

SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 158 experiments for

(no ligands specified)

4 metals : Rh+, Rh++, Rh+++, Rh++++

(no references specified)

(no experimental details specified)

I- HL Iodide CAS 10034-85-2 (20)

Iodide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+ sp non-aq 22°C 100% U M 1975F0a (8353) 1

K'(Rh(P(Ph)3)2COI+I) < -4.5

Medium: dichloromethane. K': Rh(P(Ph)3)2COI+I=Rh(P(Ph)3)COI2+P(Ph)3

Rh+ sp non-aq 22°C 100% U M 1975F0a (8354) 2

K(RhA2COI+I)=-1.30

Medium: dichloromethane. K: RhA2COI+I=RhACOI2+A, A=Triphenyl arsine

Rh+ sp non-aq 22°C 100% U M 1975F0a (8355) 3

K(RhA2COI+I)=-2.7

Medium: dichloromethane. K: RhA2COI+I=RhACOI2+A, A=Triphenyl stibine (Ph3Sb)

Rh+ sp non-aq ? 100% U I 1972F0a (8356) 4

K=2.4

Medium: DMF. K: Rh(Ph3P)2COCl+L=Rh(Ph3P)2COL+Cl. K(Rh((CO)2Cl2+2L=Rh(CO)2L2+2Cl)=1.9 (in 1,2-dichloromethane); 2.3 (MeCN); 1.5 (90% MeCN/H2O)

OH- HL Hydroxide (57)

Hydroxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+ oth none 25°C 0.0 U 1958MPa (12044) 5

*Kso=3.31?

*Kso: K(1/2Rh2O(s)+H=1/2H2O+Rh); method:combination of thermodynamic data

C4H6O2 L Me methacrylate CAS 96-33-3 (815)

Methyl propenoate; CH2:CH.CO2.CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+ nmr alc/w 20°C 100% U M 1977HRa (29732) 6

K(RhA+L)=0.5

Medium: MeOH. A=Ph2P.CH2.CH2.PPh2

C6H6 L Benzene CAS 71-43-2 (2143)

Benzene, cyclohexatriene;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+	nmr	alc/w	20°C	100%	U	M			1977HRa (43170)	7
								K(RhA+L)=1.3		

Medium: MeOH. A=Ph2P.CH2.CH2.PPh2

C6H14 L CAS 110-54-3 (2146)
n-Hexane; CH3.CH2.CH2.CH2.CH2.CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+	nmr	alc/w	20°C	100%	U	M			1977HRa (50626)	8
								K(RhA+L)=0.3		

Medium: MeOH. A=Ph2P.CH2.CH2.PPh2

C7H8 L CAS 108-88-3 (2144)
Toluene; C6H5.CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+	nmr	alc/w	20°C	100%	U	M			1977HRa (55786)	9
								K(RhA+L)=2.0		

Medium: MeOH. A=Ph2P.CH2.CH2.PPh2

C8H8 L Vinylbenzene CAS 100-42-5 (811)
Styrene; C6H5.CH:CH2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+	nmr	alc/w	20°C	100%	U	M			1977HRa (59255)	10
								K(RhA+L)=1.3		

Medium: MeOH. A=Ph2P.CH2.CH2.PPh2

C8H10 L p-Xylene CAS 106-42-3 (2145)
1,4-Dimethylbenzene, 4-Xylene; CH3.C6H4.CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+	nmr	alc/w	20°C	100%	U	M			1977HRa (60683)	11
								K(RhA+L)=2.7		

Medium: MeOH. A=Ph2P.CH2.CH2.PPh2

C18H15Sb L CAS 603-36-1 (2654)
Triphenylantimony; (C6H5)3Sb

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+	sp	non-aq	25°C	100%	C	I			20020Ra (97159)	12

Medium: CH₂Cl₂. In benzene, K=2.56; diethyl ether, K=2.87; acetone, K=3.02; ethyl acetate, K=3.10.

C21H21P L CAS 6163-58-2 (600)
Tri(2-methylphenyl)phosphine (or 4-methyl where indicated); (CH₃.C₆H₄)₃P

Medium: Toluene. Ligand: tri(4-methylphenyl)phosphine

BF4-	HL	(2497)
Tetrafluoroborate;		

Medium: Na_2SO_4

Br- Bromide:	HL	Bromide	CAS 10035-10-6	(19)
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C2H3N	L	Cyanomethane	CAS 75-05-8	(1399)
Acetonitrile; CH3.CN				

Medium: benzene. $\text{DH}(\text{K1}) = -21$, $\text{DH}(\text{K2}) = -35 \text{ kJ mol}^{-1}$ by calorimetry

C4H6N2 L N-Me-Imidazole CAS 616-47-7 (354)
N-Methyl-1,3-diazole; C3H3N2.CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh++	sp	non-aq	25°C	100%	U	HM		K(Rh2(butanoate)4+L)=9.0 K(Rh2(butanoate)3L+L)=4.9	1979DTa (29606)	17

Medium: benzene. DH(K1)=-52, DH(K2)=-44 kJ mol⁻¹ by calorimetry

C5H5N L Pyridine CAS 110-86-1 (31)

Pyridine, Azine;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh++ sp non-aq 25°C 100% U HM 1979DTa (36673) 18

K(Rh2(butanoate)4+L)=8.2

K(Rh2(butanoate)3L+L)=4.4

Medium: benzene. DH(K1)=-47, DH(K2)=-47 kJ mol⁻¹ by calorimetry

C5H11N L Piperidine CAS 110-89-4 (105)

Perhydropyridine; cyclo(-CH2.CH2.CH2.NH.CH2.CH2-) C5H11N

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh++ sp non-aq 25°C 100% U HM 1979DTa (40457) 19

K(Rh2(butanoate)4+L)=9.0

K(Rh2(butanoate)3L+L)=5.0

Medium: benzene. DH(K1)=-55, DH(K2)=-52 kJ mol⁻¹ by calorimetry

C6H11O3P L CAS 824-11-3 (7548)

4-Ethyl-2,6,7-trioxa-1-phosphabicyclo[2,2,2]octane; CH3CH2C(CH2O)3P

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh++ nmr non-aq -60°C 100% U 1998KTa (49006) 20

K(Rh2(OAc)4+L)=2.48

K(Rh2(OAc)4+2L)=4.98

Method: 31P nmr. Medium: CD2Cl2

C6H12 L CAS 592-41-6 (2771)

1-Hexene; CH2:CH(CH2)3.CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh++ sp non-aq 25°C 100% U M 1987DMb (49013) 21

K(RhA+L)=1.62

A=trifluoroacetate. Also data for A=perfluorobutyrate; and for L=

styrene, cyclohexene, 2,5-dimethyl-2,4-hexadiene, 2-methoxypropene, and more

C7H16N2O2P L CAS 38432-39-2 (7549)

N,N-Diethylamine-1,3,2-dioxaphosphorinan; CH2(CH2O)2PN(CH2CH3)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh++ nmr non-aq -60°C 100% U M 1998KTa (58028) 22

K(Rh2(OAc)4+L)=3.38

K(Rh2(OAc)4+2L)=5.48

K(Rh2(OAc)4+L+P)=5.56

Method: 31P nmr. Medium: CD2Cl2.

P: 4-Ethyl-2,6,7-trioxa-1-phosphabicyclo[2,2,2]octane.

C9H15O6P H3L CAS 2848-01-3 (5882)
Tris(2-carboxyethyl)phosphine; P(CH2.CH2.COOH)3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh++	sp	NaClO4	25°C	0.10M	U	HM		1988AMa (67600)	23
								Keff(Rh2AB2+L=Rh2ABL+B)=7.04	
								Keff(Rh2ABL+L=Rh2AL2+B)=4.60	

Medium: LiClO4. A=(O2CCH3)4, B=H2O

C12H21N2P L CAS 115305-74-3 (5884)
Bis-(3-aminopropyl)phenylphosphine; C6H5P(CH2.CH2.CH2.NH2)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh++	sp	NaClO4	25°C	0.10M	U	HM		1988AMa (82710)	24
								K(Rh2AB2+L=Rh2ABL+B)=6.72	
								K(Rh2ABL+L=Rh2AL2+B)=5.06	

Medium: LiClO4. A=(O2CCH3)4, B=H2O

C15H15O2P HL CAS 85209-41-2 (4067)
3-(Diphenylphosphino)propanoic acid; (C6H5)2P.CH2.CH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh++	sp	NaClO4	25°C	0.10M	U	HM		1988AMa (91918)	25
								K(Rh2AB2+L=Rh2ABL+B)=6.60	
								K(Rh2ABL+L=Rh2AL2+B)=5.26	

Medium: LiClO4. A=(O2CCH3)4, B=H2O

C16H20NP L CAS 115290-71-6 (5883)
Diphenyl-(2-N,N-dimethylaminoethyl)phosphine; (C6H5)2P.CH2.CH2.N(CH3)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh++	sp	NaClO4	25°C	0.10M	U	HM		1988AMa (93949)	26
								K(Rh2AB2+L=Rh2ABL+B)=6.40	
								K(Rh2ABL+L=Rh2AL2+B)=4.46	

Medium: LiClO4. A=(O2CCH3)4, B=H2O

C18H15O3PS HL CAS 54262-24-7 (327)
4-(Diphenylphosphino)benzenesulfonic acid; (C6H5)2P.C6H4.SO3H

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh++	sp	NaClO4	25°C	0.10M	U	HM		1988AMa (97114)	27

$$K_{eff}(Rh2ABL+L=Rh2AL2+B)=5.38$$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K	values	Reference	ExptNo
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Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K	values	Reference	ExptNo
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Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K	values	Reference	ExptNo
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Rh+++	oth none	25°C	0.0	U	1952Lab	(885)	31
K=44.0(870 mV)							

Rh+++	gl	NaClO4	18°C	1.0M	U	I	1938GAa	(886)	32	
							K(Rh(VI)+3e=Rh)=77(1480 mV)			

Rh+++	EMF oth/un 18°C 0.10M U I	1937GGa	(887)	33
		K(Rh(IV)+e=Rh)=24.2(1400 mV)		

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K	values	Reference	ExptNo
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Rh+++ sol oth/un 25°C 0.10M U I 1985PSC (2289) 34
Kout(Rh(phen)3+Br)=0.65

$K_{out}(\text{Rh}(\text{phen})_3+2\text{Br})=0.56$
 Also K_{out} (1:1 complex)=0.55 (I=0.25 M), 0.50 (I=0.5 M), 0.44 (I=0.75 M)
 and K_{out} (1:2 complex)=0.49 (I=0.25 M), 0.37 (I=0.5 M), 0.27 (I=0.75 M)

Rh+++ sp non-aq 25°C 100% U M 1976B0a (2290) 35
 $K(\text{RhA4}+\text{RhA4Br2}=\text{Rh2A8Br2})=4.3$
 Medium: MeCN. A=cyclohexylisocyanide

Rh+++ kin NaCl04 35°C 1.50M U T 1970BPb (2291) 36
 $K(\text{Rh}(\text{NH}_3)_5\text{H}_2\text{O}+\text{L})=-1.23$
 By spec. $K=-0.77$. At 70 C: $K(\text{trans-Rh}(\text{en})_2(\text{H}_2\text{O})_2+\text{L})=-0.28$ (by kinetics)

Rh+++ kin NaCl04 35°C 4.0M U 1969RSa (2292) 37
 $K(\text{RhCl}_5+\text{L})=0.10$

Rh+++ kin NaCl04 65°C 4.0M U T 1968M0b (2293) 38
 $K(\text{Rh}(\text{NH}_3)_5+\text{L})=-1.1$
 $K=-1.0(25\text{ C})$

Rh+++ vlt oth/un 25°C 0.0 U K1=14.3 B2=16.3 1961CPb (2294) 39
 B3=17.6
 B4=18.4
 B5=17.2
 Additional method: spectrophotometry.

Rh+++ oth oth/un 84°C 0.0 U 1939LAa (2295) 40
 $K(\text{Rh}(\text{NH}_3)_5+\text{L})=3.20$
 Method:chemical analysis

 CN- HL Cyanide CAS 74-90-8 (230)
 Cyanide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	nmr	oth/un	25°C	?	U			1994RGa (2759)	41
							B6=47		

Method: correlation with nmr parameters.

 CO3-- H2L Carbonate CAS 465-79-6 (268)
 Carbonate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	kin	NaCl04	25°C	2.0M	C			2000KYb (3366)	42
							* $K(\text{Rh}(\text{NH}_3)_5\text{HCO}_3)=-6.32$		

*K is for loss of proton from HCO_3^- .

 Cl- HL Chloride CAS 7647-01-0 (50)
 Chloride;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	sol	oth/un	25°C	0.10M	U	I	Kout(Rh(phen)3+Cl)=0.43	1985PSc (5616)	43
Also Kout=0.32 (I=0.25 M), 0.17 (I=0.5 M), 0.03 (I=0.75 M).									
Rh+++	kin	NaCl	50°C	3.0M	C		K(fac-RhCl3(H2O)3+L)=6.3 K(RhCl3(H2O)2L+L)=5.3 K(RhCl3(H2O)L2+L)=0.039	1975PHa (5617)	44
Rh+++	vlt	NaClO4	25°C	1.0M	U		K1=2.62 B2=4.38 B3=5.94 B4=7.42 B5=8.79	1974MMd (5618)	45
Medium: HClO4									
Rh+++	con	non-aq	25°C	100%	U	T	K(cis-Ru(en)2L2+L)=2.41 K(trans-Ru(en)2L2+L)=1	1971PWb (5619)	46
Medium: DMSO									
Rh+++	kin	NaClO4	35°C	1.50M	U	T M	K(trans-Rh(NH3)5H2O+L)=-1.3	1970BPb (5620)	47
65 C: K=-0.74									
Rh+++	kin	NaClO4	45°C	1.50M	U	M	K(trans-Rh(en)2BrH2O+L)=-0.19	1970BPb (5621)	48
Rh+++	kin	NaClO4	35°C	4.0M	U		K6=-1.1	1969RSa (5622)	49
Rh+++	sp	NaClO4	90°C	4.0M	U		K1=2.49 B2=4.45 B3=6.15 B4=7.6 B5=8.1 B6=7.8	1969SEa (5623)	50
Medium: HClO4									
Rh+++	kin	none	87°C	0.0	U	H		1968LBb (5624)	51
77-97 C, DH(Rh(NH3)5+L)=14.6 kJ mol-1, DS=112 J K-1 mol-1									
Rh+++	kin	NaClO4	65°C	4.0M	U	T	K(Rh(NH3)5+L)=-0.74 K1=-0.80(25 C). In 4 M LiClO4: K=-0.60(65 C); 5 M NaClO4: -0.66(65 C)	1968MOB (5625)	52
Rh+++	kin	NaClO4	45°C	4.0M	U	T	K5=0.77	1967RSa (5626)	53
Medium: HClO4. K5=0.90(30 C),0.83(35 C),0.80(40 C)									

Rh+++ ISE KNO3 55°C 0.10M U T M 1966BPc (5627) 54
 K(Ag+RhCl6)=4.68
 2nd Metal:Ag+. K=5.69(25 C),5.18(35 C)

Rh+++ EMF NaCl04 55°C 0.10M U M 1966BPg (5628) 55
 K(RhCl3(H2O)2OH+H)=4.8
 K(RhCl4(H2O)OH+H)=6.0
 K(RhCl5OH+H)=7.3

Also solubility data with AgCl

Rh+++ sp NaCl04 85°C 0.10M U T H 1966BPh (5629) 56
 K2K3=3.65

Also chemical analysis. Medium: HCl04. K2K3=4.25(25 C), 4.11(40 C),
 4.06(55 C), 3.83(70 C), DH(K2K3)=-20.1 kJ mol-1

Rh+++ kin NaCl04 85°C 2.50M U T K1=-0.15 1966SHb (5630) 57
 K(RhOH+L)=-0.40
 K1=-0.05(75 C), -0.10(80 C); K(RhOH+L)=-0.22(75 C), -0.30(80 C)

Rh+++ oth NaCl 40°C var U 1965BPe (5631) 58
 K3=1.69
 K4=0.47
 K5=-0.51

Method:electrophoresis

Rh+++ EMF NaCl04 25°C 0.10M U 1965BPg (5632) 59
 K4=1.39
 K5=0.55
 K6=-0.23

Medium:HCl04

Rh+++ kin NaCl04 25°C 0.10M U 1965BPg (5633) 60
 K(Hg+RhCl6)=7.3

2nd Metal:Hg++. Medium:HCl04

Rh+++ kin NaCl04 35°C 4.0M U T 1965RHa (5634) 61
 K6=-1.14
 Medium: HCl04. K6=-0.72(15 C), -0.85(20 C), -0.93(25 C)

Rh+++ sp NaCl04 120°C 6.0M U K1=>3 K2=>3 1963WRa (5635) 62
 K3=3
 K4=2.4
 K5=1.4
 K6=-0.25

Rh+++ vlt NaCl04 25°C 1.0M U K1=2.45 B2=4.54 1958CPb (5636) 63
 K3=1.38
 K4=1.16
 K5=1.67
 K6=-0.32

Rh+++	oth	oth/un	84°C	0.0	U	1939LAa	(5637)	64
K(Rh(NH3)5+L)=4.95								

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K	values	Reference	ExptNo
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F-          HL      Fluoride          CAS 7644-39-3  (201)
Fluoride;
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Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Rh+++ sp oth/un 45°C 0.20M U T 1970BPb (7137) 66
K(trans-Rh(NH3)5(H2O+F))=0.41
Medium: NaF. K=1.06(75 C)

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FClBrI           HL           (541)
Halides, comparative (for book data under ligand 80)

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Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K	values	Reference	ExptNo
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Rh+++ kin NaClO4 65°C 1.50M U TI 1968BPb (7430) 67
Kout(Rh(NH3)5H2O+Cl)=-0.81
Kout=-1.02(35C), -1.27(Br,35C). Ai I=0.2: Kout=0.42(F,45 C), 1.06(F,75 C)
Plus data at other I values

Rh+++	kin oth/un 50°C	var	U	HM	1967BPb	(7431)	68
				K(RhACl+Cl)=2.7			
				K(RhACl+Br)=3.2			
				K(RhAI+Cl)=3.0			
				K(RhAI+I)=3.7			

RhA=trans-Rh(en)₂

Rh+++	kin	NaClO4	50°C	0.20M	U	HM	1967PSb	(7432)	69
							K(Rh(NH3)5+Cl)=2.25		
							K(Rh(NH3)5+Br)=2.16		
							K(Rh(NH3)5+I)=2.68		

DH(Cl)=-5.4 kJ mol⁻¹, DS=-60 J K⁻¹ mol⁻¹; DH(Br)=-2.9, DS=-49; DH(I)=7.5, DS=-26.8

Rh+++	sp	oth/un	96°C	2.0M	U T H	1966BPf (7433)	70
K(RhACl ₂ +I=RhAClI+Cl)=0.80?							

RhA=trans-Rh(en)₂. K=0.78(85 °C), 0.85(90 °C). Also other halogen complexes

Rh+++ sp KCl 85°C 1.50M U M 1965BPd (7434) 71
 $K(\text{RhACl}_2 + \text{Br} = \text{RhABrCl} + \text{Cl}) = 0.29$
 $K(\text{RhABrCl} + \text{Br} = \text{RhABr}_2 + \text{Cl}) = -0.10$

RhA=trans-Rh(en)₂

I- HL Iodide CAS 10034-85-2 (20)
 Iodide;

 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ sol oth/un 25°C 0.10M U I 1985PSc (8357) 72

$K_{\text{out}}(\text{Rh}(\text{phen})_3 + \text{I}) = 0.79$

$K_{\text{out}}(\text{Rh}(\text{phen})_3 + 2\text{I}) = 1.05$

Also K_{out} (1:1 complex) = 0.71 (I=0.25 M), 0.67 (I=0.5 M), 0.60 (I=0.75 M)

and K_{out} (1:2 complex) = 0.88 (I=0.25 M), 0.68 (I=0.5 M), 0.56 (I=0.75 M)

 Rh+++ sp non-aq 25°C 100% U I M 1976B0a (8358) 73

K:RhA₄+RhA₄I₂=Rh₂A₈I₂, A=cyclohexylisocyanide. In MeCN: K=3.7; in DMSO: 3.8;
 In nitromethane: 3.4; in acetone: 2.5

 Rh+++ kin NaClO₄ 35°C 4.0M U 1969RSa (8359) 74

$K(\text{Rh}(\text{Cl})_5 + \text{L}) = 0.48$

NH₃ L Ammonia CAS 7664-41-7 (414)
 Ammonia

 Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ sol R₄N.X 25°C 1.00M U 1995MPa (9205) 75

$K_{\text{out}}(\text{Rh}(\text{NH}_3)_6 + \text{L}) = 0.93$

Medium: NH₄ClO₄

 Rh+++ sp NaClO₄ 25°C 1.00M C T H 1992SPa (9206) 76

$K((\text{Rh}_2\text{L}_8(\text{OH})_2(\text{H}_2\text{O}) = 2(\text{cis-RhL}_4(\text{OH})(\text{H}_2\text{O}))) = -1.84$

Data also for other equilibria between mononuclear and binuclear species.

 Rh+++ gl NaClO₄ 25°C 1.00M C H 1986SKa (9207) 77

*K₁(cis-RhL₄) = -6.39

*K₂(cis-RhL₄) = -8.36

*K₁(trans-RhL₄) = -4.86

*K₂(trans-RhL₄) = -8.29

cis-RhL₄: DH(*K₁) = 44.9 kJ mol⁻¹; DH(*K₂) = 42.6;

trans-RhL₄: DH(*K₁) = 34.0 kJ mol⁻¹; DH(*K₂) = 36.7

 Rh+++ sp NaClO₄ 125°C 0.10M U T 1981BJa (9208) 78

$K(\text{RhL}_5\text{OH} + \text{HL} = \text{RhL}_6 + \text{H}_2\text{O}) = 1.92$

For temperatures 111.5, 135, 142 C, K=2.36, 1.80, 1.63 respectively

 Rh+++ kin NaClO₄ 125°C 0.10M U T 1981BJa (9209) 79

$K(\text{RhL}_5\text{OH} + \text{HL} = \text{RhL}_6 + \text{H}_2\text{O}) = 2.04$

For temperatures 111.5, 135, 142 C, K=2.39, 1.67, 1.67 respectively

Rh+++ gl oth/un 25°C var U 1968TOb (9210) 80

K(RhHL4+L)=3.7

K(RhEtL4+L)=9.4

K(Rh(C2F4H)L4+L)=9.7

NO2- HL Nitrite CAS 7782-77-6 (635)

Nitrite;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ sol oth/un 26°C 3.0M U T H K1=6.16 B2=11.21 1983ZYa (9404) 81

B3=11.53

B4=12.20

B5=12.85

B6=13.99

pH=9-10, NaNO2 aqueous soluton

Rh+++ kin NaClO4 35°C 4.0M U 1969RSa (9405) 82

K(RhCl5+L)=0.04

N3- HL Azide CAS 7782-79-8 (441)

Azide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ kin oth/un 77°C var U 1970DLA (10255) 83

K(Rh(NH3)5L+H)=2.2

Medium: HClO4

Rh+++ kin oth/un 60°C var U M 1968STb (10256) 84

K(Rh(NH3)5L+H)=1.95

OH- HL Hydroxide (57)

Hydroxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ gl NaClO4 25°C 1.0M C T H 1982HNb (12045) 85

*K(H2OA2Rh(OH)RhA2H2O)=-2.372

*K((HO)A2Rh(OH)RhA2H2O)=-9.128

A is 1,2-diaminoethane. K(A2Rh(OH)2RhA2+H2O=H2OA2Rh(OH)RhA2(OH))=1.05

DH(*K((H2O)A2Rh(OH)RhA2(H2O)))=28 kJ mol-1, DS=49 J K-1 mol-1.

Rh+++ gl NaClO4 25°C 1.00M C M 1980SFb (12046) 86

*K1(RhA5(H2O))=-6.93

*K1(cis-RhA4)=-6.40

*K1(trans-RhA4)=-4.92

*K2(trans-RhA4)=-8.26

A=NH₃. *K₂=-8.32

Rh+++	oth	NaCl04	18°C	0.10M	U		K ₁ =11.03	B ₂ =21.47	1976MNa (12047)	87
							B ₃ =31.52			
							B ₄ =38.29			
							B ₅ =43.06			
							B ₆ =46.36			

Rh+++	gl	NaCl	26°C	1.0M	C				1975PAa (12048)	88
							*K ₁ (Rh(en) ₂ (H ₂ O) ₂)=-4.49			
							*B ₂ (Rh(en) ₂ (H ₂ O) ₂)=-11.97			

Rh+++	gl	NaCl04	26°C	1.0M	C T				1975PAa (12049)	89
							*K ₁ =-4.37			
							*K ₂ =-7.64			

At 40 C: *K₁=-4.17, *K₂=-7.42; 50 C: -4.02, -7.52; 65 C: *K₁=-3.82

Rh+++	kin	NaCl	25°C	3.0M	C I				1975PHa (12050)	90
							*K(mer-RhCl ₃ (H ₂ O) ₃)=-6.51			

Rh+++	kin	none	25°C	0.0	C I				1975PHa (12051)	91
							*K(mer-RhCl ₃ (H ₂ O) ₃)=-6.96			

Rh+++	sol	oth/un	25°C		U				1971IBb (12052)	92
							K(Rh(OH) ₃ (s)+OH=Rh(OH) ₄)=-3.9			
							K(Rh(OH) ₃ (s)+3OH=Rh(OH) ₆)=-5.9			

Rh+++	cal	NaCl04	25°C	0.10M	U H				1970CHb (12053)	93
							*K(RhA ₅ +H ₂ O=RhA ₅ OH+H)=-6.14			

A=NH₃. DH(*K)=39.50 kJ mol⁻¹, DS=17.2 J K⁻¹ mol⁻¹

Rh+++	gl	oth/un	20°C	dil	U M				1967BPb (12054)	94
							*K ₁ (tr-Rh(en) ₂ Cl(H ₂ O) ₂)=-6.44			
							*K ₁ (tr-Rh(en) ₂ Br(H ₂ O) ₂)=-6.07			
							*K ₁ (tr-Rh(en) ₂ I(H ₂ O) ₂)=-6.55			

Rh+++	gl	NaCl04	35°C	0.20M	U T H				1967PSb (12055)	95
							*K ₁ =-6.24			

*K₁=-6.63(9.4 C). DH=25 kJ mol⁻¹, DS=-38 J K⁻¹ mol⁻¹

Rh+++	gl	NaCl04	25°C	2.50M	U T H				1966SHb (12056)	96
							*K ₁ =-3.40			

*K₁=-3.20(45 C), -3.08(60 C), -2.96(75 C), -2.89(85 C). DH=18.0 kJ mol⁻¹

Rh+++	gl	oth/un	25°C		? U				1964PHb (12057)	97
							*K ₁ =-3.2			

Rh+++	sp	NaCl04	20°C	1.0M	U				1960C0c (12058)	98
							*K ₁ =-2.92			

Rh+++ sp oth/un 25°C dil U 1959FAa (12059) 99
*K1=-3.43?
K(Rh(OH)3(s)=RhOH+20H)=-22.32

Rh+++ gl oth/un ?25 dil U 1959GVa (12060) 100
*K1(Rh(en)3) < -12

Rh+++ oth none 25°C 0.0 U 1958MPa (12061) 101
*Kso=2.56?
*Kso: K(0.5 Rh2O3(s)+3H=1.5 H2O+Rh); method:combination of thermodynamic data

Rh+++ sol oth/un 20°C dil U 1956JOa (12062) 102
K(Rh(OH)3(s)+H=Rh(OH)2)=-5

Rh+++ sp oth/un 20°C dil U 1930GFa (12063) 103
*K1(Rh(NH3)6)=-11.14

Rh+++ kin none 15°C 0.0 U 1928BVa (12064) 104
*K1(Rh(NH3)5(H2O))=-5.86

P3010----- H5L CAS 10380-08-2 (1001)
Tripolyphosphate; from (HO)2PO.0.PO(OH).0.PO(OH)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
Rh+++ sp oth/un 25°C 1.00M U 1978FPa (13899) 105
K(Rh+2HP3010)=16.37
K(Rh+2P3010)=26.25

K(Rh(H2O)2Cl4+2H2L=RhH2L2+2H+4Cl)=-2.43

SCN- HL Thiocyanate CAS 463-56-9 (106)
Thiocyanate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
Rh+++ nmr oth/un 25°C ? U 1994RGa (15243) 106
B6=35

Method: correlation with nmr parameters.

Rh+++ ISE oth/un 25°C 0.10M U 1975LMa (15244) 107
K(Rh(NH3)5NCS+Ag)=3.38

Rh+++ kin NaCl04 35°C 4.0M U 1969RSa (15245) 108
K(RhCl5+L)=0.96

S04-- H2L Sulfate CAS 7664-93-9 (15)
Sulfate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

DH=-16 kJ mol⁻¹

C2H8N2 L Ethylenediamine CAS 107-15-7 (23)
1,2-Diaminoethane; H2N.CH2.CH2.NH2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ sp NaCl04 25°C 1.00M C 1983HSc (23227) 117

*K(trans-RhL2)=-4.47
*K(trans-Rh(OH)L2)=-7.91

C3H4N2 L Imidazole CAS 288-32-4 (90)
1,3-Diazole, imidazole; C3H4N2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ cal oth/un 25°C 0.10M U HM 1977DSa (23920) 118

K(Rh2(O2CCH2OCH3)4+L)=3.94
K(Rh2(O2CCH2OCH3)4L+L)=2.40

Medium: phosphate buffer, pH 7.4

Rh+++ cal oth/un 25°C 0.10M U 1976DSa (23921) 119

K(Rh2(O2CCH2OCH3)4+L)=3.94
K(Rh2(O2CCH2OCH3)4L+L)=2.40

C3H6O2S H2L Thiolactic acid CAS 79-42-5 (366)
2-Mercaptopropanoic acid; CH3.CH(SH).COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ gl NaCl04 25°C 0.0 C TIH K1=9.12 B2=16.42 1985SNc (25167) 120

K3=5.35

Data for I=0.10-1.0 M NaCl04, extrapolated to I=0.0. Data for 35 and 45 C
DH(K1)=-48.3 kJ mol⁻¹, DS=13; DH(K2)=-31.6, DS=33; DH(K3)=-21.9, DS=29

C3H7NO2 HL Alanine CAS 56-41-7 (86)
2-Aminopropanoic acid; H2N.CH(CH3).COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ gl NaCl04 25°C 0.0 C TIH K1=15.95 B2=23.95 1985SNc (26255) 121

K3=4.35

Data for I=0.10-1.0 M NaCl04, extrapolated to I=0.0. Data for 35 and 45 C
DH(K1)=-167 kJ mol⁻¹, DS=-255; DH(K2)=-52.7, DS=-25; DH(K3)=-17.5, DS=25

C3H7NO2S H2L Cysteine CAS 52-90-4 (96)
2-Amino-3-mercaptopropanoic acid; H2N.CH(CH2.SH)COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ gl NaClO4 25°C 0.0 C TIH K1=8.60 B2=11.95 1985SNC (26832) 122
K3=2.25

Data for I=0.10-1.0 M NaClO4, extrapolated to I=0.0. Data for 35 and 45 C
DH(K1)=-61.5 kJ mol⁻¹, DS=-42; DH(K2)=-18.0, DS=-25; DH(K3)=-17.6, DS=-17

C3H7NS L CAS 758-16-7 (476)

N,N-Dimethylthioformamide; HCS.N(CH3)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ cal non-aq 24°C 100% U HM 1976Lda (27258) 123

Medium: benzene. K((RhACl)2+2L=2RhALCl)=6.0, A=1,5-cyclooctadiene.

DH=-37 kJ mol⁻¹

C3H10N2 L Propanediamine CAS 109-76-2 (123)

1,3-Diaminopropane; H2N.CH2.CH2.CH2.NH2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ sp NaClO4 25°C 1.0M C 19840Sa (28321) 124

*K1(cis-RhL2)=-6.15

*K2(cis-RhL2(OH))=-8.20

*K1(trans-RhL2)=-4.39

*K2(trans-RhL2(OH))=-8.20

C4H6O4S H3L Thiomalic acid CAS 70-49-5 (109)

2-Mercaptosuccinic acid, 2-Sulfanyl-1,4-butanedioic acid; HOOCH(SH).CH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ sp oth/un 30°C ? U K1=21.6 1966SNb (30360) 125

By glass electrode: K2=8.4

C4H8S L CAS 110-01-0 (150)

Tetrahydrothiophene; cyclo(-CH2.CH2.S.CH2.CH2-)

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ cal non-aq 24°C 100% U HM 1976Lda (33741) 126

Medium: benzene. K((RhACl)2+2L=2RhALCl)=1.4, A=1,5-cyclooctadiene.

DH=-22 kJ mol⁻¹

C4H9NO L Morpholine CAS 110-91-8 (318)

Perhydro-1,4-oxazine, Tetrahydro-1,4-oxazine; C4H8NO

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ cal non-aq 24°C 100% U HM 1976Lda (33794) 127

Medium: benzene. K((RhACl)2+2L=2RhALCl)=3.9, A=1,5-cyclooctadiene.

DH=-41 kJ mol⁻¹

C5H5N	L	Pyridine	CAS 110-86-1	(31)
Pyridine, Azine;				

Rh+++ cal oth/un 25°C 0.10M U HM 1977DSa (36674) 128
K(Rh₂(O₂CCH₂OCH₃)₄+L)=4.52
K(Rh₂(O₂CCH₂OCH₃)₄L+L)=2.81

Rh+++ sp alc/w 25°C 100% U T M 1977Pva (36675) 129
K(RhA2C12+L)=1.98

Medium: MeOH

Medium: benzene. $K((\text{RhAc})_2+2\text{L}=2\text{RhALCl})=3.04$, $A=1,5\text{-Cyclooctadiene}$. $\text{DH}=-28 \text{ kJ mol}^{-1}$. In triethylphosphate, $K=3.61$, $\text{DH}=-30 \text{ kJ mol}^{-1}$

C5H6	HL	Cyclopentadiene	CAS 542-92-7	(4288)
Cyclopentadiene; cyclo(-CH:CH.CH2.CH:CH-)				

Rh+++ sp NaClO4 25°C 0.20M U M 1999CEa (37081) 131

*K(RhL(H₂O)₃)=-6.47
K(2RhL(OH)=(RhL)₂(u-OH)₃)=-8.9
K(RhL+Cl)=2.1
K(RhL+Br)=2.8

K(RhL+CN-py)=3.2, K(RhL+py-nia)=3.6, K(RhL+py)=4.6, K(RhL+dms)=3.4, K(RhL+tu)>6, K(RhL+SCN)=5.1. dms: dimethylsulfide; py-nia: nicotinamide.

C5H10N4O3 L CAS 54376-69-1 (8335)
N,N'-Carbonylbis(2-aminoacetamide);

Rh+++ gl NaClO4 25°C 0.10M U TIH K1=9.75 B2=14.90 1980SAc (40139) 132
Data for 0.075-0.15 M. At I=0, K1=10.20, K2=5.75. Also data for 30 C.
DH and DS values.

C5H11N	L	Piperidine	CAS	110-89-4	(105)
Perhydropyridine;	cyclo(-CH2.CH2.CH2.NH.CH2.CH2-)			C5H11N	

Rh+++ cal non-aq 24°C 100% U HM 1976Lda (40458) 133
Medium: benzene. $K((\text{RhACl})_2 + 2\text{L} = 2\text{RhALCl}) = 5.4$, A=1,5-Cyclooctadiene.
 $\Delta H = -42 \text{ kJ mol}^{-1}$

C6H7N L gamma-Picoline CAS 108-89-4 (325)
4-Methylpyridine; C5H4N.CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ cal non-aq 24°C 100% U IHM 1976Lda (44833) 134
Medium: benzene. $K((\text{RhACl})_2 + 2\text{L} = 2\text{RhALCl}) = 3.67$, A=1,5-Cyclooctadiene.
DH=-30 kJ mol⁻¹. In THF: 2.94, DH(B2)=-32 kJ mol⁻¹

C6H9N3O2 HL Histidine CAS 71-00-1 (1)
2-Amino-3-(4'-imidazolyl)propanoic acid; H2N.CH(CH2.C3H3N2)COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ cal oth/un 25°C 0.10M U HM 1977DSa (47608) 135
 $K(\text{Rh}_2(\text{O}_2\text{CCH}_2\text{OCH}_3)_4 + \text{L}) = 4.38$
 $K(\text{Rh}_2(\text{O}_2\text{CCH}_2\text{OCH}_3)_4\text{L} + \text{L}) = 2.79$

Medium: phosphate buffer, pH 7.4

C6H14S L (6898)
S-Ethyl-2-mercaptobutane; CH3.CH(SCH2.CH3)CH2.CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ EMF non-aq 25°C 100% U K1=2.59 B2=4.53 1990MRc (51141) 136
B3=6.25

Medium: Dimethylformamide, 0.1 M NaClO4; Rh/Pt-electrode

C7H6O2S H2L Thiosalicylic CAS 147-93-3 (236)
2-Mercaptobenzoic acid; HS.C6H4.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ oth alc/w ? 40% U K1=8.55 B2=15.30 1973Nna (53915) 137

C7H7NO L Benzamide CAS 55-21-0 (2328)
Benzamide; C6H5.CO.NH2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ sp NaClO4 25°C 1.0M U 1975ZFa (55150) 138
 $K(\text{Rh}(\text{NH}_3)_5 + \text{H} - 1\text{L}) = 2.2$

C7H13N L Quinuclidine CAS 100-76-5 (1784)
1-Azabicyclo[2.2.2]octane;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

Rh+++ cal non-aq 24°C 100% U HM 1976Lda (57423) 139

Medium: benzene. $K((\text{RhACl})_2+2\text{L}=2\text{RhALCl})=1.3$, A=1,5-Cyclooctadiene.

DH=-29 kJ mol⁻¹

C7H16S L (6899)

S-Ethyl-2-methyl-2-mercaptobutane; $\text{H}_3\text{C}.\text{CH}_2.\text{S}.\text{C}(\text{CH}_3)_2.\text{CH}_2.\text{CH}_3$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+++	EMF	non-aq	25°C	100%	U	I		K1=2.32 B2=4.12 B3=5.81	1990MRc (58097)	140

Medium: Dimethylformamide, 0.1 M NaClO₄; Rh/Pt-electrode

In acetone: K1=3.71, B2=6.99, B3=9.27

C8H13NO6S H3L (5675)

2-Mercapto-1-aminoethane-N,N,S-triethanoic acid; $\text{HOOC}.\text{CH}_2.\text{S}.\text{CH}_2.\text{CH}_2.\text{N}(\text{CH}_2\text{COOH})_2$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+++	gl	oth/un	25°C	0.10M	U			K(RhL+H)=3.65 K(RhHL+H)=3.2	1983ESa (61830)	141

C8H18S L CAS 544-40-1 (2346)

Bis(n-butyl)sulfide; $\text{C}_4\text{H}_9.\text{S}.\text{C}_4\text{H}_9$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+++	EMF	non-aq	25°C	100%	U	I		K1=4.05 B2=7.75 B3=10.80	1990MRc (63008)	142

Medium: Acetone, 0.1 M NaClO₄; Rh/Pt-electrode. In DMF K1=2.61, B2=4.70,

B3=6.56

C9H7N3O2S H2L TAR CAS 2246-46-0 (707)

4-(2'-Thiazolylazo)-resorcinol; $\text{C}_3\text{H}_2\text{NS}.\text{N}:\text{N}.\text{C}_6\text{H}_3(\text{OH})_2$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+++	sp	oth/un	?	?	U			K(Rh+HL)=8.45	1968BIb (64723)	143

Rh+++	sp	alc/w	25°C	50%	U			K(?)=12	1967NPb (64724)	144
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Medium: 50% MeOH, 0.1 M NaClO₄

C9H18O2S L (6900)

S-Butyl-O-(2-butyl)thiocarbonate; $\text{CH}_3.\text{CH}_2.\text{CH}(\text{CH}_3).\text{O}.\text{CO}.\text{S}.\text{CH}_2.\text{CH}_2.\text{CH}_2.\text{CH}_3$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh+++	EMF	non-aq	25°C	100%	U			K1=1.96 B2=3.45	1990MRc (67961)	145

B3=4.81

Medium: Dimethylformamide, 0.1 M NaClO₄; Rh/Pt-electrode

C10H14N5O7P H2L AMP-5 CAS 18422-05-4 (842)

Adenosine-5'-monophosphoric acid, 5-Adenylic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	cal	oth/un	25°C	0.10M	U	HM		1977DSa (72484)	146
							K(Rh ₂ (O ₂ CCH ₂ OCH ₃) ₄ +L)=3.45		
							K(Rh ₂ (O ₂ CCH ₂ OCH ₃) ₄ L+L)=2.70		

Medium: phosphate buffer, pH 7.4

Rh+++	sp	oth/un	22°C	0.10M	U	M		1975RHa (72485)	147
							K(RhA+L)=3.18		
							K(RhB+L)=3.28		
							K(RhY+L)=3.63		
							K(RhAL+L)=2.20		

At pH 7. K(RhBL+L)=2.31; K(RhCL+L)=2.54. HA=CH₃.CO.CO₂H; HB=CH₃.CO₂H;
HC=C₂H₅.CO₂H

C10H15N5O10P2 H3L ADP CAS 20398-34-9 (2181)

Adenosine-5'-diphosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	sp	oth/un	22°C	0.10M	U		K1=3.06 B2=5.10	1975RHa (73012)	148

Cation is RhCH₃COO⁺ and ionic medium is a K-phosphate buffer

C10H16N5O13P3 H4L ATP CAS 56-65-5 (403)

Adenosine-5'-triphosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	sp	oth/un	22°C	0.10M	U			1975RHa (74815)	149
							K(Rh(CH ₃ COO)+L)=3.27		
							K(Rh(CH ₃ COO)L+L)=2.11		
							K(Rh(C ₂ H ₅ COO)+L)=3.65		
							K(Rh(C ₂ H ₅ COO)L+L)=2.52		

Medium: 0.1 M phosphate buffer, pH 7.5

C12H24O2S L (6901)

S-Pentyl-O-(hexyl)thiocarbonate; C₆H₁₃.O.CO.S.C₅H₁₁

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	EMF	non-aq	25°C	100%	U		K1=1.89 B2=3.30	1990MRc (83114)	150
							B3=4.51		

Medium: Dimethylformamide, 0.1 M NaClO₄; Rh/Pt-electrode

C12H26S L CAS 6294-31-3 (5697)
S,S-Dihexylsulfide; C6H13.S.C6H13

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	EMF	non-aq	25°C	100%	U		K1=3.98 B2=7.54 B3=10.48	1990MRc (84034)	151

Medium: Acetone, 0.1 M NaClO4; Rh/Pt-electrode

C13H9N3OS HL TAN CAS 1147-56-4 (4030)
1-(1',3'-Thiazol-2'-ylazo)-2-hydroxynaphthalene;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh+++	sp	mixed	?	40%	U		K1=9.84	1971IBa (84617)	152

Medium: 40% dimethylformamide

e- HL Electron (442)
Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh++++	EMF	oth/un	25°C	0.25M	U	I		1948DSa (888)	153

K(Rh(IV)+e=Rh)=23.3(1380 mV)

Medium: H2SO4. In 3 M H2SO4: K=24.4(1440 mV), 0.5 M: 24.3(1435 mV)

Rh++++	EMF	oth/un	22°C	0.10M	U			1937GGa (889)	154
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K(Rh(VI)+2e)=50(1460 mV)

Medium: H2SO4

Cl- HL Chloride CAS 7647-01-0 (50)
Chloride;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh++++	sp	oth/un	25°C	?	U			1974TMa (5638)	155

K4=3.48

OH- HL Hydroxide (57)
Hydroxide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Rh++++	kin	NaClO4	25°C	1.00M	U			1977KLa (12065)	156

K(RhO(OH)+OH=RhO(OH)2)=4.48

K(RhO(OH)2+OH=RhO(OH)3)=3.54

Rh++++	kin	oth/un	25°C	.007M	U			1977KYa (12066)	157
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K(RhO2+OH)=7.3

C10H8N2 L 2,2'-Bipyridyl CAS 366-18-7 (25)
 2,2'-Bipyridine; (C5H4N)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Rh++++	sp	none	25°C	0.0	U				1982CCc (69637)	158
								K(2Rh(I)L2=[RhL2]2)=4.0		
								K(Rh(I)L2+H3O=RhL2(H)H2O)=7.3		
								K([Rh(I)L2]2+H=[RhL2]2H)=9.3		

REFERENCES

- 2002ORa S Otto,A Roodt; Inorg.Chim.Acta,331,199 (2002)
 2000BNa A Bunn,Y Ni,B Wayland; Inorg.Chem.,39,5576 (2000)
 2000KYb Y Kitamura,L Yano,K Fujimori; Bull.Chem.Soc.Jpn.,73,2025 (2000)
 1999CEa S Cayemittes,H Elias,A Merbach; Inorg.Chem.,38,4309 (1999)
 1998Kta A Kudryavtsev,A Teleshev,W Linert; Inorg.Chim.Acta,267,293 (1998)
 1997Saa L Spiccia,J Aramini,S Crimp,A Drljaca; J.Chem.Soc.,Dalton Trans.,4603 (1997)
 1995MPa V Mironov,G Pashkov et al; Zh.Neorg.Khim.,40,1670 (1995)
 1994RGa M Read,J Glaser,I Persson,M Sandstrom; J.Chem.Soc.,Dalton Trans.,3243 (1994)
 1992LPa P Lahuerta,J Paya,A Bianchi; Inorg.Chem.,31,5336 (1992)
 1992SPa J Springborg; Acta Chem.Scand.,46,956,1047 (1992)
 1990MRc V Maistrenko,I Rusakov et al; Zh.Obshch.Khim.,60,851 (1990)
 1988AMa M Aquino,D Macartney; Inorg.Chem.,27,2868 (1988)
 1987DMb M Doyle,S Mahapatra et al; Inorg.Chem.,26,3070 (1987)
 1986SKa L Skibsted; Acta Chem.Scand.,A40,364 (1986)
 1985PSc A Pyartman,M Sof'in; Zh.Neorg.Khim.,30,1230 (1985)
 1985SNc C Sharma,S Narvi; Thermochim.Acta,90,1 (1985)
 1984OSa B Oby,L Skibsted; Acta Chem.Scand.,A38,399 (1984)
 1983ESa N Ezerskaya,L Schubochkin; Zh.Neorg.Khim.,28,1515(854) (1983)
 1983HSc K Howland,L Skibsted; Acta Chem.Scand.,A37,647 (1983)
 1983ZYa Zhang Jianmin,Yang Bingyu,H Z,M G; Acta Chimica Sinica,284 (1983)
 1982CCc M Chou,C Creutz,D Mahajan et al; Inorg.Chem.,21,3989 (1982)
 1982HNb M Hancock,B Nielsen,J Springborg; Inorg.Chim.Acta,41,25 (1982)
 1981BJa S Balt,A Jelsma; J.Chem.Soc.,Dalton Trans.,1289 (1981)
 1980SAc P Srivastava,S Adhya,B Banerjee; J.Indian Chem.Soc.,57,985 (1980)
 1980SFb L Skibsted,P Ford; Acta Chem.Scand.,A34,109 (1980)
 1979DTa R Drago,S Tanner,R Richman et al; J.Am.Chem.Soc.,101,2897 (1979)
 1978FPa N Falendish,E Parkhomenko et al; Zh.Neorg.Khim.,23,2130(1170) (1978)
 1977DSa K Das,E Simmons,J Bear; Inorg.Chem.,16,1268 (1977)
 1977Hra J Halpern,D Riley,S Chan et al; J.Am.Chem.Soc.,99,8055 (1977)
 1977KLa V Kalinina,V Lyakushina; Zh.Neorg.Khim.,22,3325(1814) (1977)
 1977KYa V Kalinina,K Yatsimirskii et al; Zh.Neorg.Khim.,22,2488(1344) (1977)
 1977PVa A Peloso,L Volponi; J.Chem.Soc.,Dalton Trans.,2356 (1977)
 1977SPa M Sofin,A Pyartman et al; Zh.Fiz.Khim.,51,1281 (1977)
 1976BOa A Balch,M Olmstead; J.Am.Chem.Soc.,98,2354 (1976)
 1976DSa K Das,J Bear; Inorg.Chem.,15,2093 (1976)
 1976Lda M Li,R Drago; J.Am.Chem.Soc.,98,5129 (1976)

1976MNa N Masleyi, B Nabivanets et al; Ukr.Khim.Zh., 42, 247 (1976)
 1975FOa D Forster; J. Am. Chem. Soc., 97, 951 (1975)
 1975LMa G Lalor, H Miller; J. Inorg. Nucl. Chem., 37, 1832 (1975)
 1975PAa M Pavelich; Inorg. Chem., 14, 982 (1975)
 1975PHa D Palmer, G Harris; Inorg. Chem., 14, 1316 (1975)
 1975RHa L Rainen, R Howard, A Kimball et al; Inorg. Chem., 14, 2752 (1975)
 1975ZFa A Zanella, P Ford; Inorg. Chem., 14, 700 (1975)
 1974MMd M Mihailov, V Mihailova, V Khalkin; J. Inorg. Nucl. Chem., 36, 115 (1974)
 1974PKa A Pyartman, N Kolobov, L Merkulova et al; Zh. Neorg. Khim., 19, 1691 (E: 920) (1974)
 1974TAb T Takamatsu; Bull. Chem. Soc. Jpn., 47, 118 (1974)
 1974TMa C Tolman, P Meakin, D Lindner, J Lesson; J. Am. Chem. Soc., 96, 2762 (1974)
 1973MOa F Monacelli; Inorg. Chim. Acta, 7, 65 (1973)
 1973NNA C Nair, H Nigam; Curr. Sci., 42, 495 (1973)
 1972FOa D Forster; Inorg. Chem., 11, 1686 (1972)
 1972MRe V Mironov, G Ragulin, I Umova et al; Zh. Fiz. Khim., 46, 257 (E: 155) (1972)
 1972RPb A Radushev, E Prokhorenko; Zh. Anal. Khim., 27, 11, 2209 (1972)
 1971ARa J Amosse, M Rubaud et al; Compt. Rend., 273C, 1708 (1971)
 1971IBa V Ivanov, A Busev, V Gresl, A Zagruzina; Zh. Anal. Khim., 26, 8, 1553 (1971)
 1971IBb B Ivanov-Emin, L Borzova et al; Zh. Neorg. Khim., 16, 2766 (E: 1474) (1971)
 1971PWb D Palmer, D Watts; Inorg. Chem., 10, 281 (1971)
 1970BPb H Bott, A Poe, K Shaw; J. Chem. Soc. (A), 1745 (1970)
 1970CHb A Cunningham, D House, H Powell; Australian J. Chem., 23, 2375 (1970)
 1970DLa C Davis, G Lalor; J. Chem. Soc. (A), 445 (1970)
 1969RSa D Robb, M Steyn, H Kruger; Inorg. Chim. Acta, 3, 383 (1969)
 1969SEa V Shlenskaya, O Efremenko et al; Izv. Akad. Nauk (USSR), 18, 1643 (1969)
 1968BIb A Busev, V Ivanov, V Gresl; Zh. Anal. Khim., 23, 10, 1570 (1968)
 1968BPb H Bott, A Poe, K Shaw; J. Chem. Soc., Chem. Comm., 793 (1968)
 1968LBb G Lalor, G Bushnell; J. Chem. Soc. (A), 2520 (1968)
 1968MOb F Monacelli; Inorg. Chim. Acta, 2, 263 (1968)
 1968STb P Staples; J. Chem. Soc. (A), 2731 (1968)
 1968TOb K Thomas, J Osborn, A Powell, G Wilkinson; J. Chem. Soc. (A), 1801 (1968)
 1967BPb H Bott, A Poe; J. Chem. Soc. (A), 205 (1967)
 1967NPb G Nickless, F Pollard, T Samuelson; Anal. Chim. Acta, 39, 37 (1967)
 1967PSb A Poe, K Shaw, M Wendt; Inorg. Chim. Acta, 1, 371 (1967)
 1967RSa W Robb, M de, V Steyn; Inorg. Chem., 6, 616 (1967)
 1966BPb H Bott, A Poe, K Shaw; J. Chem. Soc., Chem. Comm., 793 (1966)
 1966BPc A Belyaev, B Ptitsyn; Izv. Sib. Otd. Akad. Nauk SSR, 136 (1966)
 1966BPf E Bounsall, A Poe; J. Chem. Soc. (A), 286 (1966)
 1966BPg A Belyaev, B Ptitsyn; Zh. Neorg. Khim., 11, 1345 (1966)
 1966BPh A Belyaev, B Ptitsyn; Zh. Neorg. Khim., 11, 1565 (1966)
 1966SHb K Swaminathan, G Harris; J. Am. Chem. Soc., 88, 4411 (1966)
 1966SNb S Sinha, H Nigam, S Sangal; Chim. Anal., 48, 515 (1966)
 1965BPd H Bott, A Poe; J. Chem. Soc., 5931 (1965)
 1965BPe E Blasius, W Preetz; Z. Anorg. Chem., 335, 1 (1965)
 1965BPg A Belyaev, B Ptitsyn; Zh. Obshch. Khim., 35, 1887 (1965)
 1965RHa W Robb, G Harris; J. Am. Chem. Soc., 87, 4472 (1965)
 1964PHb W Plumb, G Harris; Inorg. Chem., 3, 542 (1964)
 1963WRa W Wolsey, C Reynolds, J Kleinberg; Inorg. Chem., 2, 463 (1963)
 1961CPb D Cozzi, F Pantani; J. Electroanal. Chem., 2, 72; 230 (1961)

1960C0c M Cola; Gazz.Chim.Ital.,90,1037 (1960)
1959FAa J Forrester,G Ayres; J.Phys.Chem.,63,1979 (1959)
1959GVa A Grinberg,L Vrublevskaya et al; Zh.Neorg.Khim.,4,1018 (1959)
1958CPb D Cozzi,F Pantani; J.Inorg.Nucl.Chem.,8,385 (1958)
1958MPa J van Muylder,M Pourbaix; Cebelcor Rapp.Tech.,59;62 (1958)
1956JOa C Jorgensen; Acta Chem.Scand.,10,500;518 (1956)
1952LAb W Latimer; "Oxidation Potentials",Prentice Hall,NY (1952)
1948DSa F Dwyer,H Schafer; J.Proc.Roy.Soc.,NSW,82,294 (1948)
1939LAa A Lamb; J.Am.Chem.Soc.,61,699 (1939)
1938GAa G Grube,H Autenrieth; Z.Elektrochem.,44,296 (1938)
1937GGa G Grube,B Gu; Z.Elektrochem.,43,397 (1937)
1930GFa A Grunberg,G Faermann; Z.anorg.Chem., 193,193 (1930)
1928BVa J Brondted,K Volqvartz; Z.Phys.Chem., 134,97 (1928)

EXPLANATORY NOTES

DATA Flags are :-

T Data at other TEMPERATURES
I Data with various BACKGROUNDS
H Data for THERMOCHEMICAL quantities
M Data for TERNARY Complexes

EVALUATION Flags are :-

END