogood, Gerald E. (Dep. Chem., Univ. Waterloo, Waterloo, ON Can. N2L 3G1). *Can. J. Chem.* 1989, 67(3), 517-24 (Eng). The Raman spectra of acidified aq. FeCl_3 solns. were measured at 25-300°. When $[\text{Fe}^{3+}] = 0.75\text{--}1.0$ mol/kg and $\text{Cl}^-/\text{Fe}^{3+}$ ratios, R , = 3-9.5, the dominant species at 25° is *trans*- $[\text{Fe}(\text{H}_2\text{O})_4\text{Cl}_2]^+$; at 300° the sole Fe-contg. species is FeCl_4^- . Conversion of $[\text{Fe}(\text{H}_2\text{O})_4\text{Cl}_2]^+$ into FeCl_4^- appears not to involve intermediate Fe species. In the presence of excess Cl^- the reaction $[\text{Fe}(\text{H}_2\text{O})_4\text{Cl}_2]^+ + 2\text{Cl}^- \rightarrow \text{FeCl}_4^- + 4\text{H}_2\text{O}$ is presumed to occur; ΔH for this reaction was estd. as $+65 \pm 8$ kJ/mol. Other factors which favor FeCl_4^- over other Fe species include increasing acidity, increasing R , and decreasing dielec. const.

C.A. 1989, 110, 222