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)3+3H+3e=B(s)+3H2O. 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)4+HL=B(OH)3L)=1.83
****
CO3-- H2L 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 K1=11.44 1998MBa (3144) 3
K(B(OH)3+HCO3=B(OH)2CO3)=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(BCl3POCl3=POCl2+BCl4)=-6.7
Medium: POCl3(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)4+HL=B(OH)3L)=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-1, DS=313.8 J K-1 mol-1. 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		

Ks=-3.79(0 C), -2.11(50 C), -1.54(70 C). DH(Ks)=59.0 kJ mol-1. Ks(CsBF4(s))= -3.35(0 C), -2.37(25 C), -1.25(60 C). DH=60

B(III) sol none 25°C 0.0 U T HM 1958RKb (6750) 15
K(CsBF4(s)=Cs+BF4)=-2.37
I=0 corr. Ks=-3.35(0 C), -1.25(60 C). DH(Ks)=59 kJ mol-1(25 C)

B(III) EMF oth/un 15°C var U 1955RUa (6751) 16
K(BF2(OH)2+HF=BF3OH+H2O)=3.57

B(III) kin oth/un 25°C var U 1951WAa (6752) 17
K=1.96
K'=2.64
K: BF2(OH)2+HF=BF3OH+H2O. K': BF3OH+HF=BF4+H2O

B(III) oth oth/un 20°C 0.02M U T 1948RSa (6753) 18
K(BF3OH+HF=H2O+BF4)=2.57
Method: chemical analysis, Medium:HBF4. K=2.32(60,75 C), 2.14(90 C)

B(III) oth oth/un 25°C 0.0 U 1948WAa (6754) 19
K(BF3OH+HF=H2O+BF4)=2.64
Methods: chemical analysis, kinetics

B(III) oth oth/un 25°C var U T H 1946RYa (6755) 20
K(BF3OH+HF=BF4+H2O)=2.55
Method: chemical analysis. K=2.26(80 C), 2.14(100 C). DH(K)=-13.5 kJ mol-1, DS=4.6 J K-1 mol-1 (25C)

B(III) EMF none 18°C 0.0 U 1936RBa (6756) 21
K(BF4+3H2O=B(OH)3+3H+4F)=-19.4

****

H2O 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(BF4+L)=-0.5
K(B(Ph)4+L)=-1

****

NH3 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(H2NBF3+H)=12

****

NH3O L Hydroxylamine; CAS 5470-11-1 (1808)
Hydroxylamine; NH2.OH

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

B(III) dis oth/un 18°C var U T 1923MEa (12652) 32
K(Bi(OH)4+H2L=Bi(OH)3HL)=1.48
K=1.62(0 C)

****

SO4-- 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		K(B(HL)4+H)=0.85	1961BGa (16000)	33

medium: H2SO4. K(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		K(B(H-1L)3+H-1L)=5.62 K(B(H-1L)4+H=B(H-1L)3+L)=10.98	1964GUa (17876)	34

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	K(B(OH)4+H2L=B(OH)2O2L)=8.20	1994PRb (18802)	35

DH=-46 kJ mol-1, DS=4 J mol-1 K-1

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KNO3	21°C	0.10M	U		K(H3BO3+HL=B(OH)2L+H2O)=0.35	1977RBb (18803)	36

B(III) gl KNO3 25°C 0.10M C 1975FPb (18804) 37
K(Ph(B(OH)2+H2L=PhB(OH)L+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		B(H3BO3+L=B(OH)3L)=-0.42	1991MIa (19897)	38

****

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)2O2H-1L)=5.11
K(B(OH)2O2H-1L+HL=BO4(H-1L)2+4H)=1.0
--------------------------------------------------------------------------------
B(III)     gl  KNO3   21°C 0.09M U  I                    1977RBb (20493)  40
                                          K(H3BO3+L=B(OH)2H-1L+H2O)=0.17
In 0.21 M NaNO3 K(H3BO3+L=B(OH)2H-1L+H2O)=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)2O2H-2L)=0.15
K(B(OH)2O2H-2L+L=BO4(H-2L)2+4H)=-0.74, K(B(OH)2O2H-1A+L=BO4H-1AH-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 kJ mol-1, DS=-15 J K-1 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 C),0.46(13 C),0.33(25 C); DH=-11.3 kJ mol-1
DS=-33.4 J K-1 mol-1; K"=0.14(0 C),0.08(13 C),0.06(25 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(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+H2L=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)2O2H-1L)=5.86
```

K(B(OH)2O2H-1L+HL=BO4(H-1L)2+4H)=1.79, K(B(OH)2O2H-2A+HL=BO4H-2AH-1L+4H)=4.5
A=1,2-Dihydroxyethane. K(B(OH)2O2H-2B+HL=BO4H-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=BO4(H-2L)2+4H)=-0.09, K(B(OH)2O2H-1A+L=BO4H-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-1, DS=-22 J K-1 mol-1. 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-1, DS=-29.3 J K-1 mol-1; 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-1,DS=-62.7 J K-1,mol-1,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-1, DS=-9.6 J K-1 mol-1. 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-1,DS=-16.7 J K-1 mol-1,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=BO4(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(H3BO3+L=B(OH)2H-1L+H2O)=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+H2L=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

Keff(B(OH)4+L=B(OH)2O2H-1L+4H)=0.15, Keff(B(OH)2O2H-1L+L=BO4(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; CH3.CH(OH).CH(OH).CH3

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 C),1.63(13 C),1.57(25 C); DH=-18.0 kJ mol-1,DS=-29.3
J K-1 mol-1; K'=2.60(0 C),2.45(13 C),2.21(25 C); DH=-23.0, DS=-33

****

C4H10O2 L CAS 5341-95-7 (3575)

meso-Butan-2,3-diol; CH3.CH(OH).CH(OH).CH3

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 C),0.51(13 C),0.43(25 C); DH=-14.2 kJ mol-1, DS=-42
J K-1 mol-1; K'=1.11(0 C),0.88(13 C),0.66(25 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; CH2(OH).CH(OH).CH2.OCH3

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.CH2.CH(OH).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		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)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 (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-1, DS=-21 J K-1 mol-1; 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(H2BO3+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(BO(OH)2+H2L=BOL)=2.11
K(BO(OH)2+2H2L=BL2)=2.83
****
C5H12O2 L CAS 5396-58-7 (3611)
2-Methylbutane-2,3-diol; CH3.C(OH)(CH3).CH(OH).CH3

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 C),1.38(13 C),1.26(25 C); DH=-20.5 kJ mol-1, DS=-46
J K-1 mol-1; K'=2.76(0 C),2.53(13 C),2.32(25 C); DH=-33.4, DS=-67
****
C5H12O2 L CAS 625-69-4 (7147)
Pentane-2,4-diol; CH3CH(OH)CH2CH(OH)CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
B(III) EMF KCl 25°C 0.10M C I K1=0.50 1995BVa (41645) 84
K(BH+L)=-0.06
In CHCl3: K(BH+L)=-0.097; CH2Cl2: K(BH+L)=-0.081. In C6H6: K(BH+L)=-0.131;
In CCl4: K(BH+L)=-0.086. In BuOBu: K(BH+L)=-0.097. In DIBK:K(BH+L)=-0.08
****
C5H12O4 H2L Pentaerythrito CAS 115-77-5 (3028)
Pentaerythritol; C(CH2.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)	85
							K(B(OH)4+L=B(OH)2H-2L)=2.699		
							K(B(OH)4+2L=B(H-2L)2)=3.651		
B(III)	gl	oth/un	25°C	0.10M	U			1957RLa (41662)	86
							K(BO(OH)2+H2L=BOL)=2.38		
							K(BO(OH)2+2H2L=BL2)=3.05		

****

C5H12O5 L Arabitol CAS 488-82-4 (5403)
Arabitol; HO.CH2.HOCH.HCOH.HCOH.CH2.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.CH2.HCOH.HCOH.HCOH.CH2.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-1, DS(K1)=
-5.02 J K-1 mol-1; DH(B2)=-31.4, DS(B2)=-34.

****

C5H12O5 L Xylitol CAS 87-99-0 (2139)
Xylitol; HO.CH2.HCOH.HOCH.HCOH.CH2.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)2.C6H2(NO2)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	sp	KCl	25°C	0.10M	U			1972HKa (42264)	90
							K(B(OH)3+H2L=B(OH)2L+H)=-1.65		

****

C6H5NO4 H2L 3-Nitrocatechol CAS 6665-98-1 (2685)
1,2-Dihydroxy-3-nitrobenzene; O2N.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	sp	KCl	25°C	0.10M	U			1972HKa (42856)	91

K(B(OH)3+H2L=B(OH)2+H)=-3.46

B(III) vlt oth/un 25°C 0.10M U 1972HKd (42857) 92
K(B(OH)4+H2L=B(OH)2L)=3.56

****

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(B(OH)3+H2L=B(OH)2L+H)=-3.02
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
K(B(OH)3+H2L=B(OH)2L+H)=-3.76

B(III) vlt oth/un 25°C 0.10M U 1972HKd (42916) 95
K(B(OH)4+H2L=B(OH)2L)=3.96

B(III) gl KNO3 20°C 0.10M U 1968BHb (42917) 96
K(H3BO3+H2L=BL(OH)2+H)=-4.0

****

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
K(B(OH)4+H2L=B(OH)2L+2H2O)=3.9
K(B(OH)4+2H2L=BL2+4H2O)=4.4
Method: 11B nmr. pH=6.5.

B(III) gl KNO3 25°C 0.10M C 1977PBc (43728) 98
K(B(OH)3+H2L=B(OH)2L+H)=-4.96
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(B(OH)4+H2L=B(OH)2L)=3.748
K'(B(OH)4+2HL=BL2)=3.996
K=4.361(0 C),3.972(25 C),3.945(30 C),3.843(35),3.773(40); DH=-23.4 kJ mol-1,
DS=-1.7 J K-1 mol-1. 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
K(H3BO3+H2L=B(OH)2L+H)=-5.17

B(III) gl oth/un 35°C .025M U T H 1967CBd (43731) 101
K(B(OH)4+H2L=B(OH)2L)=3.62
Medium: 0.025 borax. K=3.86(0C),3.76(13C),3.70(25C). DH=-11.3 kJ mol-1,
DS=33 J K-1 mol-1

```
--------------------------------------------------------------------------------
B(III)     gl  KCl    23°C 0.10M U                        1959AKa (43732) 102
                                        K(B(OH)4+H2L)=4.36-0.0145T
                                        K(B(OH)4+2H2L)=4.61-0.0140T
T=0-45  C
--------------------------------------------------------------------------------
B(III)     gl  oth/un 25°C 0.10M U                        1957RLa (43733) 103
                                        K(BO(OH)2+H2L=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(HBO2+HL=H+HBO2L)=-5.05
                                        K(HBO2+2HL=H+H2BO2L2)=-4.40
--------------------------------------------------------------------------------
B(III)     gl  KNO3   20°C 0.10M U                        1968HBa (43952) 105
                                        K(H3BO3+H3L=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(H3BO3+H2L=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(H3BO3+H2L=B(OH)2L+H)=-3.72
--------------------------------------------------------------------------------
B(III)     gl  KCl    25°C  var  U  I                     1960NAa (44407) 108
K(B(OH)3+H2L=B(OH)2L+H)=-4.34+3.05SQRTI/(1+1.3SQRTI)-0.16I
At I=0: K(B(OH)4+H2L)=4.90
--------------------------------------------------------------------------------
B(III)     gl  KCl    25°C  1.0M U                        1960NAf (44408) 109
                                        K(H2L+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-1, DS=-42 J K-1 mol-1
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-1

B(III) cal NaNO3 25°C 0.10M U H 1988ARa (49539) 115
DH(B+L=BL)=-3 kJ mol-1; 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 C),3.642(15 C),3.416(25 C),3.178(35 C); DH=-39.3 kJ mol-1,DS=-66.4
K'=5.109(0 C),5.062(15 C),4.917(25 C),4.772(35 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+2H2L=BL2)=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 kJ mol-1; DS=-42. DH(BL+L=BL2)= 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+H2L=BOL)=2.10
                                      K(BO(OH)2+2H2L=BL2)=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
```

K(BO(OH)2+2H2L=BL2)=2.89

****

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.

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

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
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-1; DS=26.8.

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M		K1=2.83	B2=4.46	1986LHa (49699)	153

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	NaClO4	25°C	0.10M	U	M		2000KAa (50530)	154
							B(B(OH)2H-1L)=3.32		
							B(BH-1L(H-2L))=5.16		
							B(B(OH)2H-2L)=-6.47		
							B(BH-4L2)=-4.85		

Metal is B(OH)3. K(BH-2L2)=14.34.
Also data for ternary species B(OH)3ML, 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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	oth/un	35°C	.025M	U	T H		1967CBd (51034)	155
							K(B(OH)4+L=B(OH)2H-2L)=0.70		
							K'(B(OH)4+2L=B(H-2L)2)=1.95		

Medium:borax. K=1.38(0 C), 1.28(13 C), 1.04(25 C); DH=-29.7 kJ mol-1,
DS=-79.4 J K-1 mol-1; 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;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
B(III)	gl	none	25°C	0.0	M	H	K1=3.44	B2= 5.05	1979EMb (51059)	156

Metal is borate. By calorimetry, DH(K1)=-24.4 kJ mol-1, DS(K1)=
-25 J K-1 mol-1; DH(B2)=-33.5, DS(B2)=-32.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
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)4+L)=-19.7 kJ mol-1, DS=-7.9 J K-1 mol-1. DH(B(OH)4L+L)=-23.4, DS=-50.

B(III) cal oth/un 25°C dil C H 1977EFa (51072) 159
K(B(OH)4+L=B(OH)2L+2H2O)=3.03
K(B(OH)2L+L=BL2+2H2O)=2.05
Self medium, 0.027 M borate, 0.01-0.09 M mannitol. DH(B(OH)4+L)=-18.6 kJ mol-1, DS(B(OH)4+L)=-4.6 J K-1 mol-1; DH(B(OH)2L+L)=-19.9, DS=-27.

B(III) oth KCl 25°C 0.10M U 1973KAa (51073) 160
K(B(OH)4+L=B(OH)2H-2L)=2.98
K(B(OH)3+2L=B(H-2L)2+H=-3.91
K(2B(OH)3+L=B2(OH)2H-2L)=2.0
Method: potentiostatic titration. K(B(OH)2+2L=B(H-1L)(H-2L))=-0.21
K(2B(OH)4+L=B2(OH)4(H-2L))=4.41

B(III) gl NaClO4 25°C 3.00M U K1=-0.14 1973PAb (51074) 161
K1 also measured by polarimetry. K(B(OH)3+nL+H20=B(OH)4Ln+H)=-6.00 (n=1), (n=2)=-4.10; K(2B(OH)3+nL+H2O=(H-2)(B(OH)3)2Ln+2H)(n=1)=-13.61,(n=2)=-10.76

B(III) EMF KCl 25°C 3.00M U 1972AAa (51075) 162
K(H3BO3+L)=-0.22
K(H3BO3L=H2BO3L+H)=-6.04
K(H3BO3L+L=H2BO3L2+H)=-4.07

B(III) gl KCl 45°C 0.10M U T H 1968APd (51076) 163
K(B(OH)4+L=B(OH)2H-2L)=3.398
K'(B(OH)4+2L=B(H-2L)2)=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-1. 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)4+L=B(OH)2H-2L)=2.90
K'(B(OH)4+2L=B(H-2L)2)=5.05
Medium:borax. K=3.62(0 C), 3.36(13 C), 3.04(25 C); DH=-33.9 kJ mol-1, DS= -54.3 J K-1 mol-1; 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)4+2L)=4.225+0.554SQRTI

B(III) gl KCl 25°C 2.0M U I 1955ANa (51079) 166
K(H3BO3+L=B(OH)2H-2L+H)=-5.13
K'(H3BO3+2L=B(H-2L)2+H)=-4.29
K(H3BO3+L)=-5.22(I=0), -5.10(I=0.1), -5.02(I=0.4)
K'(H3BO3+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(H3BO3+2L=B(H2L)2+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+H20=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	NaClO4	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	NaClO4	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	NaClO4	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-1
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+H2O)=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(H3BO3+HL=B(OH)2L+H2O) = 1.23		
B(III)	kin	NaCl	25°C	0.10M	C		1977QUa (54152)		182
							K(H3BO3+HL=H2BO2L+H2O)=1.026		

Medium pH=5.34. Method: stop flow spectrophotometry.

B(III)	gl	KNO3	25°C	0.10M	U		1969HHa (54153)		183
							K(H3BO3+H2L=BL(OH)2+H)=-1.62		
							K(H3BO3+2H2L=BL2+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+H2L)=5.15		

****

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

3,4-Dihydroxybenzoic acid; C6H3(OH)2.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(H3BO3+H2L=B(OH)2L+H)=5.01		

****

C7H6O5 H4L Gallic acid CAS 149-91-7 (446)
3,4,5-Trihydroxybenzoic acid; C6H2(OH)3.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(HBO2+H3L=HBO2(H2L)+H)=-8.87		

****

C7H6O6S H3L CAS 585-42-2 (6136)
2-Hydroxy-4-sulphobenzoic acid, 4-sulfosalicylic acid; HO.C6H3(COOH)(HSO3)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KNO3	20°C	0.30M	U			1978MBb (54803)	187
							K(H3BO3+HL=B(OH)2L+H2O)=0.98		

****

C7H7NO3 H2L CAS 89-73-6 (204)
2-Hydroxybenzohydroxamic acid (salicylhydroxamic acid); HO.C6H4.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(H3BO3+HL=B(OH)2L)=4.5		

****

C7H7NO3 H2L (1112)
4-Aminosalicylic acid; H2N.C6H3(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KNO3	20°C	0.10M	U			1978MBb (55636)	189
							K(H3BO3+HL=B(OH)2L+H2O)=1.29		
B(III)	gl	KNO3	30°C	0.10M	M			1978MBb (55637)	190
							K(H3BO3+HL=B(OH)2L+H2O)=1.31		

****

C7H7NS L Thiobenzamide CAS 2227-79-4 (1660)
Thiobenzamide; C6H5.CS.NH2

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(BF3+L)=1.08		

Medium: Et2O

****
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(H3BO3+L=BO2HL)=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+H2L=B(OH)2L+H)=-5.20		

K(PhB(OH)2+H2L=PhB(OH)L+H)=-4.52. PhB(OH)2 is phenylboronic acid.
****
C7H14O6 L CAS 1824-94-8 (3741)
Methyl a-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 a-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: (alpha,beta complex), K': (alpha,gamma) complex,
K": (alpha,gamma)(alpha,gamma) 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 alpha, gamma diol.
For the alpha, beta diol K(B(OH)4+L)=-0.74

B(III)	gl	oth/un	25°C	var	U			1965LAa (57888)	197
							K(H3BO3+L=B(OH)2(H2L)+H)=-9.2		

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

Methyl a-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)4+L)=1.28 K'(B(OH)4)+2L)=0.98 K"(B(OH)4+2L)=1.69 K"'(B(OH)4+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.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	oth/un	25°C	var	U		K(H3BO3+L=B(OH)2(H2L)+H)=-8 L)H3BO3+2L=B(H2L)2+H)=-7.2	1965LAa (57890)	199
B(III)	oth	oth/un	30°C	.105M	U		K(B(OH)4+L)=1.7 K(B(OH)4+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; C6H4(COOH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	none	25°C	0.0	M		B(H3BO3+L=B(OH)3L)=-0.07	1991MIa (58945)	201

****

C8H10O2 L CAS 7138-28-5 (3199)
Phenylethane-1,2-diol; C6H5.CH(OH).CH2.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)2+H2L)=0.87 K(BO(OH)2+2H2L)=0.85	1957RLa (60835)	202

****

C8H11NO2 H2L Dopamine CAS 579-59-9 (251)
2-(3',4'-Dihydroxyphenyl)ethylamine; (HO)2.C6H3.CH2.CH2.NH2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
B(III)	gl	KCl	25°C	0.10M	M		K1=4.86	1974AWa (61076)	203

****

C8H11NO3 H2L Noradrenaline CAS 138-65-8 (253)
Norepinephrine, 3,4-Dihydroxyphenylethanolamine; (HO)2C6H3.CH(CH2.NH2).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(H3BO3+H2L=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(HBO2+H2L=H2LBO2+H)=-3.76

B(III) gl KNO3 25°C 0.10M U 1968HBa (69838) 211
K(H3BO3+H2L=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+H2L=B(OH)2L+H)=-1.57
K(B(OH)3+2H2L=BL2+H)=2.35
Method: 11B nmr.

B(III) gl KNO3 30°C 0.10M M 1978MBb (69928) 213
K(H3BO3+HL=B(OH)2L+H2O)=-0.07

B(III) gl KNO3 20°C 0.10M U 1967BHb (69929) 214
K(H3BO3+H2L=BL(OH)2+H)=-1.55
K(H3BO3+2H2L=BL2+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(H3BO3+HL=H3BO3.HL)=5.15
K(H3BO3+2HL=H3BO3(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(H3BO3+HL=H3BO3.HL)=5.15
KH3BO3+2HL=H3BO3(HL)2)=7.50
Medium: glassy ether-conc. H2SO4 at -196 C. Method: phosphorescence
****
C10H14N2O L CAS 67402-02-2 (6298)
N-Trimethylammoniobenzamidate;

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: CH2Cl2. DH(BF3L)=-116.0 kJ mol-1. 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(BF3+L=BF3L)=-132.4 kJ mol-1 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 KNO3 30°C 0.10M M 1978MBb (77006) 219
K(H3BO3+HL=B(OH)2L+H2O)=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 KNO3 30°C 0.10M M 1978MBb (77059) 220
K(H3BO3+HL=B(OH)2L+H2O)=1.83
****
C11H17NO3 H2L Isoproternol CAS 949-36-0 (2671)
N-Isopropyl-DL-noradrenaline; (HO)2C6H3.CH(OH)CH2.NCH(CH3)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
B(III) gl KCl 25°C 0.10M M K1=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(H3BO3+L=H2BO3L+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 K1=1.91 B2=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		K(B(OH)4+L)=1.26	2004LCa	(82898) 233

Self medium, 0.001-0.01 M sodium borate, pH 9.2. Reaction is an esterification, with loss of 2H2O.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
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		K(B(OH)4+L)=0.98	2004LCa	(82907) 235

Self medium, 0.001-0.01 M sodium borate, pH 9.5. Reaction is an esterification, with loss of 2H2O.

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)=0.86 K(B(OH)4+2L)=0.70	1987VHa	(82908) 236

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
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)     gl  KNO3   20°C 0.10M U                         1968BHb (86716) 240
                                          K(H3BO3+H3L=B(OH)2HL+H)=-3.4
*************************************************************************
C14H10N2O4            H2L    Diaminochrysazi  CAS 29706-46-5  (4039)
4,5-Diamino-1,8-dihydroxyanthraquinone;
-------------------------------------------------------------------------
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
*************************************************************************
C18H32O16               L    Raffinose        CAS 17629-30-0  (5611)
Galactopyranosyl-[1-6]-glucopyranosyl-fructofuranoside;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
B(III)     gl  KCl    25°C 0.10M M                         1987VHa (98277) 242
                                          K(B(OH)4+L)=1.35
                                          K(B(OH)4+2L)=1.67
*************************************************************************
C18H32O16               L    Melezitose       CAS 10030-67-8  (3834)
Glucopyranosyl-[1-3]-fructofuranosyl-[2-1]-glucopyranoside;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
B(III)     gl  KCl    25°C 0.10M M                         1987VHa (98279) 243
                                          K(B(OH)4+L)=1.05
                                          K(B(OH)4+2L)=1.14
*************************************************************************
C22H20O13             H5L    Carminic acid    CAS 1260-17-9  (714)
Carminic acid;
-------------------------------------------------------------------------
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
Medium: conc H2SO4
*************************************************************************
C23H26N2O               L    Malechite Green  CAS 510-13-4  (3517)
1-(Bis-(4-dimethylaminophenyl)methylene)-2-oxobenzene; C6H5.C(OH)(C6H4.N(CH3)2)2
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
B(III)     sp  KCl    20°C 0.50M U                         1962CIa (102703) 245
                                          K(B(OH)4+L=B(OH)2H-2L)=4.38
                                          K(B(OH)4+HL=B(OH)2H-1L)=3.60
*************************************************************************
C28H15NO4               L                     CAS 82-22-4  (3522)
```

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.Commun.,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.Commun.,33,385 (1968)
1968HBa L Havelkova,M Bartusek; Collec.Czech.Chem.Commun.,33,4188 (1968)
1967BHb M Bartusek,L Havelkova; Collec.Czech.Chem.Commun.,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.Commun.,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