

## SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 247 experiments for

(no ligands specified)

Metal : B(III)

(no references specified)

(no experimental details specified)

\*\*\*\*\*

e- HL Electron (442)  
Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	oth	none	25°C	0.0	U				1952LAb	(360) 1

K=-44.1(-870 mV)

K: B(OH)<sub>3</sub>+3H+3e=B(s)+3H<sub>2</sub>O. From thermodynamic data

\*\*\*\*\*

BrO- HL Hypobromite (870)  
Hypobromite;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	sp	NaCl	25°C	0.50M	U				1987BBa	(2389) 2

K(B(OH)<sub>4</sub>+HL=B(OH)<sub>3</sub>L)=1.83

\*\*\*\*\*

CO<sub>3</sub>-- H<sub>2</sub>L Carbonate CAS 465-79-6 (268)  
Carbonate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	sp	NaCl	25°C	0.70M	C			K <sub>1</sub> =11.44	1998MBa	(3144) 3

K(B(OH)<sub>3</sub>+HCO<sub>3</sub>=B(OH)<sub>2</sub>CO<sub>3</sub>)=2.6

\*\*\*\*\*

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	con	non-aq	20°C	100%	U				1960BGf	(4510) 4

K(BCl<sub>3</sub>POCl<sub>3</sub>=POCl<sub>2</sub>+BCl<sub>4</sub>)=-6.7Medium: POCl<sub>3</sub>(liquid)

\*\*\*\*\*

ClO- HL Hypochlorite CAS 7790-92-3 (869)  
Hypochlorite;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	sp	NaCl	25°C	0.50M	U				1987BBa	(5993) 5

K(B(OH)<sub>4</sub>+HL=B(OH)<sub>3</sub>L)=2.25

\*\*\*\*\*

F- HL Fluoride CAS 7644-39-3 (201)  
Fluoride;

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

B(III) gl oth/un 25°C 0.20M U 1979MMd (6741) 6

K3'=6.43

K4'=2.45

K3': 3HF+H3BO3=H+B(OH)F3+2H2O, K4': 4HF+H3BO3=H+BF4+3H2O.

-----  
B(III) ISE NaCl 25°C 1.0M U 1973MPb (6742) 7

K(B(OH)3+F)=-0.36

K(B(OH)3+2F+H=BF2(OH)2)=7.06

K(B(OH)3+3F+2H=BF3OH)=13.69

Kn(B(OH)4+nF=B(OH)(4-n)Fn+nOH)=-5.3(n=1); -11.6(n=2); -18.7(n=3); -27.1(n=4)

-----  
B(III) ISE NaNO3 25°C 1.0M U T H 1971GHg (6743) 8

K(B(OH)3+F)=-0.30

K(B(OH)3+2F=BF2(OH)2+OH)=-6.27

K(B(OH)3+3F=BF3OH+2OH)=-14.23

K(B(OH)3+4F=BF4+3OH)=-21.6

DH(K4)=147.7 kJ mol<sup>-1</sup>, DS=313.8 J K<sup>-1</sup> mol<sup>-1</sup>. At 35 C: values are -0.27, -6.2, -13.4, -20.8

-----  
B(III) nmr non-aq -61°C 100% U H 1965BPa (6744) 9

K(BF4+BF3=B2F7)=2.68

K(B2F7+BF3=B3F10)=0.32

Other methods:partial pressure BF3,infrared spectra. Medium: CH2Cl2

-----  
B(III) con non-aq 20°C 100% U 1961CKa (6745) 10

K4=-2.89

Medium: liquid HF, I=0 corr

-----  
B(III) sol non-aq 0°C 100% U M 1961CKa (6746) 11

K(AgBF4(s)=Ag+BF4)=-2.53

K4=2.11

Medium: liquid HF, I=0 corr.

-----  
B(III) ISE oth/un 25°C var U 1959RDa (6747) 12

Ks=-22.85

Method: H, Pb and quinhydrone electrode. Ks: KBF4(s)+3H2O=B(OH)3(s)+2H+4F+K  
By solubility K(B(OH)3(s)+3H+4F=BF4+3H2O)=20.0

-----  
B(III) dis non-aq 0°C 100% U 1958MHb (6748) 13

K4=6.6

Medium: liquid HF

-----  
B(III) sol none 25°C 0.0 U T H 1958RKb (6749) 14

Ks(KBF4(s)=K+BF4)=-2.86

$K_s = -3.79(0\text{ C}), -2.11(50\text{ C}), -1.54(70\text{ C})$ .  $DH(K_s) = 59.0\text{ kJ mol}^{-1}$ .  $K_s(\text{CsBF}_4(s)) = -3.35(0\text{ C}), -2.37(25\text{ C}), -1.25(60\text{ C})$ .  $DH = 60$

B(III) sol none 25°C 0.0 U T HM 1958RKb (6750) 15

$K(\text{CsBF}_4(s) = \text{Cs} + \text{BF}_4) = -2.37$

$I = 0$  corr.  $K_s = -3.35(0\text{ C}), -1.25(60\text{ C})$ .  $DH(K_s) = 59\text{ kJ mol}^{-1}(25\text{ C})$

B(III) EMF oth/un 15°C var U 1955RUa (6751) 16

$K(\text{BF}_2(\text{OH})_2 + \text{HF} = \text{BF}_3\text{OH} + \text{H}_2\text{O}) = 3.57$

B(III) kin oth/un 25°C var U 1951WAa (6752) 17

$K = 1.96$

$K' = 2.64$

$K: \text{BF}_2(\text{OH})_2 + \text{HF} = \text{BF}_3\text{OH} + \text{H}_2\text{O}$ .  $K': \text{BF}_3\text{OH} + \text{HF} = \text{BF}_4 + \text{H}_2\text{O}$

B(III) oth oth/un 20°C 0.02M U T 1948RSa (6753) 18

$K(\text{BF}_3\text{OH} + \text{HF} = \text{H}_2\text{O} + \text{BF}_4) = 2.57$

Method: chemical analysis, Medium: HBF<sub>4</sub>.  $K = 2.32(60, 75\text{ C}), 2.14(90\text{ C})$

B(III) oth oth/un 25°C 0.0 U 1948WAa (6754) 19

$K(\text{BF}_3\text{OH} + \text{HF} = \text{H}_2\text{O} + \text{BF}_4) = 2.64$

Methods: chemical analysis, kinetics

B(III) oth oth/un 25°C var U T H 1946RYa (6755) 20

$K(\text{BF}_3\text{OH} + \text{HF} = \text{BF}_4 + \text{H}_2\text{O}) = 2.55$

Method: chemical analysis.  $K = 2.26(80\text{ C}), 2.14(100\text{ C})$ .  $DH(K) = -13.5\text{ kJ mol}^{-1}$ ,  $DS = 4.6\text{ J K}^{-1}\text{ mol}^{-1}(25\text{ C})$

B(III) EMF none 18°C 0.0 U 1936RBa (6756) 21

$K(\text{BF}_4 + 3\text{H}_2\text{O} = \text{B}(\text{OH})_3 + 3\text{H} + 4\text{F}) = -19.4$

\*\*\*\*\*

H<sub>2</sub>O L Water CAS 7732-18-5 (6115)

Water

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

B(III) nmr non-aq 36°C 100% U 1971CBc (7586) 22

$K(\text{BF}_4 + \text{L}) = -0.5$

$K(\text{B}(\text{Ph})_4 + \text{L}) = -1$

\*\*\*\*\*

NH<sub>3</sub> L Ammonia CAS 7664-41-7 (414)

Ammonia

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

B(III) gl oth/un 23°C var U 1965RPa (9095) 23

$K(\text{H}_2\text{NBF}_3 + \text{H}) = 12$

\*\*\*\*\*

NH<sub>3</sub> L Hydroxylamine; CAS 5470-11-1 (1808)

Hydroxylamine; NH<sub>2</sub>OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	10°C	0.04M	U			K(F3BONH2+H)=7.52	1965RIa (9259)	24
*****										
NO2-			HL	Nitrite				CAS 7782-77-6	(635)	
Nitrite;										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	oth	none	25°C	0.0	C			K(H3BO3+NO2=B(OH)3NO2)=-0.49	1991MIa (9356)	25
By pH titration, K=-0.61.										
*****										
OH-			HL	Hydroxide				(57)		
Hydroxide;										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	NaClO4	25°C	0.10M	C			K(B(OH)3=B(OH)4+H)=-9.02 K(B(OH)3=B3O3(OH)4+H)=-7.20	2000KAa (11012)	26
-----										
B(III)	nmr	KCl	21°C	0.10M	U	M		K(BAL2+L)=-8.7 K(BCL2+L)=-7.9 K(BDL2+E)=0.748	1994LGA (11013)	27
Method:NMR. A:C6H4F, C:C6H3ClF; D:C6H4F; E:4-(hydroxymethyl)imidazole										
*****										
O2--			H2L	Peroxide				CAS 7772-84-1	(2813)	
Peroxide; -0.0-										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KNO3	25°C	0.10M	U			K(B(OH)3+H2L=B(OH)3HL+H)=-7.7 K(B(OH)3HL+H2L=B(OH)2(HL)2=0.3 K(B(OH)3+H2L=B(OH)2HL)=-2	1987PTa (12648)	28
-----										
B(III)	gl	none	25°C	0.0	U			K(Bi(OH)4+H2L=Bi(OH)3HL)=1.32	1956ANb (12649)	29
I=0 corr. K(Bi(OH)3HL+H2L=Bi(OH)2(HL)2+H2O)=0.21										
-----										
B(III)	vlt	KNO3	25°C	0.50M	U			K(Bi(OH)4+H2L=Bi(OH)3HL)=1.52	1955KEb (12650)	30
-----										
B(III)	gl	oth/un	25°C	0.20M	U			K(Bi(OH)4+H2L=Bi(OH)3HL)=1.5	1953EDb (12651)	31

B(III) dis oth/un 18°C var U T 1923MEa (12652) 32  
 $K(\text{Bi}(\text{OH})_4 + \text{H}_2\text{L} = \text{Bi}(\text{OH})_3\text{HL}) = 1.48$   
 $K = 1.62(0 \text{ C})$

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

-----  

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

 -----

B(III) con mixed 25°C ? U 1961BGa (16000) 33  
 $K(\text{B}(\text{HL})_4 + \text{H}) = 0.85$

medium: H2SO4.  $K(\text{average}) = 0.7$   
 \*\*\*\*\*  
 CH4O L Methyl alcohol CAS 67-56-1 (597)  
 Methanol; CH3.OH

-----  

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

 -----

B(III) EMF alc/w 20°C 100% U 1964GUa (17876) 34  
 $K(\text{B}(\text{H}-1\text{L})_3 + \text{H}-1\text{L}) = 5.62$   
 $K(\text{B}(\text{H}-1\text{L})_4 + \text{H} = \text{B}(\text{H}-1\text{L})_3 + \text{L}) = 10.98$

Method: H electrode. Medium: MeOH, 1.0 M Me4NCl  
 \*\*\*\*\*  
 C2H2O4 H2L Oxalic acid CAS 144-62-7 (24)  
 Ethanedioic acid; (COOH)2

-----  

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

 -----

B(III) nmr KNO3 25°C 0.10M U H 1994PRb (18802) 35  
 $K(\text{B}(\text{OH})_4 + \text{H}_2\text{L} = \text{B}(\text{OH})_2\text{O}_2\text{L}) = 8.20$

DH=-46 kJ mol<sup>-1</sup>, DS=4 J mol<sup>-1</sup> K<sup>-1</sup>

-----  
 B(III) gl KNO3 21°C 0.10M U 1977RBb (18803) 36  
 $K(\text{H}_3\text{BO}_3 + \text{HL} = \text{B}(\text{OH})_2\text{L} + \text{H}_2\text{O}) = 0.35$

-----  
 B(III) gl KNO3 25°C 0.10M C 1975FPb (18804) 37  
 $K(\text{Ph}(\text{B}(\text{OH})_2 + \text{H}_2\text{L} = \text{PhB}(\text{OH})\text{L} + \text{H}) = 0.51$ . Metal is phenylboronic acid.

\*\*\*\*\*  
 C2H4O2 HL Acetic acid CAS 64-19-7 (36)  
 Ethanoic acid; CH3.COOH

-----  

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

 -----

B(III) gl none 25°C 0.0 M 1991MIa (19897) 38  
 $\text{B}(\text{H}_3\text{BO}_3 + \text{L} = \text{B}(\text{OH})_3\text{L}) = -0.42$

\*\*\*\*\*  
 C2H4O3 HL Glycolic acid CAS 79-14-1 (33)  
 2-Hydroxyethanoic acid; HO.CH2.COOH

-----  

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

 -----

-----  
 B(III) nmr KNO3 25°C 0.10M U H 1994PRb (20492) 39  
 $K(B(OH)_4 + HL = B(OH)_2OH - 1L) = 5.11$   
 $K(B(OH)_2OH - 1L + HL = B(OH)_4 - 1L) = 1.0$   
 -----

B(III) gl KNO3 21°C 0.09M U I 1977RBb (20493) 40  
 $K(H_3BO_3 + L = B(OH)_2H - 1L + H_2O) = 0.17$   
 In 0.21 M NaNO3  $K(H_3BO_3 + L = B(OH)_2H - 1L + H_2O) = 0.54$   
 \*\*\*\*\*  
 C2H6O2 L Ethyleneglycol CAS 107-21-1 (924)  
 1,2-Dihydroxyethane (Ethane-1,2-diol); HO.CH2.CH2.OH  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	nmr	KNO3	25°C	0.10M	U	HM	1994PRb (22135)	41	
							$K(B(OH)_4 + L = B(OH)_2OH - 2L) = 0.15$		
							$K(B(OH)_2OH - 2L + L = B(OH)_4 - 2L) = -0.74$ , $K(B(OH)_2OH - 1A + L = B(OH)_4 - 1A - 2L) = -1.19$		
							A=2-Hydroxypropanoic acid (lactic acid)		

-----

B(III) cal NaNO3 25°C 1.0M C H 1985ARb (22136) 42  
 $DH(B(OH)_4 + L) = -5.8 \text{ kJ mol}^{-1}$ ,  $DS = -15 \text{ J K}^{-1} \text{ mol}^{-1}$ .  
 -----

B(III) gl oth/un 35°C .025M U T H 1967CBc (22137) 43  
 $K'(B(OH)_4 + L) = 0.27$   
 $K''(B(OH)_4 + 2L) = -0.05$   
 Medium: 0.025 M borax.  $K' = 0.52(0^\circ \text{C})$ ,  $0.46(13^\circ \text{C})$ ,  $0.33(25^\circ \text{C})$ ;  $DH = -11.3 \text{ kJ mol}^{-1}$   
 $DS = -33.4 \text{ J K}^{-1} \text{ mol}^{-1}$ ;  $K'' = 0.14(0^\circ \text{C})$ ,  $0.08(13^\circ \text{C})$ ,  $0.06(25^\circ \text{C})$ ,  $DH = -8.36$ ,  $DS = -25.1$   
 -----

B(III) gl KCl 25°C var U I 1967NEb (22138) 44  
 $K(B(OH)_4 + 2L = B(H - 2L)_2) = -0.007 + 1.334(\text{SQRT } I)$   
 -----

B(III) gl oth/un 25°C 0.10M U 1957RLa (22139) 45  
 $K(B(OH)_4 + L) = 0.27$   
 $K(B(OH)_4 + 2L) = -1.0$   
 \*\*\*\*\*  
 C3H4O4 H2L Malonic acid CAS 141-82-2 (79)  
 Propanedioic acid; CH2(COOH)2  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KNO3	25°C	0.10M	C	M	1976LPa (24390)	46	
							$K(PhB(OH)_2 + H_2L = PhB(OH)L + H) = -1.59$ . PhB(OH)2 is phenylboronic acid.		
							*****		
							C3H6O3 HL L-Lactic acid CAS 79-33-4 (82)		
							L-2-Hydroxypropanoic acid; CH3.CH(OH).COOH		

-----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	nmr	KNO3	25°C	0.10M	U	HM	1994PRb (25401)	47	
							$K(B(OH)_4 + HL = B(OH)_2OH - 1L) = 5.86$		

$K(B(OH)2O2H-1L+HL=B04(H-1L)2+4H)=1.79$ ,  $K(B(OH)2O2H-2A+HL=B04H-2AH-1L+4H)=4.5$   
A=1,2-Dihydroxyethane.  $K(B(OH)2O2H-2B+HL=B04H-2BH-1L)=4.9$ . B=Propan-1,2-diol

---

B(III) gl KNO3 25°C 0.10M U 1984PSb (25402) 48  
 $K(H3BO3+H2L=(HO)2BHL+H)=-2.74$   
 $K((HO)2BHL+H2L=BL2+2H2O)=1.82$

---

B(III) gl KNO3 25°C 0.10M U 1984PSd (25403) 49  
 $K(B(OH)3+L=B(OH)2H-2L+H+H2O)=-2.75$   
 $K(B(OH)2H-2L+L=B(H-2L)2+2H2O)=1.82$

---

B(III) sp NaCl ? 3.00M U 1970LNc (25404) 50  
 $K(B(OH)3+HL=B(OH)2L)=0.40$   
 $K(B(OH)3+L=B(OH)2H(-1)L)=0.78$   
 $K(B(OH)3+2L=B(H-1L)2+OH)=0.78$

Method: infrared spectra

\*\*\*\*\*

C3H8O2 L Propyleneglycol CAS 57-55-6 (2025)  
Propan-1,2-diol; CH3.CH(OH).CH2(OH)

---

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

---

B(III) nmr KNO3 25°C 0.10M U HM 1994PRb (27667) 51  
 $K(B(OH)4+L=B(OH)2O2H-2L)=0.45$   
 $K(B(OH)2O2H-2L+L=B04(H-2L)2+4H)=-0.09$ ,  $K(B(OH)2O2H-1A+L=B04H-1AH-2L)=-0.49$   
A=2-Hydroxypropanoic acid (lactic acid)

---

B(III) cal NaNO3 25°C 1.0M C H 1985ARb (27668) 52  
DH(B(OH)4+L)=-9.3 kJ mol<sup>-1</sup>, DS=-22 J K<sup>-1</sup> mol<sup>-1</sup>. DH(B(OH)4L+L)=-38.9,  
DS=-138.

---

B(III) gl oth/un 35°C 0.02M U T H 1967CBd (27669) 53  
 $K(B(OH)4+L)=0.53$   
 $K'(B(OH)4+2L)=0.37$   
Med.:0.025 borax.K=0.8(0 C),0.64(13 C),0.61(25 C); K'=0.92(0 C),0.78(13 C),  
0.59(25 C). DH(K)=-12.5 kJ mol<sup>-1</sup>, DS=-29.3 J K<sup>-1</sup> mol<sup>-1</sup>; DH(K')=-30, DS=-92

---

B(III) gl oth/un 25°C 0.10M U 1957RLa (27670) 54  
 $K(B(OH)4+L)=0.49$   
 $K(B(OH)4+2L)=0.21$

\*\*\*\*\*

C3H8O2 L Dihydroxypropan CAS 504-63-2 (130)  
Propane-1,3-diol; HO.CH2.CH2.CH2.OH

---

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

---

B(III) gl oth/un 35°C 0.02M U T H 1967CBd (27691) 55  
 $K(B(OH)4+L)=-0.02$   
 $K'(B(OH)4+2L)=-1.25$   
Med.:0.025 borax.K=0.45(0 C),0.25(13 C),0.1(25 C); K'=-0.7(0 C),-0.92(13 C),

-0.96(25 C). DH(K)=-19.2 kJ mol<sup>-1</sup>, DS=-62.7 J K<sup>-1</sup> mol<sup>-1</sup>, DH(K')=-25.9, DS=-66.8  
 \*\*\*\*\*

C3H8O2S HL 1-Thioglycerol CAS 96-27-5 (1848)  
 3-Mercapto-1,2-propanediol HS.CH2.CH(OH).CH2.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	U			1964ATb (27709)	56
K(H3BO3+HL=B(OH)2(H-1L)+H)=-7.79; K(H3BO3+2HL=B(H-1L)2+H)=-6.12									
*****									
C3H8O3	L	Glycerol						CAS 56-81-5 (2707)	
Propane-1,2,3-triol; HO.CH2.CH(OH).CH2.OH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M		K1=1.39	1986LHa (27717)	57
B(III)	cal	NaNO3	25°C	1.0M	C	H		1985ARb (27718)	58
DH(B(OH)4+L)=-10.2 kJ mol <sup>-1</sup> , DS=-9.6 J K <sup>-1</sup> mol <sup>-1</sup> . DH(B(OH)4L+L)=-28.9, DS=-92.									

B(III)	gl	oth/un	35°C	0.02M	U	T H		1967CBd (27719)	59
							K(B(OH)4+L)=1.10		
							K'(B(OH)4+2L)=1.62		
Med.:0.025 borax. K=1.36(0 C),1.24(13 C),1.15(25 C); K'=1.99(0 C),1.84(13 C),1.76(25 C). DH(K)=-12.1 kJ mol <sup>-1</sup> , DS=-16.7 J K <sup>-1</sup> mol <sup>-1</sup> , DH(K')=-16.3, DS=-20.9									

B(III)	gl	KCl	25°C	var	U			1967NEb (27720)	60
							K(B(OH)4+2L)=1.584+0.730sqrtI		

B(III)	gl	oth/un	25°C	0.10M	U			1957RLa (27721)	61
							K(B(OH)4+L)=1.21		
							K(B(OH)4+2L)=1.62		

B(III)	oth	KCl	25°C	0.10M	U			1956ANa (27722)	62
							K(B(OH)4+L)=1.56		
							K(B(OH)4+2L)=1.91		

Method: quinhydrone electrode.

\*\*\*\*\*

C4H6O6 H2L L-Tartaric acid CAS 87-69-4 (92)  
 L-Tartaric acid, L-2,3-Dihydroxybutanedioic acid; HOOC.CH(OH).CH(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	nmr	KNO3	25°C	1.50M	U			1994PRa (31196)	63
Keff(B(OH)4+L=B(OH)2O2H-1L+4H)=0.7, Keff(B(OH)2O2H-1L+L=B04(H-1L)2+4H)=-0.92									
At pH 11.5									

B(III)	gl	NaNO3	21°C	0.10M	U	I		1977RBb (31197)	64
							K(H3BO3+L=B(OH)2H-1L+H2O)=0.92		



In 0.2 M NaNO3  $K(H_3BO_3+L=B(OH)_2H-1L+H_2O)=0.65$

-----  
B(III) oth oth/un 25°C ? U 1969KPa (31198) 65  
 $K(B(OH)_3+L)=0.70$   
 $K(B(OH)_3+HL)=1.18$

Method: optical rotatory dispersion

-----  
B(III) sol oth/un 22°C ? U 1967SBg (31199) 66  
 $K(B(OH)_4+HL=BOL+OH)=6.97$   
 $K(2B(OH)_4+HL=B2O3L+OH)=14.07$

-----  
B(III) gl oth/un 20°C ? U 1965FSa (31200) 67  
 $K(B(OH)_3+H_2L=BH-1L)=0.77$   
 $K(B(OH)_3+HL=BH-2L)=1.60$   
 $K(B(OH)_3+L=BH-2LOH)=0.61$   
 $K(B(OH)_4+L=BH-2L(OH)_2)=0.77$

\*\*\*\*\*  
C4H6O6 H2L meso-Tartaric CAS 147-73-9 (91)  
meso-2,3-Dihydroxybutanedioic acid;  $HOOC.CH(OH).CH(OH).COOH$

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
B(III) nmr KNO3 25°C 1.50M U 1994PRa (31425) 68  
 $K_{eff}(B(OH)_4+L=B(OH)_2O_2H-1L+4H)=0.15$ ,  $K_{eff}(B(OH)_2O_2H-1L+L=B_2O_4(H-1L)_2+4H)=-0.96$ . At pH 11.5

\*\*\*\*\*  
C4H10O2 L Butane-2,3-diol CAS 513-85-9 (3576)  
Butane-2,3-diol;  $CH_3.CH(OH).CH(OH).CH_3$

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
B(III) gl oth/un 35°C .025M U T H 1967CBd (34666) 69  
 $K(B(OH)_4+L=B(OH)_2H-2L)=1.40$   
 $K'(B(OH)_4+2L=B(H-2L)_2)=2.10$   
Medium:borax.  $K=1.79(0\text{ C}), 1.63(13\text{ C}), 1.57(25\text{ C})$ ;  $DH=-18.0\text{ kJ mol}^{-1}$ ,  $DS=-29.3\text{ J K}^{-1}\text{ mol}^{-1}$ ;  $K'=2.60(0\text{ C}), 2.45(13\text{ C}), 2.21(25\text{ C})$ ;  $DH=-23.0$ ,  $DS=-33$

\*\*\*\*\*  
C4H10O2 L CAS 5341-95-7 (3575)  
meso-Butan-2,3-diol;  $CH_3.CH(OH).CH(OH).CH_3$

-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo  
-----  
B(III) gl oth/un 35°C .025M U T H 1967CBd (34669) 70  
 $K(B(OH)_4+L=B(OH)_2H-2L)=0.36$   
 $K'(B(OH)_4+2L=B(H-2L)_2)=0.43$   
Medium:borax.  $K=0.71(0\text{ C}), 0.51(13\text{ C}), 0.43(25\text{ C})$ ;  $DH=-14.2\text{ kJ mol}^{-1}$ ,  $DS=-42\text{ J K}^{-1}\text{ mol}^{-1}$ ;  $K'=1.11(0\text{ C}), 0.88(13\text{ C}), 0.66(25\text{ C})$ ;  $DH=-30.1$ ,  $DS=-88$

-----  
B(III) gl oth/un 25°C 0.10M U 1957RLa (34670) 71  
 $K(B(OH)_4+L=B(OH)_2H-2L)=0.54$

$$K(B(OH)_4 + 2L = B(H-2L)_2) = 0.69$$

DL- or meso- not stated

\*\*\*\*\*

C4H10O3 L CAS 623-39-2 (3577)

3-Methoxypropan-1,2-diol; CH<sub>2</sub>(OH).CH(OH).CH<sub>2</sub>.OCH<sub>3</sub>

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

-----  
B(III) gl oth/un 25°C 0.10M U 1957RLa (34706) 72

$$K(B(OH)_4 + L = B(OH)_2H-2L) = 1.28$$

$$K(B(OH)_4 + 2L = B(H-2L)_2) = 1.13$$

\*\*\*\*\*

C4H10O4 L Erythritol CAS 149-32-6 (2706)

1,2,3,4-Tetrahydroxybutane; HO.CH<sub>2</sub>.CH(OH).CH(OH).CH<sub>2</sub>.OH

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

-----  
B(III) gl KCl 25°C 0.10M M 1987VHa (34710) 73

$$K(B(OH)_4 + L) = 1.85$$

$$K(B(OH)_4 + 2L) = 2.91$$

-----  
B(III) gl KCl 25°C 0.10M M K1=1.99 1986LHa (34711) 74

\*\*\*\*\*

C5H10O2 L CAS 5057-98-7 (3605)

cis-Cyclopentane-1,2-diol; C5H8(OH)<sub>2</sub>

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

-----  
B(III) gl oth/un 35°C .025M U T H 1967CBd (40221) 75

$$K(B(OH)_4 + L = B(OH)_2H-2L) = 1.32$$

$$K'(B(OH)_4 + 2L = B(H-2L)_2) = 2.01$$

Medium:borax. K=1.65(0 C),1.49(13 C),1.42(25 C); DH=-14.6 kJ mol<sup>-1</sup>, DS=-21

J K-1 mol<sup>-1</sup>; K'=2.56(0 C),2.36(13 C),2.15(25 C); DH=-25.5,DS=-46

\*\*\*\*\*

C5H10O4 L Deoxy-Ribose CAS 533-67-5 (7470)

2-Deoxy-D-ribose, 2-Deoxy-D-erythro-pentose;

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

-----  
B(III) gl KCl 25°C 0.10M U 1979HUa (40326) 76

$$K(H_2BO_3 + L) = 3.85$$

\*\*\*\*\*

C5H10O5 L D-Arabinose CAS 10323-20-3 (3606)

D-Arabinose;

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

-----  
B(III) gl none 25°C 0.0 M K1=2.19 B2= 3.02 1979EMb (40333) 77

Metal is borate.

-----

B(III) gl KCl 25°C 0.10M U 1959ATa (40334) 78  
 $K(B(OH)_4+2L=B(H-2L)_2)=3.28$

\*\*\*\*\*

C5H10O5 L D-Xylose CAS 58-86-6 (3607)

D-Xylose;

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

B(III) gl KCl 25°C 0.10M U 1959ATa (40361) 79

$K(B(OH)_4+2L=B(H-2L)_2)=4.01$

\*\*\*\*\*

C5H10O5 L L-Arabinose CAS 5328-37-0 (1616)

L-Arabinose

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

B(III) gl KCl 25°C 0.10M M 1987VHa (40367) 80

$K(B(OH)_4+L)=2.14$

$K(B(OH)_4+2L)=2.99$

-----  
B(III) gl KCl 25°C 0.10M U 1959ATa (40368) 81

$K(B(OH)_4+2L=B(H-2L)_2)=3.55$

-----  
B(III) gl oth/un 25°C 0.10M U 1957RLa (40369) 82

$K(B(OH)_2+H_2L=BO(L))=2.11$

$K(B(OH)_2+2H_2L=BL_2)=2.83$

\*\*\*\*\*

C5H12O2 L CAS 5396-58-7 (3611)

2-Methylbutane-2,3-diol;  $CH_3.C(OH)(CH_3).CH(OH).CH_3$

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

B(III) gl oth/un 35°C .025M U T H 1967CBd (41642) 83

$K(B(OH)_4+L=B(OH)_2H-2L)=1.11$

$K'(B(OH)_4+2L=B(H-2L)_2)=2.09$

Medium:borax.  $K=1.59(0\text{ }^\circ\text{C}), 1.38(13\text{ }^\circ\text{C}), 1.26(25\text{ }^\circ\text{C})$ ;  $DH=-20.5\text{ kJ mol}^{-1}$ ,  $DS=-46$

$J\text{ K}^{-1}\text{ mol}^{-1}$ ;  $K'=2.76(0\text{ }^\circ\text{C}), 2.53(13\text{ }^\circ\text{C}), 2.32(25\text{ }^\circ\text{C})$ ;  $DH=-33.4$ ,  $DS=-67$

\*\*\*\*\*

C5H12O2 L CAS 625-69-4 (7147)

Pentane-2,4-diol;  $CH_3CH(OH)CH_2CH(OH)CH_3$

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

B(III) EMF KCl 25°C 0.10M C I  $K_1=0.50$  1995BVa (41645) 84

$K(BH+L)=-0.06$

In  $CHCl_3$ :  $K(BH+L)=-0.097$ ;  $CH_2Cl_2$ :  $K(BH+L)=-0.081$ . In  $C_6H_6$ :  $K(BH+L)=-0.131$ ;

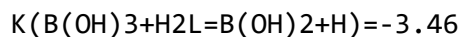
In  $CCl_4$ :  $K(BH+L)=-0.086$ . In  $BuOBu$ :  $K(BH+L)=-0.097$ . In  $DIBK$ :  $K(BH+L)=-0.08$

\*\*\*\*\*

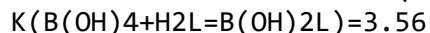
C5H12O4 H2L Pentaerythritol CAS 115-77-5 (3028)

Pentaerythritol;  $C(CH_2.OH)_4$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	U		1960ARa (41661) K(B(OH) <sub>4</sub> +L=B(OH) <sub>2</sub> H-2L)=2.699 K(B(OH) <sub>4</sub> +2L=B(H-2L) <sub>2</sub> )=3.651		85
B(III)	gl	oth/un	25°C	0.10M	U		1957RLa (41662) K(BO(OH) <sub>2</sub> +H <sub>2</sub> L=BO <sub>2</sub> L)=2.38 K(BO(OH) <sub>2</sub> +2H <sub>2</sub> L=BL <sub>2</sub> )=3.05		86
*****									
C5H12O5		L		Arabitol			CAS 488-82-4 (5403)		
Arabitol; HO.CH <sub>2</sub> .HOCH.HCOH.HCOH.CH <sub>2</sub> .OH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	none	25°C	0.0	M		K1=2.66 B2= 4.58	1979EMb (41675)	87
Metal is borate.									
*****									
C5H12O5		L		Ribitol			CAS 488-81-3 (3009)		
Ribitol, Adonitol; HO.CH <sub>2</sub> .HCOH.HCOH.HCOH.CH <sub>2</sub> .OH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	none	25°C	0.0	M	H	K1=2.38 B2= 3.50	1979EMb (41679)	88
Metal is borate. By calorimetry, DH(K1)=-16.6 kJ mol <sup>-1</sup> , DS(K1)=-5.02 J K <sup>-1</sup> mol <sup>-1</sup> ; DH(B2)=-31.4, DS(B2)=-34.									
*****									
C5H12O5		L		Xylitol			CAS 87-99-0 (2139)		
Xylitol; HO.CH <sub>2</sub> .HCOH.HOCH.HCOH.CH <sub>2</sub> .OH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	none	25°C	0.0	M		K1=3.38 B2= 4.88	1979EMb (41683)	89
Metal is borate.									
*****									
C6H4N2O6		H2L					CAS 7659-29-2 (2694)		
1,2-Dihydroxy-3,5-dinitrobenzene; (HO) <sub>2</sub> .C <sub>6</sub> H <sub>2</sub> (NO <sub>2</sub> ) <sub>2</sub>									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	sp	KCl	25°C	0.10M	U		1972HKa (42264) K(B(OH) <sub>3</sub> +H <sub>2</sub> L=B(OH) <sub>2</sub> L+H)=-1.65		90
*****									
C6H5NO4		H2L		3-Nitrocatechol			CAS 6665-98-1 (2685)		
1,2-Dihydroxy-3-nitrobenzene; O <sub>2</sub> N.C <sub>6</sub> H <sub>3</sub> (OH) <sub>2</sub>									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	sp	KCl	25°C	0.10M	U		1972HKa (42856)		91



-----  
B(III) vlt oth/un 25°C 0.10M U 1972HKd (42857) 92

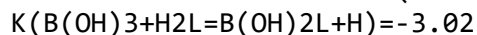


\*\*\*\*\*

C6H5NO4 H2L 4-Nitrocatechol CAS 3316-09-4 (890)  
1,2-Dihydroxy-4-nitrobenzene; O2N.C6H3(OH)2

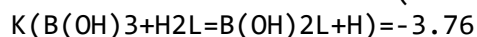
-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

-----  
B(III) gl KNO3 25°C 0.10M C 1977PBc (42914) 93

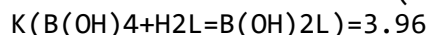


K(PhB(OH)2 + H2L = PhB(OH)L + H) = -3.82. PhB(OH)2 is phenylboronic acid.

-----  
B(III) sp KCl 25°C 0.10M U 1972HKa (42915) 94



-----  
B(III) vlt oth/un 25°C 0.10M U 1972HKd (42916) 95



-----  
B(III) gl KNO3 20°C 0.10M U 1968BHb (42917) 96

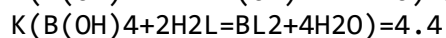
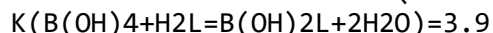


\*\*\*\*\*

C6H6O2 H2L Catechol CAS 120-80-9 (534)  
1,2-Dihydroxybenzene, pyrocatechol; HO.C6H4.OH

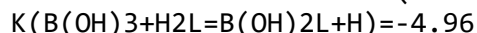
-----  
Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo

-----  
B(III) nmr oth/un 27°C var C 1979YKb (43727) 97



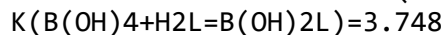
Method: 11B nmr. pH=6.5.

-----  
B(III) gl KNO3 25°C 0.10M C 1977PBc (43728) 98



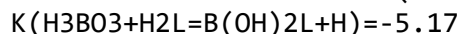
K(PhB(OH)2 + H2L = PhB(OH)L + H) = -4.33. PhB(OH)2 is phenylboronic acid.

-----  
B(III) gl KCl 45°C 0.10M U T H 1968APc (43729) 99

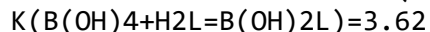


K=4.361(0 C), 3.972(25 C), 3.945(30 C), 3.843(35), 3.773(40); DH=-23.4 kJ mol<sup>-1</sup>,  
DS=-1.7 J K<sup>-1</sup> mol<sup>-1</sup>. K'=4.637(0 C), 4.263(25 C), 4.077(35 C); DH=-24.2, DS=0

-----  
B(III) gl KNO3 20°C 0.10M U 1968HBa (43730) 100



-----  
B(III) gl oth/un 35°C .025M U T H 1967CBd (43731) 101



Medium: 0.025 borax. K=3.86(0C), 3.76(13C), 3.70(25C). DH=-11.3 kJ mol<sup>-1</sup>,  
DS=33 J K<sup>-1</sup> mol<sup>-1</sup>

-----  
 B(III) gl KCl 23°C 0.10M U 1959AKa (43732) 102  
 $K(B(OH)_4+H_2L)=4.36-0.0145T$   
 $K(B(OH)_4+2H_2L)=4.61-0.0140T$

T=0-45 C

-----  
 B(III) gl oth/un 25°C 0.10M U 1957RLa (43733) 103  
 $K(B(OH)_2+H_2L=BOL)=3.89$

\*\*\*\*\*  
 C6H6O3 H3L Pyrogallol CAS 87-66-1 (696)  
 1,2,3-Trihydroxybenzene; C6H3(OH)3

-----  

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

 -----  
 B(III) EMF KCl 25°C 0.10M U 1971AKc (43951) 104  
 $K(HBO_2+HL=H+HBO_2L)=-5.05$   
 $K(HBO_2+2HL=H+H_2BO_2L_2)=-4.40$

-----  
 B(III) gl KNO3 20°C 0.10M U 1968HBa (43952) 105  
 $K(H_3BO_3+H_3L=B(OH)_2HL+H)=-4.98$

\*\*\*\*\*  
 C6H6O5S H3L CAS 7134-09-0 (3687)  
 3,4-Dihydroxybenzenesulfonic acid; (HO)2.C6H3.SO3H

-----  

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

 -----  
 B(III) gl KNO3 20°C 0.10M U 1968HBa (44281) 106  
 $K(H_3BO_3+H_2L=B(OH)_2L+H)=-4.60$

\*\*\*\*\*  
 C6H6O8S2 H4L Tiron CAS 149-45-1 (104)  
 4,5-Dihydroxybenzene-1,3-disulfonic acid; (HO)2.C6H2(SO3H)2

-----  

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

 -----  
 B(III) gl KNO3 25°C 0.10M U 1968HBa (44406) 107  
 $K(H_3BO_3+H_2L=B(OH)_2L+H)=-3.72$

-----  
 B(III) gl KCl 25°C var U I 1960NAa (44407) 108  
 $K(B(OH)_3+H_2L=B(OH)_2L+H)=-4.34+3.05SQRTI/(1+1.3SQRTI)-0.16I$   
 At I=0:  $K(B(OH)_4+H_2L)=4.90$

-----  
 B(III) gl KCl 25°C 1.0M U 1960NAf (44408) 109  
 $K(H_2L+B(OH)_3=BL(OH)_2+H)=3.20$

\*\*\*\*\*  
 C6H10O7 HL Glucuronic acid CAS 6556-12-3 (599)  
 D-Glucuronic acid;

-----  

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

 -----  
 B(III) gl KCl 25°C 0.10M M K1=1.71 1986LHa (48418) 110

\*\*\*\*\*  
 C6H10O8                      H2L      Saccharic acid      CAS 87-73-0    (1191)  
 D-2,3,4,5-Tetrahydroxy-1,6-hexanedioic acid, Glucaric acid; HOOC.(CHOH)4.COOH  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M		K1=2.16    B2=3.58	1986LHa (48468)	111

\*\*\*\*\*

C6H12O2                      L                      CAS 1792-81-0    (3657)  
 cis-1,2-Cyclohexanediol; C6H10(OH)2  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	oth/un	35°C	.025M	U T H			1967CBd (49430)	112

$$K(B(OH)_4 + L = B(OH)_2H - 2L) = 0.0$$

$$K'(B(OH)_4 + 2L = B(H - 2L)_2) = -0.5$$

Medium: borax. K=0.3(0 C), 0.0(13-25 C); DH=-16.7 kJ mol<sup>-1</sup>, DS=-42 J K<sup>-1</sup> mol<sup>-1</sup>  
 K'=0.3(0 C), 0.3(13 C), -0.2(25 C), DH=-42, DS=-168  
 \*\*\*\*\*

C6H12O5                      L      L-Rhamnose                      CAS 634-74-2    (3659)  
 6-Deoxy-L-mannose;  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	U			1959ATa (49506)	113

$$K(B(OH)_4 + 2L = B(H - 2L)_2) = 2.61$$

\*\*\*\*\*  
 C6H12O6                      L      D-Fructose                      CAS 57-48-7    (1561)  
 D-Fructose  
 -----

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KNO3	25°C	0.1M	C T H		K1=5.38	1989JJa (49538)	114

At 15 C: K1=5.49, 35 C: K1=5.26, 45 C: K1=5.13. DH(K1)=-20.9 kJ mol<sup>-1</sup>  
 -----

B(III)	cal	NaNO3	25°C	0.10M	U    H			1988ARa (49539)	115
--------	-----	-------	------	-------	--------	--	--	-----------------	-----

DH(B+L=BL)=-3 kJ mol<sup>-1</sup>; DS=59. DH(BL+L=BL2)=-33; DS=-84.  
 -----

B(III)	gl	KCl	25°C	0.10M	M			1987VHa (49540)	116
--------	----	-----	------	-------	---	--	--	-----------------	-----

$$K(B(OH)_4 + L) = 2.82$$

$$K(B(OH)_4 + 2L) = 4.97$$

B(III)	gl	none	25°C	0.0	M		K1=3.16    B2= 5.07	1979EMb (49541)	117
--------	----	------	------	-----	---	--	---------------------	-----------------	-----

Metal is borate.  
 -----

B(III)	gl	oth/un	25°C	0.03M	U T    M			1970COa (49542)	118
--------	----	--------	------	-------	----------	--	--	-----------------	-----

$$K'(B(OH)_4 + L = B(OH)_2(H - 2)L) = 3.48$$

$$K''(B(OH)_4 + 2L = B(H - 2L)_2) = 5.09$$

Medium: 0.027 borax. At 0 C: K'=3.70, K''=5.36. 13 C: K'=3.58, K''=5.33.  
 35 C: K'=3.21, K''=4.93

-----  
 B(III) gl KCl 45°C 0.10M U T H 1968APd (49543) 119  
 $K(B(OH)_4 + L = B(OH)_2H - 2L) = 2.976$   
 $K'(B(OH)_4 + 2L = B(H - 2L)_2) = 4.643$   
 $K = 4.142(0\text{ }^\circ\text{C}), 3.642(15\text{ }^\circ\text{C}), 3.416(25\text{ }^\circ\text{C}), 3.178(35\text{ }^\circ\text{C}); DH = -39.3\text{ kJ mol}^{-1}, DS = -66.4$   
 $K' = 5.109(0\text{ }^\circ\text{C}), 5.062(15\text{ }^\circ\text{C}), 4.917(25\text{ }^\circ\text{C}), 4.772(35\text{ }^\circ\text{C}); DH = -24.6, DS = 11.7$   
 -----

B(III) EMF KCl 25°C var U I 1967NEa (49544) 120  
 $K(B(OH)_4 + 2L) = 4.723 + 0.470SQRTI$   
 -----

B(III) gl KCl 25°C 0.10M U 1958ANa (49545) 121  
 $K(B(OH)_4 + 2L = B(H - 2L)_2) = 5.04$   
 -----

B(III) gl oth/un 25°C ? U 1957RLa (49546) 122  
 $K(BO(OH)_2 + 2H_2L = BL_2) = 4.98$   
 -----

\*\*\*\*\*  
 C6H12O6 L D-Galactose CAS 59-23-4 (1559)  
 D-Galactose  
 -----

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

-----

B(III) cal NaNO3 25°C 0.10M U H 1988ARa (49558) 123  
 $DH(B + L = BL) = -24.7\text{ kJ mol}^{-1}; DS = -42. DH(BL + L = BL_2) = 48.5; DS = 167.$   
 -----

B(III) gl KCl 25°C 0.10M M 1987VHa (49559) 124  
 $K(B(OH)_4 + L) = 1.99$   
 $K(B(OH)_4 + 2L) = 2.56$   
 -----

B(III) gl KCl 25°C 0.10M M K1=1.97 B2=2.52 1986LHa (49560) 125  
 -----

B(III) gl none 25°C 0.0 M K1=2.09 B2= 2.62 1979EMb (49561) 126  
 Metal is borate.  
 -----

B(III) gl oth/un 25°C 0.03M U T M 1970COa (49562) 127  
 $K'(B(OH)_4 + L = B(OH)_2(H - 2)L) = 2.24$   
 $K''(B(OH)_4 + 2L = B(H - 2L)_2) = 2.63$   
 Medium: 0.027 borax. At 0 °C: K'=2.50, K''=2.92. 13 °C: K'=2.38, K''=2.72.  
 35 °C: K'=2.19, K''=2.55  
 -----

B(III) gl KCl 25°C 0.10M U 1958ANa (49563) 128  
 $K(B(OH)_4 + 2L = B(H - 2L)_2) = 2.39$   
 -----

B(III) gl oth/un 25°C 0.10M U 1957RLa (49564) 129  
 $K(BO(OH)_2 + H_2L = BOL) = 2.10$   
 $K(BO(OH)_2 + 2H_2L = BL_2) = 2.47$   
 -----

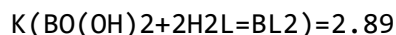
\*\*\*\*\*  
 C6H12O6 L D-Glucose CAS 492-62-6 (1560)  
 D-Glucose  
 -----

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

-----



B(III)	gl	KNO3	25°C	0.1M	C T H	K1=2.82	1989JJa (49576)	130
At 15 C: K1=2.86, 35 C: K=2.77, 45 C: K=2.71. DH(K1)=-8.6 kJ mol-1								
B(III)	cal	NaNO3	25°C	0.10M	U H		1988ARa (49577)	131
DH(B+L=BL)=-17 kJ mol-1; DS=-12.5. DH(BL+L=BL2)=15; DS=58.								
B(III)	gl	KCl	25°C	0.10M	M		1987VHa (49578)	132
						K(B(OH)4+L)=1.80		
						K(B(OH)4+2L)=3.05		
B(III)	gl	KCl	25°C	0.10M	M	K1=2.07 B2=2.80	1986LHa (49579)	133
B(III)	gl	NaClO4	25°C	0.02M	M		1981PAa (49580)	134
						K(B(OH)4+L)=1.62		
Medium: 0.015 M NaClO4, pH 8.0-9.2.								
B(III)	gl	KNO3	20°C	0.10M	M		1980MBc (49581)	135
						K(B(OH)3+2H2L=BL2+H)=-6.33		
For L=D-sorbitol, K=-3.78; L=D-dulcitol, K=-4.03; L=D-adonitol, K=-5.48.								
B(III)	gl	none	25°C	0.0	M	K1=2.11 B2= 2.87	1979EMb (49582)	136
Metal is borate.								
B(III)	gl	oth/un	25°C	0.03M	U T M		1970COa (49583)	137
						K'(B(OH)4+L=B(OH)2(H-2)L)=2.18		
						K''(B(OH)4+2L=B(H-2L)2)=2.88		
Medium: 0.027 borax. At 0 C: K'=2.41, K''=3.09. 13 C: K'=2.31, K''=3.03.								
35 C: K'=2.04, K''=2.79								
B(III)	gl	KCl	45°C	0.10M	U T H		1968APd (49584)	138
						K(B(OH)4+L=B(OH)2H2L)=1.978		
						K'(B(OH)4+2L=B(H-2L)2)=2.407		
K=2.305(0 C),2.071(15 C),2.022(25 C),1.985(35 C); DH=-5.4 kJ mol-1, DS=20.1;								
K'=2.894(0 C),2.750(15 C),2.633(25 C),2.560(35 C); DH=-19.2, DS=-14.2								
B(III)	gl	oth/un	35°C	.025M	U T H		1967CBd (49585)	139
						K(B(OH)4+L=B(OH)2H-2L)=2.10		
						K'(B(OH)4+2L=B(H-2L)2)=2.95		
Medium:borax. K=2.33(0 C), 2.24(13 C), 2.13(25 C); DH=-14.6 kJ mol-1								
DS=-8.4 J K-1 mol-1; K'=2.95(0 C), 2.95(13 C), 2.94(25 C), DH=-0.6, DS=54.3								
B(III)	EMF	KCl	25°C	var	U I		1967NEa (49586)	140
						K(B(OH)4+2L)=2.376+1.073SQRTI		
B(III)	gl	KCl	25°C	0.10M	U		1958ANa (49587)	141
						K(B(OH)4+2L=B(H-2L)2)=2.86		
B(III)	gl	oth/un	25°C	0.10M	U		1957RLa (49588)	142
						K(BO(OH)2+H2L=BOL)=1.90		



\*\*\*\*\*

C6H12O6                      L      D-Mannose                      CAS 3458-28-4    (1562)  
D-Mannose

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	cal	NaNO3	25°C	0.10M	U	H			1988ARa (49600)	143
DH(B+2L=BL2)=-6.81 kJ mol-1; DS=61.5.										
B(III)	gl	KCl	25°C	0.10M	M				1987VHa (49601)	144
								K(B(OH)4+L)=2.01		
								K(B(OH)4+2L)=2.74		
B(III)	gl	none	25°C	0.0	M			K1=1.76    B2= 2.60	1979EMb (49602)	145
Metal is borate.										
B(III)	gl	oth/un	25°C	0.03M	U	T   M			1970COa (49603)	146
								K'(B(OH)4+L=B(OH)2(H-2)L)=2.01		
								K''(B(OH)4+2L=B(H-2L)2)=2.66		
Medium: 0.027 borax. At 0 C: K'=2.03, K''=3.01. 13 C: K'=2.02, K''=2.84.										
35 C: K'=2.00, K''=2.64										
B(III)	gl	KCl	25°C	0.10M	U				1958ANa (49604)	147
								K(B(OH)4+2L=B(H-2L)2)=4.52		
B(III)	gl	oth/un	25°C	0.10M	U				1957RLa (49605)	148
								K(BO(OH)2+H2L=BOL)=1.70		
								K(BO(OH)2+2H2L=BL2)=2.69		

\*\*\*\*\*

C6H12O6                      L      Sorbose                      CAS 87-79-6    (930)  
L(-)-Sorbose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	cal	NaNO3	25°C	0.10M	U	H			1988ARa (49612)	149
DH(B+2L=BL2)=-25.15 kJ mol <sup>-1</sup> ; DS=26.8.										
B(III)	gl	KCl	25°C	0.10M	U				1959ATa (49613)	150
								K(B(OH)4+2L=B(H-2L)2)=5.80		

\*\*\*\*\*

C6H12O6                      L      Inositol                      CAS 87-89-8    (2285)  
myo-Inositol, meso-Inositol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K1=1.57	1986LHa (49636)	151
B(III)	gl	KCl	25°C	0.10M	U				1967FAa (49637)	152
								K(B(OH)4+L=B(OH)2H-2L)=1.637		

C6H12O7 HL Gluconic acid CAS 526-95-4 (904)  
D-Gluconic acid, 2,3,4,5,6-Pentahydroxyhexanoic acid; HO.CH2(CHOH)4.COOH

C6H13NO6 HL CAS 84518-56-9 (4387)  
2-Amino-2-deoxy-D-gluconic acid;

Metal is B(OH)<sub>3</sub>. K(BH-2L<sub>2</sub>)=14.34.  
Also data for ternary species B(OH)<sub>3</sub>ML, M = Ni, Zn, Cd, Pb.

C6H14O2 L CAS 76-09-5 (3661)  
2,3-Dimethylbutane-2,3-diol; (CH3)2.C(OH).C(OH)(CH3)2

Medium:borax. K=1.38(0 C), 1.28(13 C), 1.04(25 C); DH=-29.7 kJ mol<sup>-1</sup>, DS=-79.4 J K<sup>-1</sup> mol<sup>-1</sup>; K'=2.79(0 C),2.60(13 C),2.33(25 C); DH=-37.6,DS=-83.6

C6H14O6	L	D-Dulcitol	CAS 608-66-2	(3663)
D-Galactitol;				

B(III)      gl    KCl      25°C 0.10M U      1959ARa (51060) 157  
 $K(B(OH)_4 + 2L = B(H-2L)_2) = 5.23$

C6H14O6                      L            D-Mannitol                      CAS 69-65-8    (3664)  
D-Mannitol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	cal	NaNO3	25°C	1.0M	C	H			1985ARb (51071)	158

DH(B(OH)<sub>4</sub>+L)=-19.7 kJ mol<sup>-1</sup>, DS=-7.9 J K<sup>-1</sup> mol<sup>-1</sup>. DH(B(OH)<sub>4</sub>L+L)=-23.4, DS=-50.

-----  
B(III) cal oth/un 25°C dil C H 1977EFa (51072) 159

K(B(OH)<sub>4</sub>+L=B(OH)<sub>2</sub>L+2H<sub>2</sub>O)=3.03

K(B(OH)<sub>2</sub>L+L=BL<sub>2</sub>+2H<sub>2</sub>O)=2.05

Self medium, 0.027 M borate, 0.01-0.09 M mannitol. DH(B(OH)<sub>4</sub>+L)=-18.6 kJ mol<sup>-1</sup>, DS(B(OH)<sub>4</sub>+L)=-4.6 J K<sup>-1</sup> mol<sup>-1</sup>; DH(B(OH)<sub>2</sub>L+L)=-19.9, DS=-27.

-----  
B(III) oth KCl 25°C 0.10M U 1973KAa (51073) 160

K(B(OH)<sub>4</sub>+L=B(OH)<sub>2</sub>H-2L)=2.98

K(B(OH)<sub>3</sub>+2L=B(H-2L)<sub>2</sub>+H)=-3.91

K(2B(OH)<sub>3</sub>+L=B<sub>2</sub>(OH)<sub>2</sub>H-2L)=2.0

Method: potentiostatic titration. K(B(OH)<sub>2</sub>+2L=B(H-1L)(H-2L))=-0.21

K(2B(OH)<sub>4</sub>+L=B<sub>2</sub>(OH)<sub>4</sub>(H-2L))=4.41

-----  
B(III) gl NaClO<sub>4</sub> 25°C 3.00M U K<sub>1</sub>=-0.14 1973PAb (51074) 161

K<sub>1</sub> also measured by polarimetry. K(B(OH)<sub>3</sub>+nL+H<sub>2</sub>O=B(OH)<sub>4</sub>Ln+H)=-6.00 (n=1), (n=2)=-4.10; K(2B(OH)<sub>3</sub>+nL+H<sub>2</sub>O=(H-2)(B(OH)<sub>3</sub>)<sub>2</sub>Ln+2H)(n=1)=-13.61, (n=2)=-10.76

-----  
B(III) EMF KCl 25°C 3.00M U 1972AAa (51075) 162

K(H<sub>3</sub>BO<sub>3</sub>+L)=-0.22

K(H<sub>3</sub>BO<sub>3</sub>L=H<sub>2</sub>BO<sub>3</sub>L+H)=-6.04

K(H<sub>3</sub>BO<sub>3</sub>L+L=H<sub>2</sub>BO<sub>3</sub>L<sub>2</sub>+H)=-4.07

-----  
B(III) gl KCl 45°C 0.10M U T H 1968APd (51076) 163

K(B(OH)<sub>4</sub>+L=B(OH)<sub>2</sub>H-2L)=3.398

K'(B(OH)<sub>4</sub>+2L=B(H-2L)<sub>2</sub>)=4.551

K=4.21(0C), 4.00(25C), 3.62(40C); DH=3.3(0C), -16.7(15C), -32.2(25C), -49.7(35C), -69.8(45C)kJmol<sup>-1</sup>. K'=5.408(0C), 4.888(25C), 4.610(35C); DH=-31.8(25C)

-----  
B(III) gl oth/un 35°C .025M U T H 1967CBd (51077) 164

K(B(OH)<sub>4</sub>+L=B(OH)<sub>2</sub>H-2L)=2.90

K'(B(OH)<sub>4</sub>+2L=B(H-2L)<sub>2</sub>)=5.05

Medium:borax. K=3.62(0 C), 3.36(13 C), 3.04(25 C); DH=-33.9 kJ mol<sup>-1</sup>, DS=-54.3 J K<sup>-1</sup> mol<sup>-1</sup>; K=5.43(0 C), 5.31(13 C), 5.14(25 C); DH=-18.8, DS=37.6

-----  
B(III) gl KCl 25°C var U 1967NEb (51078) 165

K(B(OH)<sub>4</sub>+2L)=4.225+0.554SQRTI

-----  
B(III) gl KCl 25°C 2.0M U I 1955ANa (51079) 166

K(H<sub>3</sub>BO<sub>3</sub>+L=B(OH)<sub>2</sub>H-2L+H)=-5.13

K'(H<sub>3</sub>BO<sub>3</sub>+2L=B(H-2L)<sub>2</sub>+H)=-4.29

K(H<sub>3</sub>BO<sub>3</sub>+L)=-5.22(I=0), -5.10(I=0.1), -5.02(I=0.4)

K'(H<sub>3</sub>BO<sub>3</sub>+2L)=-4.36(I=0), -4.18(I=0.1), -4.15(I=0.4)

-----  
B(III) gl KCl 25°C 0.10M U 1949RCa (51080) 167

K(H<sub>3</sub>BO<sub>3</sub>+2L=B(H<sub>2</sub>L)<sub>2</sub>+H)=-4.00

\*\*\*\*\*

C6H14O6

L Glucitol

CAS 50-70-4 (2878)

D-Sorbitol;

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

B(III)	gl	oth/un	25°C	0.01M	U				1969Kta (51095)	168
--------	----	--------	------	-------	---	--	--	--	-----------------	-----

K(B(OH)4+L)=2.79

K(B(OH)4+2L)=4.98

Medium: 0.01 M borax

B(III)	gl	KCl	25°C	var	U				1967NEb (51096)	169
--------	----	-----	------	-----	---	--	--	--	-----------------	-----

K(B(OH)4+2L)=4.533+1.341SQRTI

B(III)	gl	KCl	25°C	0.10M	U				1959ARa (51097)	170
--------	----	-----	------	-------	---	--	--	--	-----------------	-----

K(B(OH)4+2L=B(H-2L)2)=5.65

B(III)	oth	oth/un	?	?	U				1952TOa (51098)	171
--------	-----	--------	---	---	---	--	--	--	-----------------	-----

K(B(OH)4+L)=2.75

K(B(OH)4+2L)=5.06

B(III)	gl	oth/un	24°C	0.10M	U				1949DOa (51099)	172
--------	----	--------	------	-------	---	--	--	--	-----------------	-----

K(B(OH)4+L)=2.5

K(B(OH)4+2L)=4.7

Medium: 0.008-0.2, boric acid

B(III)	gl	KCl	25°C	0.10M	U				1949RCa (51100)	173
--------	----	-----	------	-------	---	--	--	--	-----------------	-----

K(B(OH)3+2L+H2O=B(OH)4L2+H)=-4.0

\*\*\*\*\*

C7H5NO5                      H2L      Nitrosalicylic      CAS 85-38-1      (1416)

2-Hydroxy-3-nitrobenzoic acid; HO.C6H3(NO2).COOH

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

B(III)	sp	NaCl04	25°C	0.10M	C	T			1988LTb (52973)	174
--------	----	--------	------	-------	---	---	--	--	-----------------	-----

K(B(OH)3+L=B(OH)2L+OH)=-3.53

\*\*\*\*\*

C7H5NO5                      H2L      Nitrosalicylic      CAS 619-19-2      (1288)

2-Hydroxy-4-nitrobenzoic acid; HO.C6H3(NO2).COOH

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

B(III)	sp	NaCl04	25°C	0.10M	C				1988LTb (52986)	175
--------	----	--------	------	-------	---	--	--	--	-----------------	-----

K(B(OH)3+L=B(OH)2L+OH)=-2.11

\*\*\*\*\*

C7H5NO5                      H2L      Nitrosalicylic      CAS 96-97-9      (148)

2-Hydroxy-5-nitrobenzoic acid; HO.C6H3(NO2).COOH

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

B(III)	sp	NaCl04	25°C	0.10M	C				1988LTb (53040)	176
--------	----	--------	------	-------	---	--	--	--	-----------------	-----

K(B(OH)3+L=B(OH)2L+OH)=-3.19

\*\*\*\*\*  
 C7H5NO5                      H2L      Nitrosalicylic      CAS 601-99-0    (2682)  
 2-Hydroxy-6-nitrobenzoic acid; HO.C6H3(NO2).COOH

-----  

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
-----										
B(III)	sp	NaClO4	25°C	0.10M	C				1988LTb (53060)	177
									$K(B(OH)_3 + L = B(OH)_2L + OH) = -4.40$	

\*\*\*\*\*  
 C7H6O                                      L                                      CAS 100-52-7    (5638)  
 Benzaldehyde;

-----  

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
-----										
B(III)	cal	non-aq	25°C	100%	U	H			1984AGa (53542)	178
Medium: CH2Cl2. DH1=-74.9 kJ mol <sup>-1</sup>										
Data also for B(III) complexes of seven 4-substituted benzaldehydes.										

\*\*\*\*\*  
 C7H6O3                                      H2L      Salicylic acid      CAS 69-72-7    (14)  
 2-Hydroxybenzoic acid, Salicylic acid; HO.C6H4.COOH

-----  

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
-----										
B(III)	sp	NaClO4	25°C	0.10M	C				1988LTb (54149)	179
									$K(B(OH)_3 + L = B(OH)_2L + OH) = -0.68$	

-----  

B(III)	sp	NaCl	25°C	0.10M	U	T			1979QDa (54150)	180
									$K(B(OH)_3 + HL = B(OH)_2L + H_2O) = 1.03$	
5 C: K=1.37, 15 C: K1=1.19										

-----  

B(III)	gl	KNO3	20°C	0.10M	U		T		1978MBb (54151)	181
									$K(H_3BO_3 + HL = B(OH)_2L + H_2O) = 1.23$	

-----  

B(III)	kin	NaCl	25°C	0.10M	C				1977QUa (54152)	182
									$K(H_3BO_3 + HL = H_2BO_2L + H_2O) = 1.026$	
Medium pH=5.34. Method: stop flow spectrophotometry.										

-----  

B(III)	gl	KNO3	25°C	0.10M	U				1969HHa (54153)	183
									$K(H_3BO_3 + H_2L = BL(OH)_2 + H) = -1.62$	
									$K(H_3BO_3 + 2H_2L = BL_2 + H) = 0.7$	

\*\*\*\*\*  
 C7H6O3                                      H2L                                      CAS 139-85-5    (881)  
 3,4-Dihydroxybenzaldehyde, protocatechuic aldehyde; C6H3(OH)2.CHO

-----  

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
-----										
B(III)	gl	KCl	25°C	0.10M	U				1968AOa (54354)	184
									$K(B(OH)_4 + H_2L) = 5.15$	

\*\*\*\*\*  
 C7H6O4                                      H3L      Protocatechuic      CAS 99-50-3    (875)

3,4-Dihydroxybenzoic acid; C<sub>6</sub>H<sub>3</sub>(OH)<sub>2</sub>.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	U			1968AVa (54662)	185
							K(H <sub>3</sub> BO <sub>3</sub> +H <sub>2</sub> L=B(OH) <sub>2</sub> L+H)=5.01		

\*\*\*\*\*

C <sub>7</sub> H <sub>6</sub> O <sub>5</sub>		H <sub>4</sub> L		Gallic acid		CAS 149-91-7	(446)		
3,4,5-Trihydroxybenzoic acid; C <sub>6</sub> H <sub>2</sub> (OH) <sub>3</sub> .COOH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	EMF	KCl	25°C	0.10M	U			1969AVc (54750)	186
							K(HBO <sub>2</sub> +H <sub>3</sub> L=HBO <sub>2</sub> (H <sub>2</sub> L)+H)=-8.87		

\*\*\*\*\*

C <sub>7</sub> H <sub>6</sub> O <sub>6</sub> S		H <sub>3</sub> L				CAS 585-42-2	(6136)		
2-Hydroxy-4-sulphobenzoic acid, 4-sulfosalicylic acid; HO.C <sub>6</sub> H <sub>3</sub> (COOH)(HSO <sub>3</sub> )									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KNO <sub>3</sub>	20°C	0.30M	U			1978MBb (54803)	187
							K(H <sub>3</sub> BO <sub>3</sub> +HL=B(OH) <sub>2</sub> L+H <sub>2</sub> O)=0.98		

\*\*\*\*\*

C <sub>7</sub> H <sub>7</sub> NO <sub>3</sub>		H <sub>2</sub> L				CAS 89-73-6	(204)		
2-Hydroxybenzohydroxamic acid (salicylhydroxamic acid); HO.C <sub>6</sub> H <sub>4</sub> .CO.NHOH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	U			1970BMe (55587)	188
							K(H <sub>3</sub> BO <sub>3</sub> +HL=B(OH) <sub>2</sub> L)=4.5		

\*\*\*\*\*

C <sub>7</sub> H <sub>7</sub> NO <sub>3</sub>		H <sub>2</sub> L				(1112)			
4-Aminosalicylic acid; H <sub>2</sub> N.C <sub>6</sub> H <sub>3</sub> (OH).COOH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KNO <sub>3</sub>	20°C	0.10M	U			1978MBb (55636)	189
							K(H <sub>3</sub> BO <sub>3</sub> +HL=B(OH) <sub>2</sub> L+H <sub>2</sub> O)=1.29		

B(III)	gl	KNO <sub>3</sub>	30°C	0.10M	M			1978MBb (55637)	190
							K(H <sub>3</sub> BO <sub>3</sub> +HL=B(OH) <sub>2</sub> L+H <sub>2</sub> O)=1.31		

\*\*\*\*\*

C <sub>7</sub> H <sub>7</sub> NS		L		Thiobenzamide		CAS 2227-79-4	(1660)		
Thiobenzamide; C <sub>6</sub> H <sub>5</sub> .CS.NH <sub>2</sub>									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	sp	non-aq	25°C	100%	U			1977SWa (55703)	191
							K(BF <sub>3</sub> +L)=1.08		

Medium: Et<sub>2</sub>O

\*\*\*\*\*  
 C7H8N2O2                      HL      Salicylic hydra    CAS 936-02-7    (2646)  
 2-Hydroxybenzoic acid hydrazide; HO.C6H4.CO.NH.NH2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	U			1970BMe (55872)	192
							$K(H_3BO_3+L=B(OH)_2+H)=2.5$		

\*\*\*\*\*  
 C7H8O2                      H2L      Methylcatechol    CAS 452-86-8    (525)  
 1,2-Dihydroxy-4-methylbenzene; CH3.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KNO3	25°C	0.10M	C			1977PBc (56062)	193
							$K(B(OH)_3+H_2L=B(OH)_2L+H)=-5.20$		
							$K(PhB(OH)_2+H_2L=PhB(OH)L+H)=-4.52$ . PhB(OH) <sub>2</sub> is phenylboronic acid.		

\*\*\*\*\*  
 C7H14O6                      L                      CAS 1824-94-8    (3741)  
 Methyl α-D-galactopyranoside;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	oth	oth/un	30°C	.105M	U			1964MGa (57885)	194
							$K(B(OH)_4+L)=2.00$		
							$K(B(OH)_4+2L)=2.60$		

Method: refractive index and optical rotation.  
 \*\*\*\*\*  
 C7H14O6                      L      Me D-Trehalose    CAS 97-30-3    (3739)  
 Methyl α-D-glucopyranoside;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	nmr	NaCl	25°C	0.10M	C			2003MYb (57886)	195
							$K(B(OH)_4+L)=-0.80$		
							$K'(B(OH)_4+L)=0.58$		
							$K''(B(OH)_4+2L)=0.23$		

Method: 11B nmr. K: (α,β complex), K': (α,γ) complex,  
 K'': (α,γ)(α,γ) complex.

B(III)	nmr	NaCl	22°C	0.10M	C			1996YMa (57887)	196
							$K(B(OH)_4+L)=0.46$		
							$K(B(OH)_4L+L)=-0.045$		

Medium: 0.10 M NaCl, pH 9.0. Data are for α, γ diol.  
 For the α, β diol  $K(B(OH)_4+L)=-0.74$

B(III)	gl	oth/un	25°C	var	U			1965LAa (57888)	197
							$K(H_3BO_3+L=B(OH)_2(H_2L)+H)=-9.2$		

\*\*\*\*\*  
 C7H14O6                      L                      CAS 617-04-9    (3740)



Methyl  $\alpha$ -D-mannopyranoside;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	nmr	NaCl	25°C	0.10M	C			K(B(OH) <sub>4</sub> +L)=1.28 K'(B(OH) <sub>4</sub> +2L)=0.98 K''(B(OH) <sub>4</sub> +2L)=1.69 K'''(B(OH) <sub>4</sub> +L)=0.64	2003MYb (57889)	198

Method: 11B nmr. K: ( $\alpha$ , $\beta$  complex), K': ( $\alpha$ , $\beta$ )( $\alpha$ , $\gamma$ ) complex, K'': ( $\alpha$ , $\beta$ )( $\alpha$ , $\beta$ ) complex, K''': ( $\alpha$ , $\gamma$ ) complex.

B(III)	gl	oth/un	25°C	var	U			K(H <sub>3</sub> BO <sub>3</sub> +L=B(OH) <sub>2</sub> (H <sub>2</sub> L)+H)=-8 L)H <sub>3</sub> BO <sub>3</sub> +2L=B(H <sub>2</sub> L) <sub>2</sub> +H)=-7.2	1965LAa (57890)	199
--------	----	--------	------	-----	---	--	--	---	-----------------	-----

B(III)	oth	oth/un	30°C	.105M	U			K(B(OH) <sub>4</sub> +L)=1.7 K(B(OH) <sub>4</sub> +2L)=2.78	1964MGa (57891)	200
--------	-----	--------	------	-------	---	--	--	--	-----------------	-----

Method: refractive index and optical rotation.

\*\*\*\*\*

C8H6O4	H2L	Phthalic acid	CAS 88-99-3	(113)
Benzene-1,2-dicarboxylic acid; C <sub>6</sub> H <sub>4</sub> (COOH) <sub>2</sub>				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	none	25°C	0.0	M			B(H <sub>3</sub> BO <sub>3</sub> +L=B(OH) <sub>3</sub> L)=-0.07	1991MIa (58945)	201

\*\*\*\*\*

C8H10O2	L		CAS 7138-28-5	(3199)
Phenylethane-1,2-diol; C <sub>6</sub> H <sub>5</sub> .CH(OH).CH <sub>2</sub> .OH				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	oth/un	25°C	0.10M	U			K(BO(OH) <sub>2</sub> +H <sub>2</sub> L)=0.87 K(BO(OH) <sub>2</sub> +2H <sub>2</sub> L)=0.85	1957RLa (60835)	202

\*\*\*\*\*

C8H11NO2	H2L	Dopamine	CAS 579-59-9	(251)
2-(3',4'-Dihydroxyphenyl)ethylamine; (HO) <sub>2</sub> C <sub>6</sub> H <sub>3</sub> .CH <sub>2</sub> .CH <sub>2</sub> .NH <sub>2</sub>				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K <sub>1</sub> =4.86	1974AWa (61076)	203

\*\*\*\*\*

C8H11NO3	H2L	Noradrenaline	CAS 138-65-8	(253)
Norepinephrine, 3,4-Dihydroxyphenylethanolamine; (HO) <sub>2</sub> C <sub>6</sub> H <sub>3</sub> .CH(CH <sub>2</sub> .NH <sub>2</sub> ).OH				

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

B(III) EMF KCl 25°C 0.10M U 1971AVa (61161) 204  
K(HBO2+H2L=H2BO2L+H)=-4.74

Constants quoted for L isomer. Kor DL-isomer, K=-4.89

\*\*\*\*\*

C8H16O6 L CAS 7468-45-3 (3808)

Methyl-4-O-methyl-a-D-mannopyranoside;

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

B(III) oth oth/un 30°C .105M U 1964MGa (62736) 205

K(B(OH)4+L=B(OH)2H-2L)=1.5

K(B(OH)4+2L=B(H-2L)2)=3.5

Method: refractive index, optical rotation.

\*\*\*\*\*

C8H16O6 L CAS 99745-67-2 (3809)

Methyl-4-O-methyl-b-D-mannopyranoside;

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

B(III) oth oth/un 30°C .105M U 1964MGa (62737) 206

K(B(OH)4+L=B(OH)2H-2L)=0.3

K(B(OH)4+2L=B(H-2L)2)=2.60

Method: refractive index, optical rotation.

\*\*\*\*\*

C9H11NO4 H3L DOPA CAS 59-92-7 (5)

2-Amino-3-(3,4-dihydroxyphenyl)propanoic acid;H2NCH(CH2C6H3(OH)2)COOH

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

B(III) nmr oth/un 27°C var C 1979YKb (66394) 207

K(B(OH)4+H2L=B(OH)2L+2H2O)=4.3

K(B(OH)4+2H2L=BL2+4H2O)=5.0

Method: 11B nmr. pH=6.5.

\*\*\*\*\*

C9H13NO3 H2L (-)Adrenaline CAS 51-43-4 (252)

4-(1-Hydroxy-2-(methylamino)ethyl)-1,2-dihydroxybenzene,

Epinephrine;CH3NHCH(OH)C6H3(OH)2

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

B(III) gl KCl 25°C 0.10M U 1966ATd (66858) 208

K(H3BO3+H2L=B(OH)2L+H)=-4.67

K(H3BO3+2H2L=BL2+H)=-3.70

\*\*\*\*\*

C10H8O2 H2L CAS 92-44-4 (1658)

2,3-Dihydroxynaphthalene;

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

B(III) gl KNO3 20°C 0.10M U 1968HBa (69764) 209

$K(H_3BO_3 + H_2L = B(OH)_2L + H) = -4.13$

\*\*\*\*\*

C10H8O5S                      H3L      DHNSA                      (877)  
2,3-Dihydroxynaphthalene-6-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	EMF	KCl	25°C	0.10M	U			1971SBd (69837)	210
								$K(HBO_2 + H_2L = H_2LBO_2 + H) = -3.76$	

B(III)	gl	KNO3	25°C	0.10M	U			1968HBa (69838)	211
								$K(H_3BO_3 + H_2L = B(OH)_2L + H) = -3.98$	

\*\*\*\*\*

C10H8O8S2                      H4L      Chromotropic ac      CAS 148-25-4      (1875)  
1,8-Dihydroxynaphthalene-3,6-disulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	nmr	oth/un	24°C	0.10M	U			2000SMb (69927)	212
								$K(B(OH)_3 + H_2L = B(OH)_2L + H) = -1.57$	
								$K(B(OH)_3 + 2H_2L = BL_2 + H) = 2.35$	

Method: 11B nmr.

B(III)	gl	KNO3	30°C	0.10M	M			1978MBb (69928)	213
								$K(H_3BO_3 + HL = B(OH)_2L + H_2O) = -0.07$	

B(III)	gl	KNO3	20°C	0.10M	U			1967BHb (69929)	214
								$K(H_3BO_3 + H_2L = BL(OH)_2 + H) = -1.55$	
								$K(H_3BO_3 + 2H_2L = BL_2 + H) = -2.4$	

\*\*\*\*\*

C10H10O2                      HL      Benzoylacetone      CAS 93-91-4      (197)  
1-Phenylbutane-1,3-dione; C6H5.CO.CH2.CO.CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	oth	oth/un	low		?	U		1971GMb (70706)	215
								$K(H_3BO_3 + HL = H_3BO_3.HL) = 5.15$	
								$K(H_3BO_3 + 2HL = H_3BO_3(HL)_2) = 8.38$	

Medium: glassy ether-conc. H2SO4 at -196 C. Method: phosphorescence

B(III)	oth	oth/un	low		?	U		1969MGd (70707)	216
								$K(H_3BO_3 + HL = H_3BO_3.HL) = 5.15$	
								$KH_3BO_3 + 2HL = H_3BO_3(HL)_2 = 7.50$	

Medium: glassy ether-conc. H2SO4 at -196 C. Method: phosphorescence

\*\*\*\*\*

C10H14N2O                      L                      CAS 67402-02-2      (6298)  
N-Trimethylammonio benzamidate;

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

B(III) cal non-aq 25°C 100% U H 1978GMe (72070) 217  
 Medium: CH<sub>2</sub>Cl<sub>2</sub>. DH(BF<sub>3</sub>L)=-116.0 kJ mol<sup>-1</sup>. Data also for related ligands

\*\*\*\*\*

C10H17NO L CAS 31039-88-0 (5637)

3-Dimethylamino-5,5-dimethylcyclohex-2-enone;

---

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

---

B(III) cal non-aq 25°C 100% U H 1983AGa (74958) 218

DH(BF<sub>3</sub>+L=BF<sub>3</sub>L)=-132.4 kJ mol<sup>-1</sup> in dichloromethane.

Data also for B(III) complexes of 15 other dimethylcyclohex-2-enones.

\*\*\*\*\*

C11H8O3 H2L CAS 86-48-6 (1129)

1-Hydroxy-2-naphthoic acid;

---

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

---

B(III) gl KNO<sub>3</sub> 30°C 0.10M M 1978MBb (77006) 219

K(H<sub>3</sub>BO<sub>3</sub>+HL=B(OH)2L+H<sub>2</sub>O)=1.31

\*\*\*\*\*

C11H8O3 H2L CAS 2083-08-1 (1131)

2-Hydroxy-1-naphthoic acid;

---

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

---

B(III) gl KNO<sub>3</sub> 30°C 0.10M M 1978MBb (77059) 220

K(H<sub>3</sub>BO<sub>3</sub>+HL=B(OH)2L+H<sub>2</sub>O)=1.83

\*\*\*\*\*

C11H17NO<sub>3</sub> H2L Isoproternol CAS 949-36-0 (2671)

N-Isopropyl-DL-noradrenaline; (HO)2C<sub>6</sub>H<sub>3</sub>.CH(OH)CH<sub>2</sub>.NCH(CH<sub>3</sub>)<sub>2</sub>

---

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

---

B(III) gl KCl 25°C 0.10M M K<sub>1</sub>=4.81 1976AWa (79160) 221

\*\*\*\*\*

C12H16O6 L CAS 1464-44-4 (3960)

Phenyl beta-D-glucopyranoside;

---

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

---

B(III) gl oth/un 25°C var U 1965LAa (81692) 222

K(H<sub>3</sub>BO<sub>3</sub>+L=H<sub>2</sub>BO<sub>3</sub>L+H)=-8

\*\*\*\*\*

C12H22O11 L Turanose CAS 547-25-1 (2701)

3-O-D-Glucopyranosyl-D-fructose;

---

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

---

B(III) gl KCl 25°C 0.10M M K<sub>1</sub>=1.91 B<sub>2</sub>=2.47 1986LHa (82865) 223

\*\*\*\*\*

C12H22O11 L alpha-Lactose CAS 5989-81-1 (2486)  
4-D-Beta-D-Galactopyranosyl-alpha-D-glucose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K(B(OH)4+L)=1.43 K(B(OH)4+2L)=2.17	1987VHa (82871)	224
B(III)	gl	KCl	25°C	0.10M	M			K1=1.51	1986LHa (82872)	225
B(III)	gl	none	25°C	0.0	M			K1=1.36 B2= 2.05	1979EMb (82873)	226

Metal is borate.

\*\*\*\*\*  
C12H22O11 L Maltose CAS 6363-53-7 (2705)  
4-O-alpha-D-Glucopyranosyl-D-glucose, Maltobiose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K(B(OH)4+L)=1.41 K(B(OH)4+2L)=1.89	1987VHa (82878)	227

B(III)	gl	KCl	25°C	0.10M	M			K1=1.36	1986LHa (82879)	228
--------	----	-----	------	-------	---	--	--	---------	-----------------	-----

\*\*\*\*\*  
C12H22O11 L CAS 4618-18-2 (8502)  
4-O-beta-D-Galactopyranosyl-D-fructose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K(B(OH)4+L)=2.91 K(B(OH)4+2L)=5.14	1987VHa (82883)	229

\*\*\*\*\*  
C12H22O11 L Cellobiose CAS 528-50-7 (2697)  
4-O-beta-D-Glucopyranosyl-D-glucose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K1=1.25	1986LHa (82885)	230

\*\*\*\*\*  
C12H22O11 L Melibiose CAS 66009-10-7 (2699)  
6-O-D-Galactopyranose-D-glucose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K1=1.82 B2=2.44	1986LHa (82889)	231

\*\*\*\*\*  
C12H22O11 L Gentiobiose CAS 554-91-6 (2698)  
6-O-D-Glucopyranosyl-D-glucose, Amygdalose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K1=1.14	1986LHa (82892)	232
*****										
C12H22O11		L		Trehalose				CAS 6138-23-4	(2700)	
D-Glucopyranosyl-D-glucopyranoside;										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	oth/un	25°C	dil	M				2004LCa (82898)	233
K(B(OH)4+L)=1.26										
Self medium, 0.001-0.01 M sodium borate, pH 9.2. Reaction is an esterification, with loss of 2H2O.										
-----										
B(III)	gl	KCl	25°C	0.10M	M			K1=1.04	1986LHa (82899)	234
*****										
C12H22O11		L		Sucrose				CAS 57-50-1	(2523)	
beta-D-Fructofuranosyl-alpha-D-glucopyranoside; Saccharose;										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	oth/un	25°C	dil	M				2004LCa (82907)	235
K(B(OH)4+L)=0.98										
Self medium, 0.001-0.01 M sodium borate, pH 9.5. Reaction is an esterification, with loss of 2H2O.										
-----										
B(III)	gl	KCl	25°C	0.10M	M				1987VHa (82908)	236
K(B(OH)4+L)=0.86										
K(B(OH)4+2L)=0.70										
-----										
B(III)	gl	KCl	25°C	0.10M	M			K1=0.75	1986LHa (82909)	237
*****										
C12H24O11		L		Maltitol				CAS 585-88-6	(2709)	
4-O-alpha-D-Glucopyranosyl-D-glucitol;										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K1=3.71	1988HLA (83682)	238
*****										
C12H24O11		L		Lactitol				CAS 535-94-4	(2710)	
4-O-beta-D-Galactopyranosyl-D-glucitol;										
-----										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K1=3.37	1988HLA (83685)	239
*****										
C14H8O7S		H3L		DASA				CAS 83-61-4	(950)	
1,2-Dihydroxyanthraquinone-3-sulfonic acid, Alizarin Red S;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	g1	KN03	20°C	0.10M	U				1968BHb (86716)	240
								K(H3BO3+H3L=B(OH)2HL+H)=-3.4		

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	sp	oth/un	25°C	?	U				1964BRa (86900)	241
								K(B(OH)3+H2L=B(OH)2HL)=3.54		

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K(B(OH)4+L)=1.35 K(B(OH)4+2L)=1.67	1987VHa (98277)	242

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M			K(B(OH) <sub>4</sub> +L)=1.05 K(B(OH) <sub>4</sub> +2L)=1.14	1987VHa (98279)	243

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K	values	Reference	ExptNo
B(III)	sp	oth/un	25°C	?	U					1970BRa (101700)	244
									K(B(OH)3+H5L)=4.29		

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	sp	KCl	20°C	0.50M	U				1962CIIa (102703)	245
								$K(B(OH)_4 + L = B(OH)_2H - 2L) = 4.38$		
								$K(B(OH)_4 + HL = B(OH)_2H - 1L) = 3.60$		

# 1,1'-Iminodianthraquinone; (1,1'-dianthrimide)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	sp	oth/un	70°C	94%	U			1959LSa (104652) 246		
								K(HBO2+HL=BOL)=5.15		

Medium: 93.8% H2SO4

Polymer (4200)  
Polyvinyl alcohol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
B(III)	gl	oth/un	25°C	0.10M	U			1957RLa (108381) 247		
								K'(B(OH)4+L=B(OH)2H-2L)=0.26		
								K'(B(OH)4+2L=B(H-2L)2)=0.64		

See reference for definitions

## REFERENCES

- 2004LCa M Longinotti,H Corti; J.Solution Chem.,33,1029 (2004)  
 2003MYb Y Miyazaki,K Yoshimura,Y Miura; Polyhedron,22,909 (2003)  
 2000KAa Y Kanekiyo,S Aizawa,S Funahashi; Inorg.Chim.Acta,298,154 (2000)  
 2000SMB C Shao,S Matsuoka,K Yoshimura; J.Chem.Soc.,Dalton Trans.,3136 (2000)  
 1998MBA S McElligott,R Byrne; Aquatic Geochem.,3,345 (1998)  
 1996YMa K Yoshimura,Y Miyazaki,S Sawada; J.Chem.Soc.,Faraday Trans.,92,651 (1996)  
 1995BVA N Bachelier,J Verchere; Polyhedron,14,2009 (1995)  
 1994LGA R London,S Gobel; J.Am.Chem.Soc.,116,2562 (1994)  
 1994PRA R Pizer,P Ricatto; Inorg.Chem.,33,4985 (1994)  
 1994PRb R Pizer,P Ricatto; Inorg.Chem.,33,2402 (1994)  
 1991MIA D Midgley; J.Chem.Soc.,Dalton Trans.,1585 (1991)  
 1989JJa L Ji,T Jiang; J.Inorg.Chem.(China),5,101 (1989)  
 1988ARA R Aruga; J.Chem.Soc.,Dalton Trans.,2971 (1988)  
 1988HLA P Hakkinen et al; Finn.Chem.Lett.,15,7 (1988)  
 1988LTb O Lukkari,J Tamminen; Finn.Chem.Lett.,15,13 (1988)  
 1987BBa M Birus,Z Bradic,G Krznaric et al; Inorg.Chem.,26,1000 (1987)  
 1987PTa R Pizer,C Tihal; Inorg.Chem.,26,3639 (1987)  
 1987VHa J Verchere,M Hlaibi; Polyhedron,6,1415 (1987)  
 1986LHa K Lajunen et al; Finn.Chem.Lett.,13,21 (1986)  
 1985ARb R Aruga; Talanta,32,517 (1985)  
 1984AGA M Azzaro,J Gal,S Geribaldi; J.Chem.Soc.,Perkin Trans.II,771 (1984)  
 1984PSb M Pesavento,T Soldi et al; Ann.Chim.(Rome),74,203 (1984)  
 1984PSd R Pizer,R Selzer; Inorg.Chem.,23,3023 (1984)  
 1983AGA M Azzaro,J Gal,S Geribaldi et al; J.Chem.Soc.,Perkin Trans.II,57 (1983)  
 1981PAa T Paal; Acta Chim.Acad.Sci.Hung.,106,71 (1981)  
 1980MBC A Mikan,M Bartusek; Coll.Czech.Chem.Comm.,45,2645 (1980)  
 1979EMB W Evans,E McCourtney,W Carney; Anal.Biochem.,95,383 (1979)  
 1979HUA E Huttunen; Finn.Chem.Lett.,236 (1979)  
 1979MMD V Masalovich,G Moshkareva et al; Zh.Neorg.Khim.,24,1494(829) (1979)



1979QDa A Queen, L Davies, A Con; Can.J.Chem., 57, 920 (1979)  
 1979YKb K Yoshino, M Kotaka, M Okamoto; Bull.Chem.Soc.Jpn., 52, 3005 (1979)  
 1978GMe J-F Gal, D Morris; J.Chem.Soc., Perkin Trans.II, 431 (1978)  
 1978MBb M Mikesova, M Bratushek; Chem.Zvesti 32, 472 (1978)  
 1977EFa W Evans, V Frampton, A French; J.Phys.Chem., 81, 1810 (1977)  
 1977PBc R Pizer, L Babcock; Inorg.Chem., 16, 1677 (1977)  
 1977QUa A Queen; Can.J.Chem., 55, 3035 (1977)  
 1977RBb M Rebstockova, M Bartusek; Collec.Czech.Chem.Comm., 42, 627 (1977)  
 1977SWa D Satchell, T Weil; J.Chem.Soc., Perkin Trans.II, 592 (1977)  
 1976AWa P Antikainen, U Witikainen; Finn.Chem.Lett. 165 (1976)  
 1976LPa G Lorber, R Pizer; Inorg.Chem., 15, 978 (1976)  
 1975FPb S Friedman, R Pizer; J.Am.Chem.Soc., 97, 6059 (1975)  
 1974AWa P Antikainen, U Witikainen; Finn.Chem.Lett. 156 (1974)  
 1973KAa J Kankare; Anal.Chem., 45, 2050 (1973)  
 1973MPb R Mesmer, K Palen, C Baes; Inorg.Chem., 12, 89 (1973)  
 1973PAb L Pettersson, I Andersson; Acta Chem.Scand., 27, 977; 1019 (1973)  
 1972AAa L Asso, M Asso, G Carpeni; Rev.Chim.Minerale, 9, 647 (1972)  
 1972HKA E Hakiola, J Kankare, T Skarp; Anal.Chem., 44, 1857 (1972)  
 1972HKd E Hakiola, J Kankare; Suomen Kem., B45, 179 (1972)  
 1971AKc P Antikainen, R Katila; Suomen Kem., B44, 256 (1971)  
 1971AVa P Antikainen, A Virtala; Suomen Kem., B44, 259 (1971)  
 1971CBc D Cogley, J Butler, E Grunwald; J.Phys.Chem., 75, 1477 (1971)  
 1971GHg S Grassino, D Hume; J.Inorg.Nucl.Chem., 33, 421 (1971)  
 1971Gmb G Gamba, M Marcantonatos; Helv.Chim.Acta, 54, 1509 (1971)  
 1971SBd R Soni, M Bartusek; J.Inorg.Nucl.Chem., 33, 2557 (1971)  
 1970BMe M Bartusek, A Martell; Publ.Fac.Sci.Univ.Brno, E38, 371 (1970)  
 1970BRa R Brown; Anal.Chim.Acta, 50, 157 (1970)  
 1970COa J Conner; J.Inorg.Nucl.Chem., 32, 3545 (1970)  
 1970LNC R Larsson, G Nunziata; Acta Chem.Scand., 24, 2156 (1970)  
 1969AVc P Antikainen, M Viro, L Sahlstrom; Suomen Kem., B42, 178 (1969)  
 1969HHa J Havel, L Havelkova, M Bartusek; Chem.Zvesti, 23, 582 (1969)  
 1969KPa K Kustin, R Pizer; J.Am.Chem.Soc., 91, 317 (1969)  
 1969Kta J Knoeck, J Taylor; Anal.Chem., 41, 1730 (1969)  
 1969MGd M Marcantonatos, G Gamba, D Monnier; Helv.Chim.Acta, 52, 2183 (1969)  
 1968AOa P Antikainen, H Oksanen; Acta Chem.Scand., 22, 2867 (1968)  
 1968APc P Antikainen, I Pitkanen; Suomen Kem., B41, 65 (1968)  
 1968APd P Antikainen, I Pitkanen; Suomen Kem., B41, 65; 108 (1968)  
 1968AVa P Antikainen, M Viro; Suomen Kem., B41, 206 (1968)  
 1968BHb M Bartusek, L Havelkova; Collec.Czech.Chem.Comm., 33, 385 (1968)  
 1968HBa L Havelkova, M Bartusek; Collec.Czech.Chem.Comm., 33, 4188 (1968)  
 1967BHb M Bartusek, L Havelkova; Collec.Czech.Chem.Comm., 32, 3853 (1967)  
 1967CBc J Conner, V Bulgrin; Inorg.Nucl.Chem., 29, 1953 (1967)  
 1967CBd J Connor, V Bulgrin; J.Inorg.Nucl.Chem., 29, 1953 (1967)  
 1967FAa R Frostell, P Antikainen; Suomen Kem., B40, 86 (1967)  
 1967NEa V Nazarenko, L Ermak; Zh.Neorg.Khim., 12, 1304 (2472) (1967)  
 1967NEb V Nazarenko, L Ermak; Zh.Neorg.Khim., 12, 335(643), 1079(2051) (1967)  
 1967SBg M Shchigol, N Burchinskaya; Zh.Neorg.Khim., 12, 626 (1183) (1967)  
 1966ATd P Antikainen, K Tevanen; Suomen Kem., B39, 247, 285 (1966)  
 1965BPa S Brownstein, J Paasivirta; Can.J.Chem., 43, 1645 (1965)  
 1965FSa V Frei, A Solcova; Collec.Czech.Chem.Comm., 30, 961 (1965)

1965LAa S Lormeau, M Ahond; Bull.Soc.Chim.Fr., 505 (1965)  
 1965RIa I Ryss, S Idels; Zh.Neorg.Khim., 10, 714 (1965)  
 1965RPa I Ryss, N Parkhomenko; Ukr.Khim.Zh., 31, 237 (1965)  
 1964ATb P Antikainen, K Tevanen; Suomen Kem., B37, 6; (1962) B35, 224 (1964)  
 1964BRa R Brown; Can.J.Chem., 42, 2635 (1964)  
 1964GUa R Gut; Helv.Chim.Acta, 47, 2262 (1964)  
 1964MGa E Malcolm, J Green, H Swenson; J.Chem.Soc., 4669 (1964)  
 1962CIa R Cigen; Acta Chem.Scand., 16, 192, 1271 (1962)  
 1961BGa J Barr, R Gillespie, E Robinson; Can.J.Chem., 39, 1266 (1961)  
 1961CKa A Clifford, S Kongpricha; J.Inorg.Nucl.Chem., 20, 147 (1961)  
 1960ARa P Antikainen, V Rossi; Suomen Kem., B33, 94 (1960)  
 1960BGf M Baaz, V Gutmann, L Hubner; Monatsh.Chem., 91, 694 (1960)  
 1960NAa R Nasanen; Suomen Kem., B33, 1 (1960)  
 1960NAf R Nasanen; Suomen Kem., B33, 7; 111 (1960)  
 1959AKa P Antikainen, A Kauppila; Suomen Kem., B32, 141 (1959)  
 1959ARa P Antikainen, V Rossi; Suomen Kem., B32, 182; 185 (1959)  
 1959ATa P Antikainen, K Tevanen; Suomen Kem., B32, 214 (1959)  
 1959LSa F Langmyhr, O Skaar; Acta Chem.Scand., 13, 2107 & unpublished (1959)  
 1959RDa I Ryss, D Donskaya; Zh.Fiz.Khim., 33, 107 (1959)  
 1958ANa P Antikainen; Suomen Kem., B31, 255 (1958)  
 1958MHb E Mackor, A Hofstra, J van der Waals; Trans.Faraday Society, 54, 66 (1958)  
 1958Rkb I Ryss, I Khordas; Zh.Neorg.Khim., 3, 1410 (1958)  
 1957RLa G Roy, A Laferriere, J Edwards; J.Inorg.Nucl.Chem., 4, 106 (1957)  
 1956ANa P Antikainen; Suomen Kem., B29, 14; 135; 179 (1956)  
 1956ANb P Antikainen; Acta Chem.Scand., 10, 756 (1956)  
 1955ANa P Antikainen; Acta Chem.Scand., 9, 1008 (1955)  
 1955KEb D Kern; J.Am.Chem.Soc., 77, 5458 (1955)  
 1955RUa I Ryss, P Ustyanova; Ukr.Khim.Zh., 21, 6 (1955)  
 1953EDb J Edwards; J.Am.Chem.Soc., 75, 6151; 6154 (1953)  
 1952LAb W Latimer; "Oxidation Potentials", Prentice Hall, NY (1952)  
 1952TOa K Torssell; Ark.Kemi., 3, 571 (1952)  
 1951WAa C Wamser; J.Am.Chem.Soc., 73, 409 (1951)  
 1949DOa A Deutsch, S Osoling; J.Am.Chem.Soc., 71, 1637 (1949)  
 1949RCa S Ross, A Catotti; J.Am.Chem.Soc., 71, 3563 (1949)  
 1948RSa I Ryss, M Slutskaya, S Palevskaya; Zh.Fiz.Khim., 22, 1322 (1948)  
 1948WAa C Wamser; J.Am.Chem.Soc., 70, 1209 (1948)  
 1946RYa I Ryss; Dokl.Akad.Nauk SSSR, 52, 417 (1946)  
 1936Rba I Ryss, N Bakina; Dokl.Akad.Nauk SSSR, 11, 107 (1936)  
 1923MEa H Menzel; Z.Phys.Chem., 105, 402 (1923)

#### 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 :-

T or IUP=T signifies EVALUATION RATING = Tentative by IUPAC

---

END