

SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 558 experiments for

(no ligands specified)

2 metals : Sn⁺⁺, Sn⁺⁺⁺⁺

(no references specified)

(no experimental details specified)

e- HL Electron (442)
Electron;

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

Sn⁺⁺ oth oth/un 25°C 0.0 M 2001SPa (937) 1
K(Sn+2e=Sn(s))=-4.60 (-136 mV)
Calculated from literature data. K(SnOH+H+2e=Sn(s)+H2O)=-0.81 (-24 mV);
K(Sn(OH)3+3H+2e=Sn(s)+3H2O)=12.89 (381 mV).

Sn⁺⁺ oth oth/un 25°C 0.0 M 2001SPa (938) 2
Calculated from literature data. K(SnO(s)+2H+2e=Sn(s)+H2O)=-2.60 (-77 mV);
K(Sn(OH)2+2H+2e=Sn(s)+H2O)=3.28 (97 mV).

Sn⁺⁺ oth none 25°C 0.0 U 1952LAb (939) 3
K(Sn+2e=Sn(s))=-4.60(-136 mV)

Sn⁺⁺ EMF none 25°C 0.0 U 1938HWa (940) 4
K(Sn+2e=Sn(s))=-4.76(-140.6mV)

Br- HL Bromide CAS 10035-10-6 (19)
Bromide;

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

Sn⁺⁺ ISE non-aq 25°C 100% U K1=5.00 B2=9.20 1987GSa (2310) 5
B3=13.34

Medium: dimethylacetamide

Sn⁺⁺ vlt NaNO3 25°C 1.00M U K1=0.60 B2=1.13 1981PMa (2311) 6

Sn⁺⁺ con NaClO4 25°C 1.00M U K1=0.95 B2=1.24 1976SLa (2312) 7
B3=1.38

Sn⁺⁺ gl NaClO4 25°C 0.50M U M K1=1.58 B2=2.14 1975FBC (2313) 8
B3=1.36
B4=0.00
B(SnClBr)=3.31

Sn⁺⁺ ISE non-aq 25°C 100% U K1=2.15 B2=3.26 1973SLb (2314) 9
B3=4.79

Medium: DMSO, 1 M (Li,Na)ClO4. Using graphical methods: K1=2.23, B2=3.30, B3=4.78. Method: SnHg electrode

```
-----
Sn++      ISE NaClO4 25°C 8.0M U I      K1=1.60  B2=2.74  1969FBb (2315) 10
                                         B3=3.74
                                         B4=3.30
                                         B5=2.40
                                         B6=2.28
```

K1=0.74,B2=0.90(I=1);K1=0.78,B2=1.17,B3=1.09,B4=0.40(I=3);K1=0.85,B2=1.43, B3=1.48,B4=1.00(I=4); At I=0:K1=1.21,B2=1.74,B3=0.72,B4=-0.5. SnHg electrode

```
-----
Sn++      sol oth/un 25°C 4.0M U      K1=0.90  B2=1.73  1962HAa (2316) 11
                                         K3=0.40
                                         K4=-0.47
                                         K5=0.32
```

Medium: H2SO4

```
-----
Sn++      EMF NaClO4 25°C 3.0M U T H  K1=0.73  B2=1.14  1952VAa (2317) 12
                                         K3=0.20
                                         K(SnOH+L)=0.70
```

Method: Sn/Hg elec. 0 C: K1=0.63,K2=0.32,K3=0.24; 35 C: K1=0.76,K2=0.43,K3=0.19; 45 C: 0.79,0.48,0.19. DH(K1)=5.8 kJ mol⁻¹,DH(K2)=5.7,DH(K3)=-1.5

```
-----
Sn++      kin NaClO4 25°C 2.0M U      K1=0.43          1951DPa (2318) 13
Medium: HClO4
```

```
-----
Sn++      ISE none 25°C 0.0 U      K1=1.11  B2=1.81  1928PRa (2319) 14
                                         K3=-0.35
```

```
C2N3-      HL      Dicyanamide      CAS 504-66-5 (2917)
Dicyanamide; (NC.N.CN)-
```

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

```
Sn++      ISE non-aq 25°C 100% U      K1=2.08  B2=4.16  1987GSa (3473) 15
                                         B3=6.21
                                         B4=8.34
```

Medium: dimethylacetamide

```
C4N3-      HL      Tricyanomethanide; (C(CN)3)-
                                         CAS 454-50-2 (2918)
```

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

```
Sn++      ISE NaClO4 25°C 100% U      K1=1.90  B2=3.66  1987GSa (3480) 16
                                         B3=5.87
                                         B4=7.92
```

Medium: dimethylacetamide

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

Chloride;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	sp	NaCl	25°C	0.0	C	TIH		K1=1.42 B3=2.33 B4=2.03 B2= 2.18	2001MSd	(5713) 17
Calc'd from data for 0.01-2.94 m NaCl (0.01 m HCl). Data for 50-300 C. DH(K1)=0.10 kJ mol ⁻¹ , DS=28 J K ⁻¹ mol ⁻¹ ; DH(B2)=0.91, DS=18; DH(B3)=-5.00										
Sn++	oth	oth/un	25°C	0.0	M			K1=1.54 B3=1.97 B2= 2.30	2001SPa	(5714) 18
Application of SIT theory to literature data.										
Sn++	vlt	mixed	25°C	65%	U	I		K1=1.11 B3=1.47 B2=1.72	1990BMB	(5715) 19
In HF solution. HF=56%:B1=0.65, B2=1.38, B3=1.08; HF=47%, B1=0.67, B2=0.32 B3=0.0										
Sn++	EMF	NaClO4	25°C	3.0M	C			K1=1.202 B3=2.369 B4=1.968 B2= 1.29	1989BZa	(5716) 20
Method: Sn electrode.										
Sn++	ISE	non-aq	25°C	100%	U			K1=6.04 B3=16.63 B4=18.95 B2=11.82	1987GSa	(5717) 21
Medium: dimethylacetamide										
Sn++	vlt	NaNO3	25°C	1.00M	U			K1=0.73 B2=1.08	1981PMA	(5718) 22
Sn++	gl	NaClO4	25°C	3.00M	U	M		K1=1.18 B3=1.65 B(SnCl(SCN))=1.87 B(SnCl2(SCN))=2.18 B(SnCl(SCN)2)=1.91 B2=1.78	1980FBa	(5719) 23
Sn++	con	NaClO4	25°C	1.00M	U			K1=1.08 B2=1.85	1976SLa	(5720) 24
Sn++	cal	oth/un	25°C	0.5M	C	IH		K1=1.0 K(SnL+L)=1.47 K(SnL2+L)=0.44	1976VKc	(5721) 25
In 0.5 M HClO4; DH1=+7.9 kJ/mol; For 3.0 M HClO4: K1=1.16; K2=1.79; K3=1.66										
Sn++	gl	NaClO4	25°C	0.50M	U	M		K1=1.87 B3=1.93 B(SnCl2Br)=2.11 B(SnClBr2)=1.39 B2=2.38	1975FBc	(5722) 26

Sn++ kin alc/w 25°C 100% U 1974CJa (5723) 27
K3=0.95
Medium: CH3OH, 0.005 M LiClO4

Sn++ ISE non-aq 25°C 100% U K1=4.00 B2=6.20 1973SLb (5724) 28
B3=8.78
B4=10.04
Medium: DMSO, 1 M LiClO4. Using least squares: B3=9.0, B4=10.0. SnHg elect.

Sn++ con non-aq 25°C 100% U K2=5.92 1971TKb (5725) 29
K3=2.56
Medium: MeCN

Sn++ oth oth/un 25°C var U K1=1.05 B2=1.71 1969CAa (5726) 30
K3=-0.02
Medium: HCl. Method: electrophoresis

Sn++ sol oth/un 25°C 4.0M U K1=1.45 B2=2.35 1962HZa (5727) 31
K3=0.0
K4=-0.17
Ks(Me4NSnCl3=Me4N+SnCl3)=-2.77
Medium: H2SO4

Sn++ ISE NaClO4 25°C 3.0M U K1=1.18 B2=1.74 1961THa (5728) 32
B3=1.67

Sn++ ISE NaClO4 25°C 3.0M U T H K1=1.15 B2=1.70 1952VRa (5729) 33
K3=-0.02
Method: Sn/Hg electrode. DH(K1)=10.9 kJ mol⁻¹, DS=59 J K⁻¹ mol⁻¹; DH(K2)=2.5, DS=19; DH(K3)=10.0, DS=33. 0 C: K1=0.97, K2=0.56, K3=-0.17; 45 C: 1.27, 0.59, 0.09

Sn++ ISE NaClO4 25°C 3.0M U T 1952VRa (5730) 34
K(SnOH+L)=1.04
Method: Sn/Hg electrode. K=0.90(0 C), 0.85(35 C), 1.08(45 C)

Sn++ kin NaClO4 25°C 2.0M U K1=1.11 1951DPa (5731) 35

Sn++ ISE NaClO4 25°C 4.03M U K1=1.05 B2=1.76 1950DCa (5732) 36
K3=-0.62
K4=0

Sn++ vlt none 16°C 0.0 U K1=1.85 B2=2.31 1949RPa (5733) 37
K3=-0.37
K4=0.06

Sn++ kin oth/un 30°C var U K1=0.3 B2=-1.7 1944LTa (5734) 38

Sn++ sol none 25°C 0.0 U 1930RMa (5735) 39
I=0 corr. Ks(Sn(OH)L(H2O)+H=Sn+L+2H2O)=-2.75

Sn++ ISE none 25°C 0.0 U K1=1.51 B2=2.24 1928PRa (5736) 40
 K3=-0.21
 K4=-0.55

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

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

 Sn++ oth oth/un 25°C 0.0 M K1=5.22 B2= 8.90 2001SPa (7185) 41
 B3=12.9

Application of SIT theory to literature data.

 Sn++ vlt mixed 25°C var. U K1=9.5 B2=16.0 1990BMb (7186) 42
 Solvent:water-HF mixtures

 Sn++ vlt NaClO4 25°C 1.0M U K1=4.00 B2=6.85 1970BTb (7187) 43
 B3=9.43
 By rapid a.c. polarography: K1=4.08, B2=6.68, B3=9.46

 Sn++ ISE NaClO4 25°C 0.85M U T H K1=6.26 B2=8.76 1968HSc (7188) 44
 B3=9.25

Method: amalgam electrode, F membrane electrode. DH(B3)=43.3 kJ mol⁻¹, DS=306 J K⁻¹ mol⁻¹. At 45 C:K1=5.78,B2=8.70,B3=9.82; 60 C:K1=6.21,B2=9.06,B3=10.31

 Sn++ ISE NaClO4 25°C 2.0M U K1=4 1961CPc (7189) 45
 *K1=1.04 ?

 Sn++ vlt oth/un 25°C var U B4=7 1961DYa (7190) 46

 Sn++ vlt NaNO3 25°C 0.80M U I B3=9.92 1954SDa (7191) 47

B3=10.96 in 2.5 M KNO3.

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

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

 Sn++ ISE NaClO4 25°C 100% U K1=2.84 B2=5.67 1987GSa (8374) 48
 B3=8.20

Medium: dimethylacetamide

 Sn++ con NaClO4 25°C 1.00M U K1=0.76 B2=1.15 1976SLa (8375) 49
 B3=2.10

 Sn++ ISE non-aq 25°C 100% U K1=0.89 B2=1.79 1973SLb (8376) 50
 Medium: DMSO, 1 M (Li,Na)ClO4. SnHg electrode

Sn++ sol NaClO4 25°C 4.0M U K1=0.70 B2=1.13 1968HJa (8377) 51
 B3=2.13
 B4=2.30
 Kso(SnI2)=-5.08
 Ks(Me4N2SnI4)=-12.60

B6=2.59, B8=2.08

 NO3- HL Nitrate CAS 7697-37-2 (288)
 Nitrate;

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

Sn++ gl NaClO4 25°C 4.00M U I K1=0.15 B2=-0.06 1979ASa (9924) 52
 B3=-0.58
 B4=-0.98

 NbO4--- H3L Niobate CAS 69275-91-0 (6166)
 Niobate and polyniobates;

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

Sn++ EMF NaClO4 25°C 0.80M U 1970GUa (10277) 53
 K'=10.48

K': Sn(NbO3)2 + 2NbO3- = Sn(NbO3)4--

 OH- HL Hydroxide (57)
 Hydroxide;

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

Sn++ oth oth/un 25°C 0.0 M 2001SPa (12143) 54
 *K1=-3.8
 *B2=-7.8
 *B3=-17.5
 *B(2,2)=-2.4

Application of SIT theory to literature data. *B(3,4)=-5.6

 Sn++ gl NaClO4 25°C 3.0M C 1997SFb (12144) 55
 *K1=-3.77
 K(3Sn+4H2O=Sn3(OH)4+4H)=-6.87

 Sn++ gl NaCl 37°C 0.15M C I 1996DDa (12145) 56
 B(4Sn=Sn4(OH)6+6H)=-4.30
 I=1.0 M: B=-4.78, I=3.0 M: B=-5.01

 Sn++ gl NaClO4 25°C 3.00M U 1978SKd (12146) 57
 B3=24.8

 Sn++ ISE NaClO4 25°C 3.00M C 1977WAa (12147) 58
 B3=24.58

Sn++ EMF NaClO4 25°C 3.0M C 1976GOb (12148) 59

*K1=-3.70
*B(3,4)=-6.81

Method: Hg/Sn and glass electrode.

Sn++ ISE NaClO4 25°C 3.00M U 1974G0a (12149) 60

*K1=-3.70
*B(3,4)=-6.81

Method: emf with Sn amalgam electrode

Sn++ sol NaClO4 25°C 1.00M U 1966MIa (12150) 61

*Ks(SnO(s)+H=SnOH)=-0.28

Sn++ ISE NaClO4 25°C 3.00M U 1964LDa (12151) 62

*B(3,4)=-6.85
*B(2,3)=-6.7
*B(2,2)=-4.6

Sn++ vlt oth/un ? var U 1964PCa (12152) 63

K(SnO(s)+H2O=Sn+2OH)=-27.85
B3=24.60

Sn++ vlt none 22°C 0.0 U 1958KOb (12153) 64

Kso=-28.1

Sn++ gl NaClO4 25°C 3.0M U 1958TOa (12154) 65

*B(3,4)=-6.77
*B(2,2)=-4.45
*K1=-3.9

*B(m,n): mSn+nH2O=Snm(OH)n+nH. Also Sn/Hg electrode

Sn++ gl oth/un ? var U 1956TKb (12155) 66

Kso=-25.64(?)

Sn++ gl NaNO3 25°C 2.0M U 1955DAa (12156) 67

*K1=-3.2
K(SnO(s)+H=SnOH)=0.40

Sn++ EMF NaClO4 25°C 3.0M U T H 1952VRa (12157) 68

*K1=-1.70

*K1=-1.80(0 C), -1.62(35 C), -1.60(45 C). Method: Sn/Hg electrode
DH(K1)=-41.8 kJ mol⁻¹, DS=96.2 J K⁻¹ mol⁻¹

Sn++ sol none 25°C 0.0 U K1=11.93 B2=20.94 1942GLa (12158) 69

K3=4.45
*Kso=1.76
*Ks(SnO(s)+H=SnOH)=-0.31
Ks(SnO(s)+H2O=Sn(OH)2)=-5.30

Ks(SnO(s)+H2O+OH=Sn(OH)3)=-0.85, *K1=-2.07, *K2=-4.99, *K3=-9.55

Sn++ EMF none 25°C 0.0 C 1939G0a (12159) 70
*K1=-1.70

Method: H electrode

Sn++ EMF oth/un 25°C dil C I 1928PIa (12160) 71

*B(2,2)=-2.74

*Kso=2.79

Ks(SnO(s)+H2O=Sn+2OH)=-25.10

Method: H electrode. In 0.5 M KCl *B(2,2)=-4.10, *Kso=2.34, Kso=-25.50

0.5 M NaClO4: *B(2,2)=-2.96, *Kso=2.86, Kso=-24.97

Sn++ sol oth/un 25°C var U 1906GEa (12161) 72

K(SnO(s)+H2O=Sn(OH)2)=-4.87

K(SnO(s)+H2O+OH=Sn(OH)3)=-0.4

P04--- H3L Phosphate CAS 7664-38-2 (176)

Phosphate;

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

Sn++ gl NaClO4 25°C 3.0M C 2000CIb (13326) 73

K(Sn+H2PO4)=2.17

K(Sn+2H2PO4)=4.816

K(Sn+H2PO4=SnHPO4+H)=1.287

K(Sn+2H2PO4=SnH3(P04)2+H)=2.17

Additional method: Sn/Hg electrode. K(2Sn+2H2PO4=Sn2H2(P04)2+2H)=-1.32,

K(2Sn+H2PO4=SnPO4+2H)=-2.41, K(3Sn+3H2PO4=Sn3H3(P04)3+3H)=-6.10.

Sn++ sol NaClO4 25°C 0.20M U 1968CIb (13327) 74

K1eff=2.95

B3eff=5.45

B(SnHL)=7.83 (estimated)

B(SnH3L3)=10.04 (estimated)

P207---- H4L Pyrophosphate CAS 2466-09-3 (198)

Diphosphate; from (HO)2PO.O.PO(OH)2

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

Sn++ gl NaCl 25°C 0.15M C K1=12.046 B2=15.48 1991DWa (13648) 75

B(SnHL2)=22.66

B(SnH2L2)=28.31

B(SnH3L2)=32.11

B3=18.40

B(SnH-1L)=5.97

Sn++ ISE oth/un ? 1.0M U B2=16.42 1968PVb (13649) 76

Medium: K4L

Sn++ sol NaClO4 25°C 1.0M U 1966MIa (13650) 77
K(2SnO(s)+H+HxL)=5.8

Also other solubility equilibria

Sn++ vlt NaNO3 25°C 2.00M U 1964PCa (13651) 78
K(Sn+H2L)=4.48
K(SnH2L+H2L)=1.60
K(SnOH+H2L)=5.48
K(SnOH(H2L)+H2L)=1.82
K(Sn(OH)2(s)+H2L=Sn(OH)2H2L)=2.30, K(Sn(OH)2(s)+2H2L=Sn(OH)2(H2L)2)=2.18

Sn++ ISE oth/un 60°C var U K1=13.6 1958VRb (13652) 79

Sn++ con oth/un rt var U K1=14 1953VRa (13653) 80

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

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

Sn++ sol NaClO4 25°C 1.0M U 1966MIa (13903) 81
K(2SnO(s)+H+2HL)=7.26
K(4SnO(s)+2H+2HL)=11.68
K(2SnO(s)+H+2H2L)=5.0
K(4SnO(s)+2H+2H2L)=6.8

S-- H2L Sulfide CAS 7783-06-4 (705)
Sulfide;

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

Sn++ oth none ? 0 U 1990DKa (14468) 82
*Ks(SnS+H=Sn+HS)=-11.95

From recalculation of literature data.

Sn++ oth none 25°C 0.0 C 1989DYa (14469) 83
KSn+HS=SnS+H)=1.1

Calculated from literature data, based on K(H+S)=17.0.

Sn++ oth none 25°C 0 U 1988LIa (14470) 84
Kso(SnS)=-33.6
*Kso(SnS)=-16.3

Derived from thermodynamic data and K(H+S=HS)=17.3.

Sn++ ISE NaCl 24°C 0.10M M 1987PFb (14471) 85
Kso(SnS)=-28.0

Method: pH2S measured with Ag2S electrode. K(H+S=HS)=13.9 and K(H+HS=H2S)=6.92 assumed

Sn++ sol oth/un 20°C 0.0 U 1964GMa (14472) 86

Kso=-26.6

Sn++ oth none 25°C 0.0 U 1964PCa (14473) 87
K(SnL(s)+2H=Sn+H2S(g))=-5.20

From thermodynamic data. Alternative value K=-3.82

Sn++ oth none 25°C 0.0 U 1952LAb (14474) 88
Kso(SnL)=-26

From thermodynamic data

Sn++ ISE none 25°C 0.0 U 1939KMa (14475) 89
Kso(SnL)=-26.94

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

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

Sn++ ISE non-aq 25°C 100% U T K1=2.55 B2=4.35 1987GSa (15256) 90
B3=5.98

Medium: dimethylacetamide

Sn++ gl NaClO4 25°C 3.00M U M T K1=0.90 B2=1.40 1980FBa (15257) 91
B3=1.53

Sn++ con NaClO4 25°C 1.00M U T K1=1.03 B2=1.58 1976SLa (15258) 92

Sn++ ISE non-aq 25°C 100% U T K1=0.92 1973SLb (15259) 93
Medium: DMSO, 1 M LiClO4. Method: Sn amalgam electrode

Sn++ EMF NaClO4 25°C 1.0M U 1968PCa (15260) 94
K(MeSn+L)=1.48
K(MeSn+2L)=2.20
K(MeSn+3L)=3.32
K(Me2Sn+L)=0.43

K(Me2Sn+2L)=1

Sn++ ISE NaClO4 ? 1.60M U I K1=1.02 B2=1.54 1963GSa (15261) 95
B3=1.46

Method: Sn/Hg electrode. In MeOH, 1.6 M NaClO4: K1=3.7, B2=5.6, B3=6.55.
In Me2NCHO: K1=2.04, B2=3.70, B3=4.58. In MeCN: B4=16.82

Sn++ ISE NaClO4 20°C 2.20M U I K1=1.17 B2=1.77 1961G0a (15262) 96
B3=1.72 or 1.76

Method: Sn/Hg electrode. In MeOH: B3=4.68. Also in MeOH/H2O and acetone/H2O mixtures

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++	vlt	NaNO3	25°C	1.00M	U		K1=1.29 B2=1.65	1981PMa (16549)	97

Se--		H2L		Selenide			(6335)		
Selenide;									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++	oth	none	25°C	0.0	U		Kso=-38.4	1964BUe (16949)	98

CH2O2		HL		Formic acid			CAS 64-18-6 (37)		
Methanoic acid; H.COOH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++	sol	oth/un	20°C	0.70M	U		B2=8.05	1970WSb (17647)	99

CH4O6Cl2P2		H4L					CAS 10596-23-3 (2370)		
Dichloromethanediphosphonic acid; Cl2.C(P03H2)2									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++	gl	R4N.X	25°C	0.10M	U		K1=13.59 K(Sn+HL)=8.9 K(SnL+Sn)=8.0	1984CLb (17954)	100
Medium: Me4NNO3									

CH6O6P2		H4L		Medronic acid			CAS 1984-15-2 (2384)		
Methanediphosphonic acid; CH2(P03H2)2									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++	gl	R4N.X	25°C	0.10M	U		K1=13.6 K(Sn+HL)=7.7	1984CLb (18290)	101
Medium: Me4NNO3									

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
Sn++	gl	NaClO4	25°C	1.0M	C	I	K1=6.655 B2=10.66	2001CTa (19063)	102
Sn amalgam electrode also used									
At I=0, extrapolation using SIT: K1=8.18, B2=12.19									

Sn++	sol	NaClO4	20°C	2.10M	U	M		1977KWa (19064)	103
B(SnL(C2H5COO))=10.78									
B(SnLA)=11.95									

B(SnLB)=12.62
 B(SnLC)=12.48
 B(SnLD))=10.90, B(SnLE)=11.39, B(SnL(HCOO))=9.6, B(SnL(CH3COO))=10.65.
 H2A=malonic, H2B=succinic, H2C=malonic, H2D=2-hydroxypropanoic, H2E=tartaric

 Sn++ sol NaClO4 20°C 0.70M U M B2=11.85 1977W0a (19065) 104
 B(SnL(CH2=CHCOO))=11.40
 B(SnL(CH3CHClCOO))=9.81
 B(SnL(CH2ClCH2COO))=10.30
 B(SnL(CH3CHBrCOO))=9.90
 B(SnL(CH2BrCH2COO))=10.08, B(SnL(CH2BrCOO))=9.90, B(SnL(C2H5COO))=10.78

Sn++ sol NaClO4 20°C 0.70M U M 1974W0b (19066) 105
 B(SnL(Glycolate))=10.84
 B(SnL(Thioglycolate))=10.87
 B(SnL(Chlorethanoate))=9.48
 B(SnL(Gly))=15.42

Sn++ sol oth/un 20°C 0.70M U M 1970WSb (19067) 106
 B(SnL(formate))=9.90
 B(SnL(ethanoate))=10.65
 B(SnL(tartrate))=11.39

Sn++ sol oth/un 20°C 0.70M U B2=11.85 1970WSb (19068) 107

 C2H3O2Br HL Bromoacetic acid CAS 79-08-3 (1309)
 Bromoethanoic acid; Br.CH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	sol	NaClO4	20°C	0.70M	U	M			1977W0a (19281)	108
									B(Sn(oxalate)L)=9.90	

Sn++ EMF NaClO4 20°C 0.70M U K1=3.06 1976W0a (19282) 109

 C2H3O2Cl HL Chloroacetic CAS 79-11-8 (34)
 Chloroethanoic acid; ClCH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	vlt	NaClO4	20°C	0.70M	U				1974W0a (19381)	110

Sn++ sol NaClO4 20°C 0.70M U M 1974W0b (19382) 111
 B(SnL(oxalate))=9.48

 C2H3O2I HL Iodoacetic acid CAS 64-69-7 (1312)
 Iodoethanoic acid; ICH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Sn++ vlt NaClO4 20°C 0.70M U K1=2.95 1974W0a (19418) 112

 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

Sn++ ISE NaClO4 25°C 3.00M C K1=3.472 B2=6.042 1976G0a (20168) 113
 B3=7.27

 Sn++ gl NaClO4 25°C 3.00M C K1=3.3 B2=6.0 1974G0a (20169) 114
 B3=7.3

 Sn++ vlt NaClO4 20°C 0.70M U K1=4.92 B2=9.65 1974W0a (20170) 115

 Sn++ sol oth/un 20°C 0.70M U B2=9.45 1970WSb (20171) 116

 C2H4O2S H2L Thioglycolic CAS 68-11-1 (596)
 Mercaptoethanoic acid; HS.CH2.COOH

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

Sn++ vlt NaClO4 20°C 0.70M U K1=4.30 B2=7.70 1974W0a (20369) 117
 B(SnL(oxalate))=10.87

 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

Sn++ vlt NaClO4 20°C 0.70M U K1=3.76 B2=7.60 1974W0a (20633) 118
 B(SnL(oxalate))=10.84

 C2H5NO2 HL Glycine CAS 56-40-6 (85)
 2-Aminoethanoic acid; H2N.CH2.COOH

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

Sn++ gl NaCl 37°C 0.15M C K1=10.02 1996DDa (21713) 119
 B(SnHL)=12.78
 B(SnH-1L)=7.34

 Sn++ vlt NaClO4 20°C 0.70M U K1=8.93 1974W0a (21714) 120

 Sn++ sol NaClO4 20°C 0.70M U M 1974W0b (21715) 121
 B(SnL(oxalate))=15.42

 C2H8O7P2 H4L HEDPA CAS 2809-21-4 (436)
 1-Hydroxyethane-1,1-diphosphonic acid; CH3.C(OH)(PO3H2)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	gl	R4N.X	25°C	0.10M	M			K1=15.68 K(SnL+Sn)=9.6	1984CLb (23396)	122

C3H4O2		HL		Acrylic acid				CAS 79-10-7	(2044)	
Propenoic acid; CH2:CH.COOH										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	sol	NaClO4	20°C	0.70M	U	M			1977W0a (23995)	123
B(Sn(oxalate)L)=11.40										

Sn++	EMF	NaClO4	20°C	0.70M	U			K1=4.13 B2=7.58	1976W0a (23996)	124
Sn++ cell, details given in Roczn.Chem. 45, 737 (1971)										

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
Sn++	ISE	NaClO4	20°C	0.70M	U			K1=6.15 B2=11.45	1971WSe (24554)	125

C3H5O2Br		HL		2-Br-propionic				CAS 598-72-1	(1313)	
2-Bromopropanoic acid; CH3.CH(Br).COOH										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	EMF	NaClO4	20°C	0.70M	U			K1=2.40 B2=5.60	1976W0a (24696)	126

C3H5O2Br		HL		3-Br-propionic				CAS 590-92-1	(1314)	
3-Bromopropanoic acid; Br.CH2.CH2.COOH										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	sol	NaClO4	20°C	0.70M	U	M			1977W0a (24706)	127
B(Sn(ox)L)=9.90										
Sn++	EMF	NaClO4	20°C	0.70M	U			K1=3.46	1976W0a (24707)	128

C3H5O2Cl		HL						CAS 598-78-7	(1951)	
2-Chloropropanoic acid; CH3.CH(Cl).COOH										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	sol	NaClO4	20°C	0.70M	U	M			1977W0a (24711)	129
B(Sn(oxalate)L)=9.81										

Sn++	EMF	NaClO4	20°C	0.70M	U			K1=2.76	1976W0a (24712)	130
Sn++ cell, details given in Roczn.Chem. 45, 737 (1971)										

 C3H5O2Cl HL CAS 107-94-8 (1436)
 3-Chloropropanoic acid; Cl.CH2.CH2.COOH

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

Sn++ sol NaClO4 20°C 0.70M U M 1977W0a (24733) 131
 B(Sn(oxalate)L)=10.30

Sn++ EMF NaClO4 20°C 0.70M U K1=4.11 1976W0a (24734) 132
 Sn++ cell, details given in Roczn.Chem. 45, 737 (1971)

 C3H6O2 HL Propionic acid CAS 79-09-4 (35)
 Propanoic acid; CH3.CH2.COOH

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

Sn++ sol NaClO4 20°C 0.70M U M 1977W0a (25052) 133
 B(Sn(oxalate)L)=10.78

 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

Sn++ EMF oth/un ? ? U K1=3.78 B2=8.02 1971WSe (25541) 134

 C4H6O5 H2L Malic acid CAS 617-48-1 (393)
 2-Hydroxybutane-1,4-dioic acid, Hydroxy-succinic acid; HOOC.CH2.CH(OH).COOH

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

Sn++ ISE NaClO4 20°C 0.70M U K1=6.48 B2=13.90 1971WSe (30727) 135

 C4H6O5 H2L Diglycolic acid CAS 110-99-6 (243)
 Di(carboxy)methyl ether, 2,2'-Oxydiethanoic acid; HOOC.CH2.O.CH2.COOH

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

Sn++ gl KCl 25°C 0.10M C K1=5.56 1984MMg (30930) 136

 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

Sn++ ISE NaClO4 20°C 0.70M U K1=6.25 B2=11.48 1971WSe (31355) 137

 Sn++ sol oth/un 20°C 1.35M U B2=9.91 1970WSb (31356) 138

Sn++ gl KCl 20°C 0.10M U K1=5.2 B2=9.91 1965SMe (31357) 139

C4H9NO7P2 H4L CAS 56269-30-8 (2397)

1-Pyrrolidone-5,5-diphosphonic acid; (O)C4H5N(PO3H2)2

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

Sn++ gl R4N.X 25°C 0.10M M 1984CLb (34404) 140

K(Sn+HL)=14.43

K(Sn+H2L)=8.1

C5H5NO L CAS 695-59-7 (397)

Pyridine N-oxide ; C5H4N(O)

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

Sn++ con oth/un 24°C 0.0 U 1977SKa (36719) 141

K(SnCl2+L)=1.34

K(SnCl2+A)=1.71

K(SnCl2+B)=2.39

K(SnCl2+C)=1.89

Medium: CH3CN. A=2-picoline-N-oxide, B=3-picoline-N-oxide, C=4-picoline-NO

C5H6O7 H3L (8107)

Carboxymethyltartronic acid;

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

Sn++ gl KCl 25°C 0.10M C K1=7.00 1984MMg (37492) 142

K(SnL+H)=1.56

C5H8O2 HL Acetylacetone CAS 123-54-6 (164)

Pentane-2,4-dione; CH3.CO.CH2.CO.CH3

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

Sn++ ISE KNO3 25°C 0.10M U 1963YTa (38085) 143

K(SnMe2+L)=6.6

C5H10OS2 HL CAS 110-50-9 (591)

(Butoxy)dithiomethanoic acid; CH3.CH2.CH2.CH2O.CSSH

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

Sn++ dis oth/un 25°C 0.25M U B2=5.7 1982SAa (40164) 144

C5H10O10P2 H6L CAS 51395-42-7 (2396)

2,3-Dicarboxypropane-1,1-diphosphonic acid; CH2(COOH)CH(COOH)CH(PO3H2)2

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

Sn++ gl R4N.X 25°C 0.10M M K1=17.31 1984CLb (40382) 145
K(Sn+HL)=12.9, K(Sn+H2L)=7.6
K(Sn+H2L)=7.6
K(Sn+H3L)=5.7
K(SnL+Sn)=8.9

C6H5NO2 HL Picolinic acid CAS 98-98-6 (391)
2-Pyridine-carboxylic acid; C5H4N.COOH

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

Sn++ ISE KNO3 25°C 0.10M U K(SnMe2+L)=5.1 1963YTa (42598) 146

C6H6O9 H4L Ditartronic ac (8108)
Di(2-Propane-1,3-dioic acid)ether;

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

Sn++ gl KCl 25°C 0.10M C K1=7.90 1984MMg (44539) 147
K(SnL+H)=2.32

C6H8O7 H3L Citric acid CAS 77-92-9 (95)
2-Hydroxypropane-1,2,3-tricarboxylic acid; HOOCCH2.CH(OH)(COOH).CH2COOH

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

Sn++ gl NaClO4 25°C 1.0M C I K1=7.82 2001CTa (46253) 148
B(SnHL)=9.49
B(SnH2L)=12.49
B(SnH-1L)=3.62

Sn amalgam electrode also used
At I=0, extrapolation using SIT: K10.19.18, B(SnHL)=12.1, B(SnH2L)=15.01

Sn++ EMF oth/un 20°C 0.20M C *K(SnH2L)=-5.5 1981JSa (46254) 149

*K(SnHL)=-7.4
*K(SnL)=-10.3

Method: Sn++/Sn electrode. Medium: 0.20 M citric acid, pH 1.8-4.9

C6H10N2O5 H2L ADA CAS 26239-55-4 (2747)
N-(2-Acetamido)iminodiethanoic acid; H2N.CO.CH2.N(CH2.COOH)2

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

Sn++ gl NaNO3 25°C 0.1M U M K1=9.73 1997SMb (47854) 150
K(ZnL+Gly)=4.26
K(ZnL+Ala)=4.22
K(ZnL+Pro)=5.02

K(ZnL+Val)=4.05

Ternary complexes with many other amino acids

C6H19PSi2 L (6862)

Bis(trimethylsilyl)phosphine; (Me3Si)2PH

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

Sn++ nmr non-aq 25°C 100% U T H 1993GCa (52241) 151
Method:NMR. Medium:Benzene. Temp. unknown. K:trans-(Sn(H-1L)2)2=cis-(Sn(H-1L)2)2. DH=-7.53 kJ mol-1; DS=-19.7.

C7H9O6ClP2 H4L CAS 53818-08-9 (4342)

4-Chlorophenylmethane diphosphonic acid; Cl.C6H4.CH(P03H2)2

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

Sn++ gl R4N.X 25°C 0.10M M K1=17.0 1984CLb (56527) 152
K(SnL+Sn)=12.5

C8H9N3O7 H2L Uramildiacetic CAS 13055-06-5 (185)

5-Amino-2,4,6-trioxo-1,3-perhydrodiazimino-N,N-diethanoic acid;

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

Sn++ ISE oth/un 20°C 0.0 U K1=7.65 1946SKa (60653) 153

C8H16O4 L 12-Crown-4 CAS 294-93-9 (174)

1,4,7,10-Tetraoxacyclododecane; cyclo(-O.(CH2.CH2.O)3.CH2.CH2-)

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

Sn++ vlt R4N.X 25°C 0.2M U K1=15.9 1999BBc (62726) 154
Medium: 0.2 M Bu4NPF6

C9H7NO HL Oxine CAS 148-24-3 (504)

8-Hydroxyquinoline (8-quinolinol);

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

Sn++ gl NaCl 25°C 0.15M C K1=8.5 B2=16.20 1997AWa (64348) 155

C10H16N2O8 H4L EDTA CAS 60-00-4 (120)

1,2-Diaminoethane-N,N,N',N'-tetraethanoic acid, Sequestric acid;

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

Sn++ ISE NaCl04 20°C 1.0M U K1=18.3 1968BLd (74171) 156
K(SnL+H)=2.5
K(SnHL+H)=1.5

Method: Sn/amalgam and glass electrodes

C10H20S4 L 14-Ane-S4 CAS 24194-61-4 (175)
1,4,8,11-Tetrathiacyclotetradecane; cyclo(-(S.CH2.CH2)2.CH2.(S.CH2.CH2)2.CH2-)

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

Sn++ vlt R4N.X 25°C 0.2M U K1=6.3 1999BBc (76160) 157
Medium: 0.2 M Bu4NPF6.

C13H12N4S L Dithizone CAS 60-10-6 (1801)
Diphenylthiocarbazone; C6H5.NH.NH.CS.N:N.C6H5

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

Sn++ sp NaClO4 25°C 0.10M U K1=6.35 B2=11.99 1973BSe (85474) 158

C14H22N2O8 H4L CDTA CAS 482-54-2 (200)
trans-1,2-Diaminocyclohexane-N,N,N',N'-tetraethanoic acid;

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

Sn++ ISE NaClO4 20°C 1.0M U K1=18.7 1968BRd (88778) 159
B(SnHL)=21.4
B(SnH2L)=23.2

C14H24N2O10 EGTA CAS 67-42-5 (349)
Ethyleneglycol-0,0'-bis(2-aminoethyl ether)-N,N,N',N'-tetraethanoic acid; H4L

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

Sn++ ISE NaClO4 20°C 1.0M U K1=8.86 B2=17.35 1968BRd (89936) 160
K3=2.5
K4=2.4
K5=1.6

C25H48N6O8 H3L Desferrioxamine CAS 70-51-9 (2488)
Desferrioxamine B; NH2.((CH2)5.NOH.CO.C2H4.CO.NH)2.(CH2)5.NOH.CO.CH3

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

Sn++ gl KCl 25°C 0.10M C K1=21.90 1996HV a (103821) 161
K(Sn+H3L)=8.75
K(Sn+H2L)=14.09
K(Sn+HL)=21.14
K(2Sn+HL)=31.18

B(Sn2L)=37.72

C27H34N2O4S HL Brilliant Green CAS 633-03-4 (5398)
Brilliant green, Basic Green 1;((C2H5)2N.C6H4)2CC6H5.HSO4

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++	dis	NaCl	?	0.80M	U			K(SnCl3+HL)=6.47	1971BS1 (104548)	162

e-		HL				Electron		(442)		
Electron;										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	oth	oth/un	25°C	0.0	M				2001SPa (941)	163
Calc from literature data. K(SnO2(s)+2H+2e=SnO(s)+H2O)=-4.60 (-136 mV); K(SnO2(s)+4H+2e=Sn(II)+2H2O)=-2.60 (-77 mV).										
Sn++++	oth	oth/un	25°C	0.0	M				2001SPa (942)	164
Calc from literature data. K(SnO2(s)+3H+2e=SnOH+H2O)=-6.39 (-189 mV); K(SnO2(s)+2H+2e=Sn(OH)2)=10.49 (-310 mV).										
Sn++++	oth	oth/un	25°C	0.0	M				2001SPa (943)	165
Calc from literature data. K(SnO3+3H+2e=Sn(OH)3)=11.03 (326 mV); K(SnO2(s)+2H2O+2e=Sn(OH)3+OH)=-34.10 (-1008 mV).										
Sn++++	EMF	oth/un	25°C	2.02M	U	I			1934HTa (944)	166
K(Sn+2e=Sn(II))=4.48(132.5 mV)										
Medium:HCl; K=4.67(1.14 M;138.2 mV), 4.75(0.85 M;140.4 mV), 4.88(0.53 M)										

Br-		HL				Bromide		CAS 10035-10-6	(19)	
Bromide;										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	sp	alc/w	35°C	50%	C T H				2001AJa (2320)	167
K(R3SnClBr1)=1.85										
Medium: 50% v/v EtOH/H2O. R=phenyl. Data for 35-65 C. DH=12.70 kJ mol-1, DS=76.78 J K-1 mol-1. Also data for R=4-Cl-, 4-CH3-, 3-CH3-, 2-CH3-phenyl.										
Sn++++	sp	non-aq	25°C	100%	U	M			1973GKa (2321)	168
K(SnI2L2+SnI4=2SnI3L)=-0.05										
B(SnI4+SbL4=2SnI2L2)=0.72										
B(SnI2L2+SnL4=2SnIL3)=-0.05										
Medium: CCl4										
Sn++++	ISE	NaClO4	25°C	3.0M	U				1968MPe (2322)	169
K(SnMe+L)=0.6										
Sn++++	ISE	NaClO4	25°C	3.0M	U				1965FMb (2323)	170
K(SnMe2+L) < -0.5										
Sn++++	dis	NaNO3	30°C	0.10M	U			K1=3.3	1965SMg (2324)	171

Kd(SnPh3OH(C6H6)+L)=-6.9

Kd(SnPh3OH(MIBK)+L)=-6.6

C03-- H2L Carbonate CAS 465-79-6 (268)

Carbonate;

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

Sn++++ gl NaCl 25°C 0.10M C I K1=9.86 B2=15.98 2004FGa (3375) 172
Data for 0.25-1.0 M NaCl. At I=0, K1=10.33, K2=6.36; at I=0.75 M NaCl,
K1=9.52, K2=5.96.

Sn++++ gl NaCl 25°C 0.10M C I 2004FGa (3376) 173
B(R3SnH-1(CO3))=-3.49
K(R3SnOH+CO3)=2.6
Data for 0.25-1.0 M NaCl. R is CH3. B: (CH3)3Sn+H2O+CO3=(CH3)3Sn(OH)CO3+H
At I=0, B=-3.38, K=2.8; at I=0.75 M NaCl, B=-4.05, K=2.3.

Sn++++ sol oth/un 300°C var U 1971KBd (3377) 174
B(Sn(OH)3L)=49.7

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

Chloride;

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

Sn++++ gl NaNO3 25°C 0.0 C 2004FGa (5737) 175
K((CH3)3Sn+Cl)=-0.6
K((C2H5)3Sn+Cl)=-0.5
K((C3H7)3Sn+Cl)=-0.4

Sn++++ sp alc/w 35°C 50% C T H 2001AJa (5738) 176
K(R3SnCl+Cl)=1.73
Medium: 50% v/v EtOH/H2O. R=phenyl. Data for 35-65 C. DH=12.25 kJ mol⁻¹,
DS=72.92 J K⁻¹ mol⁻¹. Also data for R=4-Cl-, 4-CH3-, 3-CH3-, 2-CH3-phenyl.

Sn++++ gl R4N.X 25°C 0.0 C I M K1=0.92 B2= 1.07 1996DFa (5739) 177
B(MH-1Cl)=-2.60
B(MH-2Cl)=-8.55
Metal is (CH3)2Sn++. Data for I=0.0 to 1.0 M for Me4NCl and NaCl media.

Sn++++ EMF oth/un 25°C 5.0M C K1=3.71 B2= 6.46 1978FRa (5740) 178
B3=8.78
B4=9.48
B5=11.23
B6=12.40
Medium: 5.0 M HClO4. method: Ag,AgCl/Cl electrode.

Sn++++ EMF oth/un 25°C var U K1=0.62 B2=1.38 1972DJa (5741) 179
K3=0.71

K4=0.33
K5=0.39

Sn++++ EMF non-aq 25°C 100% U 1971DTb (5742) 180
K5=4.13
K6=1.90
Medium: SeOCl₂, 0.5 M Et₄NClO₄

Sn++++ con non-aq 25°C 100% U 1971TKb (5743) 181
K3=6.1
Medium: MeCN

Sn++++ ISE NaClO₄ 25°C 3.0M U K1=1.69 B2=2.51 1968MPe (5744) 182
Metal:MeSn+++

Sn++++ ix oth/un 25°C 0.0 U K2=0.35 1966CPc (5745) 183
K3=-0.25
K4=-1.79
Metal:MeSn+++ . Method:anion exchange

Sn++++ ix oth/un 25°C 0.0 U K1=0.37 B2=0.14 1966CPc (5746) 184
K3=-1.45
Metal:Me₂Sn++

Sn++++ ix oth/un 25°C 0.0 U K1=-0.17 B2=1.40 1966CPc (5747) 185
Metal: Me₃Sn+

Sn++++ ISE NaClO₄ 25°C 3.0M U K1=0.38 B2=-0.14 1965FMb (5748) 186
Metal:Me₂Sn++

Sn++++ sp non-aq ? 100% U 1965Mca (5749) 187
K5=4.30
Medium:MeCN

Sn++++ dis NaNO₃ 30°C 0.10M U 1965SMg (5750) 188
Kd(Ph₃SnOH(C₆H₆)+L)=-7.1
K(Ph₃Sn+L)=3.0
Kd(Ph₃SnOH(i-BuCOMe)+L=Ph₃SnL+OH)=-6.9

Sn++++ gl oth/un 25°C 0.10M U 1964TYa (5751) 189
K(SnMe₂+L)=1.45

Sn++++ vlt none 22°C 0.0 U 1958K0a (5752) 190
Kso(SnL₂(OH)₂)=-56.3 ?

Sn++++ ISE oth/un 25°C 0.0 U 1950BJa (5753) 191
B6=4?

Sn++++ ISE oth/un 25°C 0.0 U 1946PYa (5754) 192
B6=0.82

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

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

Sn++++ gl NaCl 25°C 0.10M C I K1=2.47 2004FGa (7192) 193
B(R3SnH-1F)=-4.95

Data for 0.25-1.0 M NaCl. R is CH3. B: (CH3)3Sn+H2O+F=(CH3)3Sn(OH)F+H
At I=0, K1=2.61, B=-5.10; at I=0.75 M NaCl, K1=2.65, B=-4.25.

Sn++++ sol oth/un 22°C ? U T 1975KBa (7193) 194
*Ks(SnO2+F+2H2O=Sn(OH)4F)=-5.4

Sn++++ sol oth/un 50°C ? U T 1975KBa (7194) 195
*Ks(SnO2+F+2H2O=Sn(OH)4F)=-5.8

Sn++++ sol oth/un 200°C ? U 1975KBa (7195) 196
K(SnO2(s)+2HF=Sn(OH)2F2)=-3.5

Sn++++ sol oth/un 25°C ? U T 1975KBa (7196) 197
K(SnO2(s)+HF+H2O=Sn(OH)3F)=-5.

Sn++++ sol oth/un 300°C var U 1970KMd (7197) 198
B(Sn(OH)3F)=43.3
B(Sn(OH)3F2)=44.6
B(Sn(OH)3F3)=46.3
B(Sn(OH)4F)=49.8

At 90 atm. B(Si(OH)4F2)=50.8

Sn++++ EMF NaClO4 25°C 0.50M U K1=5.10 B2=9.85 1967CMA (7198) 199
K3=4.12
K4=3.09
K5=2.2

Metal ion: MeSn+++ . With Me2Sn++, I=1 M: K1=3.70, K2=2.87, K3=1.47, B3=8.04.
By ion exchange: B3=8.07, K4=0.09. With Me3Sn+: K1=2.28, K2=0.61

Sn++++ vlt oth/un 25°C var U 1954SDa (7199) 200
B6=ca.25

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

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

Sn++++ nmr non-aq 22°C 100% U M 1968DEa (7435) 201
K(2SnF5A=cis-SnF4A2+SnF6)=-.52
K(2SnF5A=tr-SnF4A2+SnF6)=-1.03

Medium: CHCl3.A=CNO. Data also for other halogens

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

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

Sn++++ con non-aq 25°C 100% U 1971TKb (8378) 202
K3=7.5

Medium: MeCN

Sn++++ dis NaNO3 30°C 0.10M U K1=3.7 1965SMg (8379) 203
Kd(Ph3SnOH(CHCl3)+I)=-6.1
Kd(Ph3SnOH(MIBK)+I)=-6.2

Sn++++ kin non-aq 20°C 100% U TI 1963GNa (8380) 204
K(Me3SnBr+L)=1.96
K(Et3SnBr+L)=2.23
K(i-Pr3SnBr+L)=1.85
K(Bu3SnBr+L)=2.09

Medium:Me2CO. Data also at 11 C

Sn++++ dis NaClO4 25°C 5.0M U 1962GSa (8381) 205
Kd(SnL4 into C6H6)=3.3

Sn++++ dis oth/un 25°C var U 1959GIa (8382) 206
Kd(SnL4 into C6H6)>=3.3

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

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

Sn++++ gl NaClO4 25°C 3.0M U 1974PEb (10259) 207
K(SnMe2+4L)=2.45
K(3SnMe2+3L=(SnMe2)3L3)=12.98

OH- HL Hydroxide (57)
Hydroxide;

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

Sn++++ gl oth/un 25°C 0.72M C I 2004FGa (12162) 208
K(R3Sn+H2O=R3Sn(OH)+H)=-6.23

Medium: synthetic seawater. Cation is (CH3)3Sn+.
Data for 5-45% salinity. At 5%, *K1=-6.16; at 15%, *K1=-6.19.

Sn++++ gl oth/un 25°C 0.72M C I 2004FGa (12163) 209
K(R3Sn+H2O=R3Sn(OH)+H)=-6.47

Medium: synthetic seawater. Cation is (C2H5)3Sn+.
Data for 5-45% salinity. At 5%, *K1=-6.37; at 15%, *K1=-6.42.

Sn++++ gl oth/un 25°C 0.72M C I 2004FGa (12164) 210
K(R3Sn+H2O=R3Sn(OH)+H)=-6.42

Medium: synthetic seawater. Cation is (C3H7)3Sn+.

Data for 5-45% salinity. At 5%, *K1=-6.31; at 15%, *K1=-6.36.

Sn++++ gl NaNO3 25°C 0.10M C 2003AMa (12165) 211

*K1=-3.13
*B2=-8.35
*B3=-18.84
*B4=-30.17

Cation is (CH3)2Sn++. *B(2,2)=-4.46, *B(2,3)=-8.98.

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (12166) 212

*K1=-2.39
*B2=-7.89
*B3=-17.76
*B4=-29.03

Metal is R2Sn(IV), where R = vinyl. *B(2,2)=-3.08. *B(2,3)=-7.98.

Sn++++ gl KNO3 25°C 0.10M M TI 2001ASa (12167) 213

*K1=-3.03
*B2=-8.21
*B3=-18.73
*B4=-29.54

Metal ion is (CH3)2Sn++. Data for 15-35 C and for 25-75% v/v dioxane/H2O.

*B(2,2)=-3.12, *B(2,3)=-8.13, *B(2,4)=-13.59.

Sn++++ gl KNO3 25°C 0.10M M H 2001ASa (12168) 214

Metal ion is (CH3)2Sn++. From equilibrium data for 5-35 C: DH(K1)=40.2
kJ mol⁻¹, DH(K2)=-11.5, DH(K3)=-21.4, DH(K4)=-20.9, DH(B(2,2))=65.0.

Sn++++ gl NaNO3 25°C 0.10M M TIH 2001MSc (12169) 215

*K1=-5.90
*B2=-16.40
*B(2,1)=-2.44
*B(2,2)=-8.56

Metal ion is (CH3)3Sn+. *B(2,3)=-18.70. Data for 15, 20, 30 and 35 C.

DH values. Also data at 25 C for 25%-75% dioxane/H2O.

Sn++++ gl NaClO4 25°C 0.0 C I 1999FGa (12170) 216

*K1=-2.86
*B2=-8.16
*B3=-19.35
*B(2,2)=-4.99

*B(2,3)=-9.06. By calorimetry, DH(*K1)=33.1 kJ mol⁻¹, DH(*B2)=62.1,
DH(*B3)=97.7, DH(*B(2,2))=60, DH(*B(2,3))=84. Data for 0.09-3.8 M.

Sn++++ gl NaClO4 25°C 0.10M C 1999JNa (12171) 217

*K1=-3.12
*B2=-8.33

*B3=-19.33

Metal is Me₂Sn⁺⁺.

Sn⁺⁺⁺⁺ gl NaNO₃ 25°C 0.0 C IH 1999SFb (12172) 218

K((CH₃)₃Sn+OH)=7.86

*K1((CH₃)₃Sn)=-6.14

Values from data in 1.8-4.3 m NaNO₃, NaCl, KCl and Na₂SO₄.

By calorimetry, DH(K1)=-30 kJ mol⁻¹, DH(*K1)=25.8.

Sn⁺⁺⁺⁺ gl NaClO₄ 25°C 0.10M C 1999SRa (12173) 219

*K1=-3.175

*B(1,2)=-8.415

*B(1,3)=-19.459

*B(2,2)=-4.95

M is Sn(CH₃)₂⁺⁺. *B(2,3)=-9.96.

Sn⁺⁺⁺⁺ gl NaClO₄ 25°C 0.10M C 1998BGa (12174) 220

*K1=-3.17

*B(1,2)=-8.42

*B(1,3)=-19.45

*B(2,2)=-4.96

Metal is (CH₃)₂Sn(IV). *B(2,3)=-9.71.

Sn⁺⁺⁺⁺ gl NaCl 25°C 1.0M C TI 1998CFa (12175) 221

*K1(Me₃Sn)=6.32

Data for 15-45 C, I=0.15 - 1.5 M with NaCl and NaNO₃. At I=0: *K1=6.143

Sn⁺⁺⁺⁺ gl diox/w 25°C 75% C 1998SMb (12176) 222

*K1=-5.71

Metal is (C₆H₅)₃Sn⁺ Medium: 75% dioxane/H₂O, 0.10 M NaNO₃.

Sn⁺⁺⁺⁺ gl NaClO₄ 25°C 0.10M C I 1997TNa (12177) 223

*B(1,1)=-6.35

*B(1,2)=-17.90

*B(2,1)=-4.59

Metal is Me₃Sn⁺. In 0.10 M NaNO₃: *B(1,1)=-6.26, *B(1,2)=-17.63,

*B(2,1)=-4.84.

Sn⁺⁺⁺⁺ gl NaClO₄ 25°C 0.10M C 1997TNa (12178) 224

*B(1,1)=-6.42

*B(1,2)=-17.70

*B(2,1)=-4.73

Metal is Et₃Sn⁺.

Sn⁺⁺⁺⁺ gl R4N.X 25°C 0.0 C I 1996DFa (12179) 225

*K1=-2.86

*B2=-8.16

*B3=-19.35

*B(2,2)=-4.99

Metal is (CH₃)₂Sn⁺⁺. *B(2,3)=-9.06. Data for I=0.0 to 1.0 M for Me₄NCl,

NaNO₃ and NaClO₄.

Sn++++ gl none 25°C 0 M I K1=11.14 B2=19.84 1996SFa (12180) 226
B3=22.65
B(M₂(OH)₂)=23.01
B(M₂(OH)₃)=32.94
K(M(OH)+H)=2.86

Metal ion: SnMe₂⁺⁺. I=0.1 to 0.8 M NaClO₄ and NaNO₃, extrapolated to 0

Sn++++ gl NaNO₃ 25°C 0.10M C 1994NAa (12181) 227
*B(1,1)=-3.176
*B(1,2)=-8.423
*B(2,2)=-4.687
*B(2,3)=-9.644

*B(2,4)=-15.443, *B(3,2)=-3.205, *B(4,5)=-11.724, *B(4,6)=-16.365.

Metal is Sn(Me)₂⁺⁺. *B(p,q): pSn(Me)₂=(Sn(Me)₂)_p(OH)_q+qH.

Sn++++ gl NaNO₃ 25°C 0.10M M 1992SHc (12182) 228
*K1=-5.79

Metal ion is (CH₃)₃Sn⁺.

Sn++++ nmr NaClO₄ 25°C 0.50M C I 1991HKa (12183) 229
*K(Sn(CH₃)₃(H₂O)₂)=-6.34

In 0.5 M KNO₃, *K=-6.35; in 0.5 M KCl, *K=-6.38.

Sn++++ gl KNO₃ 25°C 0.10M C H 1989APa (12184) 230
*K1=-3.124
*B(2,2)=-5.05
*B(2,3)=-9.74
*B(1,2)=-8.428

*B(1,3)=-19.450. M=(CH₃)₂Sn(IV). Also DH by calorimetry

Sn++++ gl KNO₃ 25°C 0.10M C H 1989APa (12185) 231
*K1=-3.102
*B(2,2)=-5.07
*B(2,3)=-10.26
*B(1,2)=-8.563

M=(CH₃CH₂)₂Sn(IV). Also DH by calorimetry.

Sn++++ gl NaClO₄ 25°C 0.30M C 1987HOa (12186) 232
*K1=-6.26

M = Sn(CH₃)₃(H₂O)₂⁺

Sn++++ gl NaClO₄ 25°C 0.30M U 1985HDA (12187) 233
K(Me₃SnOH+H)=4.74

Sn++++ gl none 25°C 0.0 M K1=14.09 B2=27.69 1978TEa (12188) 234
B3=41.45
B4=54.99

Sn++++ sol oth/un 25°C U T 1973KBa (12189) 235
 $K_s(\text{Sn}(\text{OH})_4(\text{s})=\text{Sn}(\text{OH})_4)=-6.44$
 $K_s=-6.04(100\text{ C}), -5.49(200\text{ C}), -5.25(300\text{ C}), -5.07(400\text{ C}).$
 $\log K_s4=-746.4/T-3.959$

Sn++++ sp none 25°C 0.00 U 1973KBa (12190) 236
 $*K1=-0.49$
 $*K2=0.19$
 $*K3=0.88$
 $*K4=2.03$

Sn++++ gl alc/w 25°C 40% U 1972DEa (12191) 237
 $K'=-5.1$
 $K''=-4$
 Medium: 40% w/w MeOH/H₂O, 1 M NaCl. $K': 0.8(\text{EtSn})_{10}(\text{OH})_{28} + 0.6\text{H}_2\text{O} =$
 $(\text{EtSn})_8(\text{OH})_{23} + 0.6\text{H}.$ $K'': 0.1(\text{EtSn})_{10}(\text{OH})_{28} + 0.2\text{H}_2\text{O} = \text{EtSn}(\text{OH})_3 + 0.2\text{H}$

Sn++++ gl alc/w 25°C 40% U 1972DEa (12192) 238
 $K'=-5.75$
 $K''=-9.7$
 Medium: 40% w/w MeOH/H₂O, 1 M NaCl. $K': 3\text{EtSn}(\text{OH})_3 + \text{H}_2\text{O} =$
 $(\text{EtSn})_3(\text{OH})_{10} + \text{H}.$ $K'': 1/3(\text{EtSn})_3(\text{OH})_{10} + 2/3\text{H}_2\text{O} = \text{EtSn}(\text{OH})_4 + 2/3\text{H}$

Sn++++ sp KNO₃ 25°C 1.00M U $K1=14.57$ $B2=28.68$ 1971NAc (12193) 239
 $B3=42.35$
 $B4=55.13$

Sn++++ sol oth/un 25°C U 1970BKa (12194) 240
 $Ks4=-6.4$
 $Ks5=-4.8$
 Medium: NaOH. $K_{sn}: \text{Sn}(\text{OH})_4(\text{s})(\text{cassiterite}) + (n-4)\text{OH} = \text{Sn}(\text{OH})_n$

Sn++++ gl alc/w 25°C 40% U 1970DEb (12195) 241
 $K'=-25.5$
 $K''=-17.1$
 Medium: 40% w/w MeOH/H₂O, 1 M NaCl. $K': 10(\text{EtSn})_3(\text{OH})_6 + 21\text{H}_2\text{O} =$
 $3(\text{EtSn})_{10}(\text{OH})_{27} + 21\text{H}.$ $K'': (\text{EtSn})_6(\text{OH})_{15} + 12\text{H}_2\text{O} = 6(\text{EtSn})_{10}(\text{OH})_{27} + 12\text{H}$

Sn++++ gl alc/w 25°C 20% U 1970DEb (12196) 242
 $*K=\text{ca.}-2$
 Medium: 20% w/w MeOH/H₂O, 1 M NaCl. $*K: \text{EtSnCl}_2 + \text{H}_2\text{O} = \text{EtSnCl}_2\text{OH} + \text{H}$

Sn++++ sol oth/un 100°C U 1970KBb (12197) 243
 $K1=\text{ca.}36.5$
 $B2=\text{ca.}41.6$
 $B3=46.7$
 $B4=51.4$
 $B5=54.6, B6=57.6.$ $K_{so}(\text{Sn}(\text{OH})_4(\text{s})=\text{Sn} + 4\text{OH})=-53.77.$ Medium: MOH(M=Na,K) at various concentrations at 17 atm

Sn++++ sol oth/un 300°C U T 1970Kmd (12198) 244
B3=41.7
B4=48.7

At 90 atm. At 100 C: B4=51.4

Sn++++ gl alc/w 25°C 40% U 1969DEb (12199) 245
*K(EtSn+H2O=EtSnOH+H)=-2.2
*B(3,6)=-7.9
*B(10,27)=-39.5
*K((EtSn)10(OH)27)=-4.4
*K((EtSn)10(OH)28=(EtSn)100(OH)27 + H)=ca.-7.2. Medium: 40% w/w MeOH/H2O,
1 M KCl. *B(n,m): nEtSn + mH2O=(EtSn)n(OH)m + mH

Sn++++ gl KCl 25°C 1.0M U I 1968ACb (12200) 246
*K1(SnEt2)=-2.65
*B2(SnEt2)=-4.84
*B(2,2-SnEt2)=-4.00
*B(2,3-SnEt2)=-7.60

Data also in 'dilute' soln. In 2 M KCl: *K1(Me3Sn)=-6.40, *B(1,2-Me3Sn)=-5.45
*B((2,2-Me3Sn)=-13.85

Sn++++ gl NaClO4 25°C 3.00M U 1966TFa (12201) 247
*K1(SnMe2)=-3.54
*K1(SnEt2)=-3.40
*K1(SnPr2)=-2.92
K(2SnMe2OH=(SnMe2OH)2)=2.48
K(2Et2SnOH=(Et2SnOH)2)=2.43, 2.27(Pr)

Sn++++ gl NaClO4 25°C 3.00M U 1966TFa (12202) 248
*K1(SnMe3)=-6.60
*K1(SnEt3)=-6.81

Sn++++ dis NaNO3 30°C 0.10M U 1965SMg (12203) 249
K(SnPh3+L)=9.2
Kd((Ph)3Sn(OH)=(Ph)3Sn(OH)(org)0=4.0 (org=C6H6), 2.8 (org=iso-BuCOMe)

Sn++++ gl NaClO4 25°C 3.00M U I 1964TYa (12204) 250
*K1(SnMe2)=-3.55
*B2(SnMe2)=-9.00
*B(2,2-SnMe2)=-4.52
*B(4,6-SnMe2)=-16.14
Alternative model: *K1=-3.54, *B2=-8.98, *B(2,2)=-4.60, *B(2,3)=-9.76,
*B(3,4)=-10.48. In D2O: *K1=-4.06, *B2=-10.16, *B(2,2)=-4.22, *B(4,6)=-16.14

Sn++++ gl NaCl 25°C 0.10M U 1964TYa (12205) 251
*K1(SnMe2)=-3.245
*B2(SnMe2)=-8.52
*B(2,2)=-5.00
*B(4,6)=-18.53

Other models also treated

Sn++++ gl NaClO4 25°C 3.00M U I 1964TYb (12206) 252
*K1(SnEt3)=-6.81

In D20 *K1(Et3Sn)=-7.50

Sn++++ gl NaClO4 25°C 3.0M U 1963NTa (12207) 253

*K1=-3.50
*B(2,2)=-4.34

Sn as Et2Sn. *B(2,2): 2Sn+2H2O=Sn2(OH)2+2H

Sn++++ gl KNO3 25°C 0.10M U 1963YTa (12208) 254

*K1=-3.2
*B(2,2)=-4.6

Metal as Me2Sn. *B(2,2): 2Sn+2H2O=Sn2(OH)2+2H

Sn++++ gl NaClO4 25°C 3.0M U 1962TOb (12209) 255

*K1=-3.45
*B2=-9.0
*B(2,2)=-4.7
*B(2,3)=-9.8

Metal as Me2Sn

Sn++++ oth oth/un 25°C var U 1958HEa (12210) 256

Medium: 0-90% H2O2. By tyndallometry. Ks(SnO2(s)+4H2O=Sn(OH)6+2H)=-12.26
Ks(Al2(Sn(OH)6)3(s)=2Al+3Sn(OH)6)=-20.5 ?

Sn++++ gl oth/un 25°C dil U 1953RSa (12211) 257

*K1(SnMe2)=-3.11

P04--- H3L Phosphate CAS 7664-38-2 (176)

Phosphate;

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

Sn++++ gl KNO3 25°C 0.10M M TI 2001ASa (13328) 258

K(Me2Sn+H2PO4)=6.41
K(Me2Sn+2H2PO4)=10.94

Metal ion is (CH3)2Sn++. Data for 15-35 C and for 25-75% v/v dioxane/H2O.

Sn++++ gl NaNO3 25°C 0.10M M 1992SHc (13329) 259

K(R3Sn+HPO4)=4.30

Metal ion is (CH3)3Sn+.

P207--- H4L Pyrophosphate CAS 2466-09-3 (198)

Diphosphate; from (HO)2PO.O.PO(OH)2

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

Sn++++ gl NaCl 25°C 0.15M C K1=22.61 B2=27.08 1991DWa (13654) 260

B(SnHL)=23.56

B(SnHL2)=33.36
B(SnH-1L2)=19.84

Sn++++ gl NaCl04 25°C 0.30M C 1987H0a (13655) 261
B(SnHL)=10.80

Sn=Sn(CH3)3(H2O)2

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

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

Sn++++ cal KNO3 25°C 0.10M C H 1992ACa (13904) 262
Metal is Sn(Me)2++. DH(K1)=13.3 kJ mol-1, DS=234; DH(SnHL)=15.9, DS=342;
DH(SnH2L)=25.9, DS=431; DH(SnL2)=13.4, DS=277; DH(Sn2L)=23.0, DS=395.

Sn++++ gl KNO3 25°C 0.10M C 1990ACa (13905) 263
K(SnMe2+L)=9.88
B((SnMe2)L2)=12.13
B((SnMe2)HL)=15.02
B((SnMe2)H2L)=17.67

B((SnMe2)2L)=16.07

S-- H2L Sulfide CAS 7783-06-4 (705)
Sulfide;

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

Sn++++ oth none 25°C 0 U 1988LIa (14476) 264
Kso(SnS2)=-70.8
*Kso(SnS2)=-36.2

Derived from thermodynamic data and K(H+S=HS)=17.3.

Sn++++ gl NaCl 25°C 1.0M U 1974LDa (14477) 265
K(3EtSnS3+3H+6H2O)=(EtSn)3(OH)6(HS)8+HS)=31.4

Sn++++ ISE NaNO3 25°C 0.10M U 1968HRa (14478) 266
K(SnS2(s)+S=SnS3)=5.31

Sn++++ sol oth/un 25°C var U 1962DGB (14479) 267
Ks(SnL2(s)+HL=HSnL3)=-0.7

Sn++++ sol oth/un 20°C var U 1956BLa (14480) 268
K(SnL2(s)+OH=SnL2OH)=0.20
K(SnL2(s)+L=SnL3)=5.04

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

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

 Sn++++ gl NaNO3 25°C 0.0 C 2004FGa (16550) 269
 K((CH3)3Sn+S04)=0.37
 K((C2H5)3Sn+S04)=0.44
 K((C3H7)3Sn+S04)=0.5

Sn++++ gl R4N.X 25°C 0.0 C I M K1=2.53 B2= 2.98 1996DFa (16551) 270
 B(MH-1S04)=-1.22
 B(MH-2S04)=-8.27

Metal is (CH3)2Sn++. Data for I=0.0 to 1.0 M for Me4NCl and NaCl media.

 Sn++++ sp oth/un 25°C 0.0 U K2=2.3 1957BRd (16552) 271

Sn++++ sol oth/un 18°C 0.0 U T 1955BRa (16553) 272
 K(SnO2(s)+2H2L=SnL+L+2H2O)=-1.55(18 C), -1.30(30 C)

 Sn++++ sp oth/un 25°C var U B2=-0.85 1954BRb (16554) 273

 CH2O2 HL Formic acid CAS 64-18-6 (37)
 Methanoic acid; H.CO0H

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

 Sn++++ gl NaNO3 25°C 0.10M M K1=2.45 1992SHc (17648) 274
 Metal ion is (CH3)3Sn+.

 Sn++++ dis oth/un 18°C 0.10M U K1=2.65 1971MTa (17649) 275
 Metal ion: Sn(C3H7)3+

 CH4N2S L Thiourea CAS 62-56-6 (51)
 Thiocarbamide, Thiourea; (H2N)2CS

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

 Sn++++ sp oth/un 25°C 3.00M U I B2=0.91 1981VSb (17858) 276

CH4O L Methyl alcohol CAS 67-56-1 (597)
 Methanol; CH3.OH

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

 Sn++++ EMF alc/w 20°C 100% U 1971GSa (17901) 277
 B(Sn2L3)=36.67
 K(Sn+2HL=SnL2+2H) > 1

Medium: MeOH, 1 M LiCl or Li tosylate

 CH5N L Methylamine CAS 74-89-5 (155)
 Methylamine; CH3.NH2

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

Sn++++ gl diox/w 25°C 75% C K1=6.73 1998SMb (18032) 278
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl KCl 25°C 0.10M U K(SnMe3(OH)+L)=7.26 1992SHa (18033) 279

C2H2O2Cl2 HL CAS 79-43-6 (1282)
Dichloroethanoic acid; Cl2CH.COOH

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

Sn++++ dis oth/un 18°C 0.10M U K1=0.40 1971MTa (18399) 280
Metal ion: Sn(C3H7)3+

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

Sn++++ gl NaNO3 25°C 0.10M C K(R2Sn+L)=8.41 2003MOa (19069) 281
Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl NaClO4 25°C 0.30M C K1=1.49 1987HOa (19070) 282
Sn=Sn(CH3)3(H2O)2

C2H3N L Cyanomethane CAS 75-05-8 (1399)
Acetonitrile; CH3.CN

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

Sn++++ sp non-aq 25°C 100% U M K(SnA4+2L)=1.40 1976VCa (19195) 283
Medium: MeCN

C2H3O2Cl HL Chloroacetic CAS 79-11-8 (34)
Chloroethanoic acid; ClCH2.COOH

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

Sn++++ dis oth/un 18°C 0.10M U K1=1.73 1971MTa (19383) 284
Metal ion: Sn(C3H7)3+

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

Sn++++ gl diox/w 25°C 75% C K1=6.92 1998SMb (20172) 285

Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl none 25°C 0 M T K1=3.01 B2=5.25 1997SGa (20173) 286
B(ML(OH))=13.075
B(MH-1L)=-0.925

Metal ion: SnMe2++. Extrapolated to I=0

Sn++++ gl KNO3 25°C 0.10M C H K1=2.815 B2=4.62 1990AGa (20174) 287
B(MH-1L)=-1.320

M=Sn(CH3)2++. DH(K1)=-4.18, DH(B2)=27.2, DH(MH-1L)=33.8 kJ mol-1.
DS(K1)=40, DS(B2)=183, DS(MH-1L)=88.6 J K-1 mol-1.

Sn++++ gl NaClO4 25°C 0.30M C K1=1.25 1987HOa (20175) 288
Sn=Sn(CH3)3(H2O)2

Sn++++ dis oth/un 18°C 0.10M U K1=3.63 1971MTa (20176) 289

Metal ion is Sn(C3H7)3+

C2H4O2S H2L Thioglycolic CAS 68-11-1 (596)
Mercaptoethanoic acid; HS.CH2.COOH

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

Sn++++ gl NaClO4 25°C 0.10M C K1=13.85 2002Gnd (20370) 290
B((Me2Sn)H-1L)=7.64

Metal is (CH3)2Sn++. By spectrophotometry, K1=14.16

Sn++++ gl NaClO4 25°C 0.30M C K1=6.35 1987HOa (20371) 291
Sn=Sn(CH3)3(H2O)2

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

Sn++++ gl NaClO4 25°C 0.10M C K1=3.05 2002Gnd (20634) 292
B((Me2Sn)H-1L)=-0.12

Metal is (CH3)2Sn++.

C2H5NO2 HL Glycine CAS 56-40-6 (85)
2-Aminoethanoic acid; H2N.CH2.COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (21716) 293
K(R2Sn+L)=10.65
K(R2Sn+2L)=19.38
K(R2Sn+H+L)=13.96

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl NaClO4 25°C 0.10M C K1=7.99 1999SRa (21717) 294
B(MHL)=11.03
B(MH-1L)=2.40

M is Sn(CH3)2+.

Sn++++ gl diox/w 25°C 75% C K1=6.75 1998SMb (21718) 295
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl KCl 25°C 0.10M U 1992SHa (21719) 296
K(SnMe3(OH)+L)=6.38

Sn++++ gl diox/w 20°C 75% M T H 1988SSf (21720) 297
K(SnMe2+L)=11.31
30 C: K=11.35; 40 C: K=10.68. DH=-47.8 kJ mol⁻¹, DS=55 J K⁻¹ mol⁻¹.

C2H5NO2 HL Acetohydroxamic CAS 546-88-3 (2766)
Acetohydroxamic acid, N-Hydroxyacetamide; CH3.CO.NHOH

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

Sn++++ gl diox/w 30°C 75% U K1=12.63 B2=20.98 1980NGa (21815) 298

C2H6N2O L Glycinamide CAS 598-41-4 (60)
2-Aminoethanoic acid amide; H2N.CH2.CO.NH2

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (21954) 299
K(R2Sn+L)=7.47
K(R2Sn+L=R2SnL(OH)+H)=3.62

Metal is R2Sn(IV), where R = vinyl.

C2H6OS HL CAS 60-24-2 (841)
2-Mercaptoethanol; HS.CH2.CH2.OH

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

Sn++++ gl NaNO3 25°C 0.10M M K1=6.98 1992SHc (22081) 300
Metal ion is (CH3)3Sn+.

Sn++++ gl NaClO4 25°C 0.30M C K1=5.94 1987HOa (22082) 301
Sn=Sn(CH3)3(H2O)2

C2H6OS L DMSO CAS 67-68-5 (329)
Dimethylsulfoxide; (CH3)2.SO

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

Sn++++ nmr non-aq 27°C 100% U M 1987HHa (22124) 302
K(Bu3SnCl+L)=1.31

K(Bz3SnCl+L)=1.38

K(Ph3SnCl+L)=1.55

Medium: DMSO/CDCl3

C2H7N L Ethylamine CAS 75-04-7 (156)
Ethylamine; CH3.CH2.NH2

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

Sn++++ g1 NaNO3 25°C 0.10M M K1=7.35 1992SHc (22279) 303
Metal ion is (CH3)3Sn+.

C2H7NS HL CAS 60-23-1 (588)
2-Aminoethanethiol; H2N.CH2.CH2.SH

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

Sn++++ g1 NaNO3 25°C 0.10M C 2003M0a (22499) 304
K(R2Sn+L)=15.58
K(R2Sn+2L)=19.58
K(R2Sn+H+L)=20.40

Metal is R2Sn(IV), where R = vinyl.

Sn++++ g1 diox/w 25°C 75% C K1=11.28 1998SMb (22500) 305
B((C6H5)3SnHL)=19.70

Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ g1 KCl 25°C 0.10M U 1987H0a (22501) 306
B(SnHL)=15.52

Sn=Sn(CH3)3(H2O)2

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

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

Sn++++ g1 NaNO3 25°C 0.10M C 2003M0a (23231) 307
K(R2Sn+L)=14.02
K(R2Sn+2L)=20.24
K(R2Sn+H+L)=19.26

Metal is R2Sn(IV), where R = vinyl.

Sn++++ g1 NaNO3 25°C 0.10M M K1=7.03 1992SHc (23232) 308
B(R3SnHL)=13.72

Metal ion is (CH3)3Sn+.

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

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

Sn++++ gl diox/w 25°C 75% C K1=3.92 1998SMb (23926) 309
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl KCl 25°C 0.10M U K(SnMe3(OH)+L)=3.46 1992SHa (23927) 310

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

Sn++++ gl NaNO3 25°C 0.10M C K(R2Sn+L)=6.71 2003MOa (24555) 311
K(R2Sn+2L)=12.10

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl none 25°C 0 M T K1=5.43 B2=7.21 1997SGa (24556) 312
B(ML(OH))=13.99
B(MH-1L)=-0.01
B(MHL)=7.81

Metal ion: SnMe2++. Extrapolated to I=0

Sn++++ gl KNO3 25°C 0.10M C H K1=4.543 B2=6.14 1990AGa (24557) 313
B(MH-1L)=-0.744
B(MHL)=6.95

M=Sn(CH3)2++. DH(K1)=23.48, DH(B2)=13.0, DH(MH-1L)=42.6, DH(MHL)=23.0
kJ mol-1. DS(K1)=165, DS(B2)=165, DS(MH-1L)=129, DS(MHL)=209

Sn++++ gl NaClO4 25°C 0.30M C B(Sn2L)=3.37 1987HOa (24558) 314

Sn=Sn(CH3)3(H2O)2

C3H6O L Acetone CAS 67-64-1 (1912)
Propan-2-one, acetone; CH3.CO.CH3

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

Sn++++ sp non-aq 25°C 100% U M K(SnBr4+2L)=1.60 1976VCa (24857) 315

Medium: acetone

C3H6OS HL CAS 1892-31-5 (3550)
Thiopropionic acid; CH3.CH2.CO.SH

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

Sn++++ gl NaClO4 25°C 0.10M C K1=14.13 2002Gnd (24860) 316
B((Me2Sn)H-1L)=7.48

Metal is (CH3)2Sn+.

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

Sn++++ gl NaClO4 25°C 0.10M C K1=2.90 2002Gnd (25542) 317
B((Me2Sn)H-1L)=-0.09

Metal is (CH3)2Sn++.

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

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (26267) 318
K(R2Sn+L)=9.70
K(R2Sn+2L)=17.44
K(R2Sn+H+L)=13.07

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl diox/w 25°C 75% C K1=6.83 1998SMb (26268) 319
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl KNO3 25°C 0.10M C 1995ACa (26269) 320
K(SnMe2+L)=8.27
B((SnMe2)HL)=11.28
B((SnMe2)H-1L)=3.25
B((SnMe2)H-2L)=-5.93

Sn++++ gl diox/w 20°C 75% U T H 1988SSf (26270) 321
K(SnMe2+L)=11.54

30 C: K=11.36; 40 C: K=11.73. DH=-41.0 kJ mol⁻¹. DS=78 J K=1 mol⁻¹

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

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (26835) 322
K(R2Sn+L)=18.88
K(R2Sn+2L)=23.54
K(R2Sn+H+L)=23.76

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl diox/w 25°C 75% C K1=12.98 1998SMb (26836) 323
B((C6H5)3SnHL)=19.60

Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl NaNO3 25°C 0.10M M K1=7.22 1992SHc (26837) 324

B(R3SnHL)=15.42

Metal ion is (CH3)3Sn+.

Sn++++ gl NaClO4 25°C 0.30M U 1985HDa (26838) 325
B((Me3Sn)HL)=15.11
K(Me3Sn+HL)=4.66

C3H7NO3 HL Serine CAS 56-45-1 (49)
2-Amino-3-hydroxypropanoic acid; H2N.CH(CH2.OH)COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (27177) 326
K(R2Sn+L)=9.88
K(R2Sn+2L)=16.50
K(R2Sn+H+L)=13.39

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl diox/w 25°C 75% C K1=6.20 1998SMb (27178) 327
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl KCl 25°C 0.10M U 1992SHa (27179) 328
K(SnMe3(OH)+L)=5.71

C3H8OS2 H2L BAL CAS 59-52-9 (379)
2,3-Dimercaptopropan-1-ol; HS.CH2.CH(SH).CH2(OH)

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

Sn++++ gl NaClO4 25°C 0.30M C K1=8.50 1987HOa (27665) 329
B(SnHL)=16.22

Sn=Sn(CH3)3(H2O)2

C3H9N L n-Propylamine CAS 107-10-8 (2356)
1-Aminopropane; H2N.CH2.CH2.CH3

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

Sn++++ gl NaNO3 25°C 0.10M M K1=7.46 1992SHc (27833) 330
Metal ion is (CH3)3Sn+.

C3H9N L Trimethylamine CAS 75-50-3 (803)
Trimethylamine; (CH3)3.N

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

Sn++++ gl NaClO4 25°C 0.10M C K1=5.78 B2= 8.84 1997TNa (27863) 331
B(Me3SnH-1L)=-4.08

Metal is Me3Sn+.

C4H4N2O2 HL Uracil CAS 66-22-8 (412)
2,4-Dihydroxypyrimidone, 2,4-Pyrimidinedione;

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

Sn++++ gl KNO3 25°C 0.10M M K1=9.34 B2=16.60 2001ASa (28869) 332
Metal ion is (CH3)2Sn++.

Sn++++ gl NaNO3 25°C 0.10M M K1=6.39 2001MSc (28870) 333
B((CH3)3SnH-1L)=-0.96
Metal ion is (CH3)3Sn+.

Sn++++ gl diox/w 25°C 75% C K1=8.23 1998SMb (28871) 334
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

C4H5N3O HL Cytosine CAS 71-30-7 (1096)
2-Oxy-6-aminopyrimidine;

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

Sn++++ gl KNO3 25°C 0.10M M K1=4.44 B2= 8.54 2001ASa (29417) 335
Metal ion is (CH3)2Sn++.

Sn++++ gl NaNO3 25°C 0.10M M K1=2.96 2001MSc (29418) 336
B((CH3)3SnH-1L)=-2.95
Metal ion is (CH3)3Sn+.

C4H6O3 L CAS 108-24-7 (2538)
Acetic anhydride; CH3.CO2.CO.CH3

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

Sn++++ sp non-aq 5°C 100% U M 1976VCa (29751) 337
K(SnBr4+L)=-0.097
K(SnBr4L+L)=0.60

Medium: benzene

C4H6O4 H2L Succinic acid CAS 110-15-6 (112)
1,4-Butanedioic acid; HOOC.CH2.CH2.COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (30042) 338
K(R2Sn+L)=6.22
K(R2Sn+2L)=10.91

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl NaClO4 25°C 0.10M C K1=4.65 2002GND (30043) 339
B((Me2Sn)HL)=8.51
B((Me2Sn)H-1L)=-0.27

K(Me2Sn+HL=Me2SnHL)=3.27
K(Me2Sn+H2L=Me2SnL+2H)=-4.59

Metal is (CH3)2Sn++.

Sn++++ gl NaCl 25°C 0.0 C I 1999SFa (30044) 340
K(SnMe3+L)=2.374
K(SnMe3+L+H)=7.182
I=0.25 M: K values: 2.103, 6.63; I=0.5 M: 2.343, 6.99; I=1.0: 2.521, 7.06

Sn++++ gl KNO3 25°C 0.10M C H K1=4.54 1990AGa (30045) 341
B(MH-1L)=-0.30
B(MHL)=8.25
B(MHL2)=11.28
M=Sn(CH3)2++. DH(K1)=29.3, DH(MHL)=10.0, DH(MH-1L)=36.3 kJ mol-1.
DS(K1)=184, DS(MHL)=191, DS(MH-1L)=117 J K-1 mol-1

Sn++++ gl NaClO4 25°C 0.30M C 1987HOa (30046) 342
B(SnHL)=6.69
B(Sn2L)=3.93

Sn=Sn(CH3)3(H2O)2

C4H6O4S H2L Thiodiacetic CAS 123-93-3 (140)
2,2'-Thiodiglycolic acid, Thiodiethanoic acid; HOOC.CH2.S.CH2.COOH

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

Sn++++ gl KNO3 25°C 0.10M C H K1=3.103 1992CGa (30232) 343
B(SnH-1L)=-1.22
B(SnHL)=6.30

Metal is Sn(Me)2++. DH(K1)=21.3 kJ mol-1, DS(K1)=-132 J K-1 mol-1.
DH(SnHL)=6.7, DS(SnHL)=-143.

C4H6O4S H3L Thiomalic acid CAS 70-49-5 (109)
2-Mercaptosuccinic acid, 2-Sulfanyl-1,4-butanedioic acid; HOOC.CH(SH).CH2.COOH

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

Sn++++ gl NaClO4 25°C 0.10M C K1=14.18 2002Gnd (30364) 344
B((Me2Sn)H-1L)=7.24
B((Me2Sn)HL)=18.47
K(Me2Sn+HL=Me2SnHL)=13.88

Metal is (CH3)2Sn++.

Sn++++ gl NaClO4 25°C 0.30M C K1=5.98 1987HOa (30365) 345
B(Sn2L)=8.48

Sn=Sn(CH3)3(H2O)2

C4H6O4S2 H4L CAS 2418-14-6 (4264)
2,3-Dimercaptobutanedioic acid; HOOC.CH(SH).CH(SH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaClO4	25°C	0.10M	C			B2=43.41 B((Me2Sn)2H-1L2)=33.11 B((Me2Sn)HL)=26.11 B((Me2Sn)H2L)=29.07	2002Gnd (30397)	346

Metal is (CH3)2Sn++. Ligand is meso isomer.

C4H6O5	H2L	Malic acid	CAS 617-48-1	(393)
2-Hydroxybutane-1,4-dioic acid, Hydroxy-succinic acid; HOOC.CH2.CH(OH).COOH				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaClO4	25°C	0.10M	C			K1=5.09 B((Me2Sn)HL)=7.69 B((Me2Sn)H-1L)=1.51 K(Me2Sn+HL=Me2SnHL)=2.95 B((Me2Sn)H-2L)=-6.30	2002Gnd (30728)	347

Metal is (CH3)2Sn++. K(Me2Sn+H2L=Me2SnL+2H)=-2.93.

Sn++++	gl	KCl	31°C	0.10M	U			K(SnMe2+H2L=SnMe2L+2H)=-6.22 K(SnMe2H-1L+H)=4.79 K(SnMe2H-2L+H)=7.81	1976MPc (30729)	348
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C4H6O5	H2L	Diglycolic acid	CAS 110-99-6	(243)
Di(carboxy)methyl ether, 2,2'-Oxydiethanoic acid; HOOC.CH2.O.CH2.COOH				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	KNO3	25°C	0.10M	C	H		K1=5.184 B(SnH-1L)=-1.36	1992CGa (30931)	349

Metal is Sn(Me)2++. DH(K1)=3.8 kJ mol⁻¹, DS(K1)=-112 J K⁻¹ mol⁻¹.

C4H6O6	H2L	D-Tartaric acid	CAS 147-71-7	(93)
D-Tartaric acid, D-2,3-Dihydroxybutanedioic acid; HOOC.CH(OH).CH(OH).COOH				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	sp	oth/un	?	?	U			K1=0.54	1991MBd (30979)	350

Method: polarimetry

C4H6O6	H2L	DL-Tartaric acid	CAS 133-37-9	(94)
DL-Tartaric acid,DL-2,3-Dihydroxybutanedioic acid; HOOC.CH(OH).CH(OH).COOH				

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaClO4	25°C	0.10M	C			K1=4.33 B((Me2Sn)H-1L)=0.90 B((Me2Sn)HL)=6.40	2002Gnd (31030)	351

B((Me2Sn)H-2L)=-5.83
K(Me2Sn+HL=Me2SnHL)=2.49

Metal is (CH3)2Sn++. K(Me2Sn+H2L=Me2SnL+2H)=-2.48.

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

Sn++++ gl NaClO4 25°C 0.30M C 1987H0a (31358) 352
B(Sn2L)=3.07

Sn=Sn(CH3)3(H2O)2

C4H7NO4 H2L Aspartic acid CAS 56-84-8 (21)
Aminobutanedioic acid; H2N.CH(CH2.COOH).COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003M0a (31944) 353
K(R2Sn+L)=11.39
K(R2Sn+2L)=19.39
K(R2Sn+H+L)=14.09
K(R2Sn+2H+L)=17.30

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl NaClO4 25°C 0.30M C 1987H0a (31945) 354
B(SnHL)=11.58

Sn=Sn(CH3)3(H2O)2

C4H7NO4 H2L IDA CAS 142-73-4 (118)
Iminodiethanoic acid; HN(CH2.COOH)2

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

Sn++++ gl KNO3 25°C 0.10M C H K1=9.414 1992CGa (32363) 355
B(SnH-1L)=2.41

Metal is Sn(Me)2++. DH(K1)=-8.7 kJ mol-1, DS(K1)=-151 J K-1 mol-1.

C4H8N2O3 HL Gly-Gly CAS 556-50-3 (54)
Glycyl-glycine; H2N.CH2.CO.NH.CH2.COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003M0a (33053) 356
K(R2Sn+L)=8.32
K(R2Sn+L=R2SnL(OH)+H)=3.26

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl NaClO4 25°C 0.10M C K1=6.61 1999SRa (33054) 357
B(MHL)=10.07

B(MH-1L)=1.80

M is Sn(CH₃)₂⁺⁺.

C4H8O L THF CAS 109-99-9 (2537)

Tetrahydrofuran; cyclo(-CH₂.CH₂.O.CH₂.CH₂-)

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

Sn++++ sp non-aq 5°C 100% U HM 1976Vca (33189) 358

K(SnI₄+L)=-0.046

K(SnI₄L+L)=1.12

Medium: benzene. In THF: K(SnCl₄+2L)=2.94

C4H9NO₂ HL Dimethylglycine CAS 1118-68-9 (88)

N,N-Dimethyl-2-aminoethanoic acid; (CH₃)₂N.CH₂.COOH

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

Sn++++ gl NaClO₄ 25°C 0.10M C K1=6.65 1997TNa (34033) 359

B(Me₃SnHL)=12.84

B(Me₃SnH-1L)=-3.19

B((Me₃Sn)₂L)=8.79

Metal is Me₃Sn⁺.

C4H9NO₂S HL Methylcysteine CAS 1187-84-4 (84)

2-Amino-3-methylmercaptopropanoic acid; H₂N.CH(CH₂.S.CH₃)COOH

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

Sn++++ gl diox/w 25°C 75% C K1=5.81 1998SMb (34106) 360

Metal is (C₆H₅)₃Sn⁺ Medium: 75% dioxane/H₂O, 0.10 M NaNO₃.

C4H9NO₃ HL Threonine CAS 72-19-5 (48)

2-Amino-3-hydroxybutanoic acid; H₂N.CH(CH(OH).CH₃)COOH

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

Sn++++ gl diox/w 25°C 75% C K1=6.22 1998SMb (34325) 361

Metal is (C₆H₅)₃Sn⁺ Medium: 75% dioxane/H₂O, 0.10 M NaNO₃.

Sn++++ gl KCl 25°C 0.10M U 1992SHa (34326) 362

K(SnMe₃(OH)+L)=5.78

C4H10O L Ether CAS 60-29-7 (3573)

Diethyl ether (ethyl ether, ethoxyethane); C₂H₅.O.C₂H₅

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

Sn++++ nmr non-aq 21°C 100% C T H 2001FLb (34653) 363

K(SnCl₄+L)=0.14

$$K(\text{SnCl}_4\text{L}+\text{L})=0.52$$

Medium: dichloromethane. Method: 119Sn nmr. $\text{DH}(\text{SnCl}_4\text{L})=-25.5 \text{ kJ mol}^{-1}$,
 $\text{DS}(\text{SnCl}_4\text{L})=-84.5 \text{ J K}^{-1} \text{ mol}^{-1}$; $\text{DH}(\text{SnCl}_4\text{L}+\text{L})=-35.6$, $\text{DS}(\text{SnCl}_4\text{L}+\text{L})=-111.3$.

C4H11N L Butylamine CAS 109-73-9 (159)
 1-Aminobutane; $\text{CH}_3\text{.CH}_2\text{.CH}_2\text{.CH}_2\text{.NH}_2$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	M		K1=7.46	1992SHc (34771)	364

Metal ion is $(\text{CH}_3)_3\text{Sn}^+$.

C4H11NO3 L Tris buffer CAS 77-86-1 (550)
 2-Amino-2-(hydroxymethyl)-propan-1,3-diol; $(\text{HO.CH}_2)_3\text{C.NH}_2$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++++	gl	alc/w	25°C	40%	C		K1=5.4 B(10,1,28)=2.9 B(1,1,4)=-8.4 B(1,1,2)=1.40 B(1,2,3)=-2.7	1978DEa (35064)	365

Medium: MeOH/water, metal: $\text{C}_2\text{H}_5\text{SnCl}_3$. Polarography also used.

$\text{B}(p,q,r): p(\text{C}_2\text{H}_5\text{Sn})+q(\text{C}_4\text{H}_{11}\text{NO}_3)+r\text{H}_2\text{O}$

C4H13N3 L Dien CAS 111-40-0 (584)
 1,4,7-Triazaheptane, 2,2'-Iminobis(ethylamine), diethylenetriamine;
 $\text{NH}_2\text{.(CH}_2)_2\text{.NH.(CH}_2)_2\text{.NH}_2$

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	M		K1=7.53 B(R3SnHL)=16.00 B(R3SnH2L)=21.13	1992SHc (35815)	366

Metal ion is $(\text{CH}_3)_3\text{Sn}^+$.

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++++	nmr	non-aq	27°C	100%	U	M	K(Bu3SnCl+L)=0.61 K(Bz3SnCl+L)=0.67 K(Ph3SnCl+L)=1.04	1987HHa (36679)	367

Medium: pyridine/ CDCl_3

Sn++++	gl	NaClO4	25°C	0.30M	C		K1=1.13	1987H0a (36680)	368
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$\text{Sn}=\text{Sn}(\text{CH}_3)_3(\text{H}_2\text{O})_2$

Sn++++ nmr non-aq 34°C 100% C K1=3.66 B2= 6.45 1981FSa (36681) 369
Method: 1H nmr. Metal is CH3SnCl3. Medium: nitrobenzene. Also data for
4-Me, 4-COCH3, 4-COOCH3, 4-CN and 4-NO2 substituted pyridines.

Sn++++ cal non-aq 25°C 100% U HM 1967MOB (36682) 370
Medium: n-hexane. DH(SnCl4(l)+2L(l)=SnCl4L2(c))=-221.1 kJ mol-1
DH(SnCl4(g)+2L(l)=SnCl4L2(c))=-253.7

C5H5N5 L Adenine CAS 73-24-5 (237)
6-Aminopurine; H2N.C5H3N4

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

Sn++++ gl KNO3 25°C 0.10M M K1=10.01 B2=17.70 2001ASa (36980) 371
Metal ion is (CH3)2Sn++.

Sn++++ gl NaNO3 25°C 0.10M M K1=7.33 2001MSc (36981) 372
B((CH3)3SnHL)=12.79
B((CH3)3SnH-1L)=0.01
Metal ion is (CH3)3Sn+.

Sn++++ gl diox/w 25°C 75% C K1=6.86 1998SMb (36982) 373
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

C5H6N2O2 HL Thymine CAS 65-71-4 (413)
2,4-Dihydroxy-5-methylpyrimidine; C4HN2(CH3)(OH)2

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

Sn++++ gl KNO3 25°C 0.10M M K1=9.61 B2=16.96 2001ASa (37288) 374
Metal ion is (CH3)2Sn++.

Sn++++ gl NaNO3 25°C 0.10M M K1=6.76 2001MSc (37289) 375
B((CH3)3SnH-1L)=-0.36
Metal ion is (CH3)3Sn+.

Sn++++ gl diox/w 25°C 75% C K1=8.60 1998SMb (37290) 376
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

C5H6N2O2 HL CAS 645-65-8 (3620)
4(or 5)-Imidazolylethanoic acid; C3H3N2.CH2.COOH

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

Sn++++ gl NaClO4 25°C 0.10M C K1=5.51 1999SRa (37318) 377
B(MHL)=9.08
B(MH-1L)=-0.08

M is Sn(CH3)2++.

C5H9NO2 HL Proline CAS 147-85-3 (44)

Pyrrolidine-2-carboxylic acid; C4H8N.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C				2003M0a (38642)	378
								K(R2Sn+L)=10.59 K(R2Sn+2L)=19.19 K(R2Sn+H+L)=13.85		

Metal is R2Sn(IV), where R = vinyl.

Sn++++	gl	diox/w	25°C	75%	C			K1=7.48	1998SMb (38643)	379
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.										

Sn++++	gl	KCl	25°C	0.10M	U				1992SHa (38644)	380
								K(SnMe3(OH)+L)=7.45		

C5H9NO4 H2L Glutamic acid CAS 56-86-0 (22)
2-Aminopentanedioic acid; H2N.CH(CH2.CH2.COOH)COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C				2003M0a (39125)	381
								K(R2Sn+L)=11.79 K(R2Sn+2L)=19.76 K(R2Sn+H+L)=15.55 K(R2Sn+2H+L)=18.75		

Metal is R2Sn(IV), where R = vinyl.

C5H9NO4 H2L MIDA CAS 4408-64-4 (190)
N-Methyliminodiethanoic acid; CH3.N(CH2.COOH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C			K1=4.81	1997TNa (39281)	382
								B(Me3SnH-1L)=-4.44		

Metal is Me3Sn+.

Sn++++	gl	NaNO3	25°C	0.10M	C			K1=9.625	1996ANb (39282)	383
								B(ML2H)=20.73 B(MLH-1)=2.53		

Metal=[Sn(CH3)2]++

C5H9N3 L Histamine CAS 51-45-6 (103)
4(5)-(2'-Aminoethyl)imidazole; C3H3N2.CH2.CH2.NH2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C				2003M0a (39545)	384
								K(R2Sn+L)=12.75 K(R2Sn+2L)=19.57		

K(R2Sn+H+L)=17.86

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl diox/w 25°C 75% C K1=5.85 1998SMb (39546) 385
B((C6H5)3SnHL)=11.14

Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl KCl 25°C 0.10M U 1992SHa (39547) 386
K(SnMe3(OH)+L+H)=12.66
K(SnMe3(OH)+L)=6.73

C5H10N2O3 HL Gly-Ala CAS 3695-73-6 (56)
Glycyl-alanine; H2N.CH2.CO.NH.CH(CH3).COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (40007) 387
K(R2Sn+L)=8.04
K(R2Sn+L=R2SnL(OH)+H)=3.75

Metal is R2Sn(IV), where R = vinyl.

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

Sn++++ gl NaClO4 25°C 0.10M C 1999JNa (40328) 388
B(SnH-3L)=-17.22
B(SnH-4L2)=-27.09

Metal is Me2Sn++.

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

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

Sn++++ gl NaClO4 25°C 0.10M C 1998BGa (40336) 389
B((CH3)2SnH-3L)=-16.62
B((CH3)2SnH-4L)=-28.01

Metal is (CH3)2Sn(IV)

C5H10O5 L D-Ribose CAS 50-69-1 (512)
D-Ribose;

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

Sn++++ gl NaClO4 25°C 0.10M C 1999JNa (40355) 390
B(SnH-3L)=-15.72
B(SnH-4L2)=-24.90

Metal is Me2Sn++.

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

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

Sn++++ gl NaClO4 25°C 0.10M C 1998BGa (40372) 391
B((CH3)2SnH-3L)=-16.64
B((CH3)2SnH-4L)=-28.22

Metal is (CH3)2Sn(IV)

C5H11NO2 L Betaine CAS 107-43-7 (4326)
(Carboxymethyl)trimethylammonium hydroxide inner salt; (CH3)3.N.CH2.CO2

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

Sn++++ gl NaClO4 25°C 0.10M C 1997TNa (40468) 392
K1=1.82
B(Me3SnH-1L)=-3.94

Metal is Me3Sn+.

C5H11NO2 HL Valine CAS 72-18-4 (43)
2-Amino-3-methylbutanoic acid; H2N.CH(CH(CH3)2)COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (40757) 393
K(R2Sn+L)=9.46
K(R2Sn+2L)=16.95
K(R2Sn+H+L)=12.83

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl diox/w 25°C 75% C 1998SMb (40758) 394

Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl KNO3 25°C 0.10M C 1995ACa (40759) 395

K(SnMe2+L)=7.84
B((SnMe2)HL)=11.04
B((SnMe2)H-1L)=2.69
B((SnMe2)H-2L)=-6.80

C5H11NO2 HL Nor-Valine CAS 760-78-1 (689)
2-Aminopentanoic acid; CH3.CH2.CH2.CH(NH2).COOH

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

Sn++++ gl KCl 25°C 0.10M U 1992SHa (40846) 396

K(SnMe3(OH)+L)=6.33

C5H11NO2S HL Methionine CAS 63-68-3 (42)
2-Amino-4-(methylthio)butanoic acid; H2N.CH(CH2.CH2.S.CH3)COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (41124) 397
K(R2Sn+L)=10.12
K(R2Sn+2L)=17.95
K(R2Sn+H+L)=13.26

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl KCl 25°C 0.10M U 1992SHa (41125) 398
K(SnMe3(OH)+L)=5.97

Sn++++ gl diox/w 20°C 75% M T H 1988SSf (41126) 399
K(SnMe2+L)11.26

30 C: K=10.86; 40 C: K=10.81. DH=-36.8 kJ mol⁻¹, DS=88.6 J K⁻¹ mol⁻¹

C5H11NO2S H2L Penicillamine CAS 52-66-4 (350)
DL-2-Amino-3-mercapto-3-methylbutanoic acid; (CH3)2C(SH)CH(NH2)COOH

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

Sn++++ gl diox/w 25°C 75% C K1=11.10 1998SMb (41280) 400
B((C6H5)3SnHL)=18.91

Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

Sn++++ gl NaNO3 25°C 0.10M M K1=7.59 1992SHc (41281) 401
B(R3SnHL)=15.35

Metal ion is (CH3)3Sn+.

Sn++++ gl NaClO4 25°C 0.30M C 1987HOa (41282) 402
B(SnHL)=14.50

Sn=Sn(CH3)3(H2O)2

C5H11O8P H2L Ribose-5-phosph CAS 4300-28-1 (2756)
Ribose-5-phosphoric acid, Ribofuranoside 5 Phosphoric acid;

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

Sn++++ gl NaClO4 25°C 0.10M C 2002JNa (41424) 403
B(R2SnH-1L)=0.14

B(R2SnH-3L)=-15.46

B(R2SnH-4L2)=-23.76

Metal is (CH3)2Sn++.

C5H12N2O2 HL Ornithine CAS 1069-31-4 (46)
2,5-Diaminopentanoic acid; H2N.CH2.CH2.CH2.CH(NH2)COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003MOa (41584) 404

K(R2Sn+L)=14.21
 K(R2Sn+2L)=19.45
 K(R2Sn+H+L)=19.26
 K(R2Sn+2H+L)=22.58

Metal is R2Sn(IV), where R = vinyl.

 Sn++++ gl diox/w 25°C 75% C K1=7.22 1998Smb (41585) 405
 B((C6H5)3SnHL)=16.07

Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

C5H13N L 1-Pentylamine CAS 110-58-7 (3613)
 1-Pentylamine; CH3.CH2.CH2.CH2.CH2.NH2

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

 Sn++++ gl NaNO3 25°C 0.10M M K1=7.27 1992SHc (41713) 406

Metal ion is (CH3)3Sn+.

C6H5NC12 L Dichloroaniline CAS 608-27-5 (762)
 2,3-Dichloroaniline; H2N.C6H3(Cl)2

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

 Sn++++ sp diox/w 25°C 100% U T H 1976BSa (42344) 407

K(SnCl4+L)=1.76

At 10 - 50 C. DH = -28.8 kJ mol-1; DS = -63.5 J K-1 mol-1.

 Sn++++ sp diox/w 25°C 100% U T H 1975BSb (42345) 408

K(SnCl4+L)=1.25

At 10-50 C. DH=-26.7 kJ mol-1; DS=-66.0 J K-1 mol-1

C6H5NC12 L Dichloroaniline CAS 554-00-7 (761)
 2,4-Dichloroaniline; H2N.C6H3(Cl)2

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

 Sn++++ sp diox/w 25°C 100% U T H 1975BSb (42349) 409

K(SnCl4+L)=1.76

At 10-50 C. DH=-28.8 kJ mol-1; DS=-63.5 J K-1 mol-1

C6H5NC12 L Dichloroaniline CAS 95-76-1 (759)
 3,4-Dichloroaniline; H2N.C6H3(Cl)2

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

 Sn++++ sp diox/w 25°C 100% U T H 1976BSa (42354) 410

K(PhSnCl3+L)=1.36

At 10 - 50 C. DH = -47.5 kJ mol-1; DS = -133 J K-1 mol-1.

 Sn++++ sp diox/w 25°C 100% U T H 1975BSb (42355) 411

$$K(\text{SnCl}_4+\text{L})=2.94$$

At 10-50 C. DH=-32.2 kJ mol⁻¹; DS=-51.8 J K⁻¹ mol⁻¹

C6H5NCl2 L Dichloroaniline CAS 626-43-7 (760)

3,5-Dichloroaniline; H2N.C6H3(Cl)2

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

Sn++++ sp diox/w 25°C 100% U T H 1976BSa (42358) 412

$$K(\text{SnCl}_4+\text{L})=2.19$$

At 10-50 C. DH = -30.9 kJ mol⁻¹; DS = -61.4 J K⁻¹ mol⁻¹.

Sn++++ sp diox/w 25°C 100% U 1976BSa (42359) 413

$$K(\text{PhSnCl}_3+\text{L})=0.74$$

Sn++++ sp diox/w 25°C 100% U T H 1975BSb (42360) 414

$$K(\text{SnCl}_4+\text{L})=2.19$$

At 10-50 C. DH=-30.9 kJ mol⁻¹; DS=-61.4 J K⁻¹ mol⁻¹

C6H5N2O2Cl L CAS 635-22-3 (763)

3-Nitro-4-chloroaniline; H2N.C6H3(Cl)(NO2)

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

Sn++++ sp diox/w 25°C 100% U T H 1976BSa (42979) 415

$$K(\text{SnCl}_4+\text{L})=2.09$$

At 10 - 50 C. DH = -29.2 kJ mol⁻¹; DS = -57.6 J K⁻¹ mol⁻¹.

Sn++++ sp diox/w 25°C 100% U T H 1975BSb (42980) 416

$$K(\text{SnCl}_4+\text{L})=2.09$$

At 10-50 C. DH=-29.2 kJ mol⁻¹; DS=-57.6 J K⁻¹ mol⁻¹

C6H6NBr L 3-Bromoaniline CAS 591-19-5 (758)

3-Bromoaniline; H2N.C6H4.Br

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

Sn++++ sp diox/w 25°C 100% U T H 1976BSa (43178) 417

$$K(\text{PhSnCl}_3+\text{L})=1.78$$

At 10 - 50 C. DH = -51.8 kJ mol⁻¹; DS = -140 J K⁻¹ mol⁻¹.

C6H6NBr L 4-Bromoaniline CAS 106-40-1 (757)

4-Bromoaniline; H2N.C6H4.Br

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

Sn++++ sp diox/w 25°C 100% U T H 1976BSa (43185) 418

$$K(\text{PhSnCl}_3+\text{L})=2.14$$

At 10-50 C. DH = -49.7 kJ mol⁻¹. DS = -126 J K⁻¹ mol⁻¹.

C6H6N2O2 L m-Nitroaniline CAS 99-09-2 (464)
3-Nitroaminobenzene; H2N.C6H4.NO2

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

Sn++++ sp diox/w 25°C 100% U T H 1976BSa (43390) 419
K(PhSnCl3+L)=0.94
At 10 -50 C. DH = -45.9 kJ mol-1; DS = -136 J K-1 mol-1.

Sn++++ sp diox/w 25°C 100% U T H 1976BSa (43391) 420
K(SnCl4+L)=2.64
At 10 -50 C. DH = -34.7 kJ mol-1; DS = -66.8 J K-1 mol-1.

Sn++++ sp diox/w 25°C 100% U T H 1975BSb (43392) 421
K(SnCl4+L)=2.62
At 10-50 C. DH=-34.7 kJ mol-1; DS=-66.8 J K-1 mol-1

C6H6N2O2 L p-Nitroaniline CAS 100-01-6 (465)
4-Nitroaminobenzene; H2N.C6H4.NO2

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

Sn++++ sp diox/w 25°C 100% U T H 1976BSa (43406) 422
K(SnCl4+L)=1.69
At 10-50 C. DH = -30.5 kJ mol-1; DS = -70.2 J K-1 mol-1.

Sn++++ sp diox/w 25°C 100% U 1975BSb (43407) 423
K(SnCl4+L)=1.69

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

Sn++++ vlt KNO3 21°C 0.50M C K1=24.5 B2=46.50 1975ZBa (43834) 424
Method: polarography. Medium: HNO3/KNO3 (pH 0.6-1.3) and chloroethanoate
buffer/KNO3 (pH 2.0-3.0). Range of values: K1 (24.1-24.6), B2 (46.0-47.3).

Sn++++ EMF alc/w 20°C 100% U M 1971GSa (43835) 425
K(Sn+H2L+2A=SnL+2HA)=26.5
K(SnL+2A)=19.43
K(SnL+SnA2L)=2.77
K(SnA2L+A)=7.5

Medium: MeOH, 1 M LiCl. K(SnA3L+A)=4.2; K(SnL+H2L+2A=SnL2+2HA)=23.07.
Data for other Sn/L/methanol complexes also given

Sn++++ sp oth/un 20°C ? U 1959HAa (43836) 426
K(SnO3+2H2L=SnOL2)=8.68

C6H6O3 H3L Pyrogallol CAS 87-66-1 (696)

$$K(R_2Sn+2L)=12.23$$

Metal is $R_2Sn(IV)$, where R = vinyl.

C6H8O6 H3L Tricarballic CAS 99-14-9 (1620)

1,2,3-Propanetricarboxylic acid; $HOOC.CH_2.CH(COOH).CH_2.COOH$

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

Sn++++ gl NaCl 25°C 0.0 C I 1999SFa (45572) 433

$$K(SnMe_3+L)=3.288$$

$$K(SnMe_3+H+L)=8.831$$

$$K(SnMe_3+2H+L)=12.89$$

At I=0.25 M: K values: 2.173, 7.346, 11.22; I=0.5 M: 2.055, 7.268, 11.29;

I=1.0 M: 1.827, 6.884, 10.84

 Sn++++ gl none 25°C 0 M T K1=6.69 1997SGa (45573) 434

$$B(ML(OH))=15.01$$

$$B(MH-1L)=1.01$$

$$B(MHL)=11.12$$

$$B(MH_2L)=14.38$$

Metal ion: $SnMe_2^{++}$. Extrapolated to I=0

C6H8O7 H3L Citric acid CAS 77-92-9 (95)

2-Hydroxypropane-1,2,3-tricarboxylic acid; $HOOCCH_2.CH(OH)(COOH).CH_2COOH$

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

Sn++++ gl NaCl 25°C 0.0 C I 1999SFa (46255) 435

$$K(SnMe_3+L)=3.367$$

$$K(SnMe_3+H+L)=8.908$$

$$K(SnMe_3+2H+L)=13.281$$

At I=0.25 M: K values: 2.093, 7.029, 10.605; I=0.5 M: 1.989, 6.873, 10.605

I=1.0 M: 2.03, 6.83, 10.78

 Sn++++ gl KNO3 25°C 0.10M C 1990ACa (46256) 436

$$K(SnMe_2+L)=6.55$$

$$B((SnMe_2)HL)=10.83$$

$$B(SnMe_2)H-1L)=0.99$$

$$B((SnMe_2)2H-1L)=6.65$$

$$B((SnMe_2)2H-2L)=2.38$$

 Sn++++ gl NaClO4 25°C 0.30M C K1=1.79 1987H0a (46257) 437

$$B(SnHL)=7.09$$

M = $Sn(CH_3)_3(H_2O)_2^{+}$. Two speciation models calculated

 Sn++++ gl KCl 28°C 0.10M U 1980MPc (46258) 438

$$K(Me_2Sn+H_3L=Me_2SnHL+2H)=-2.64$$

Metal is $(CH_3)_2Sn^{++}$

C6H9NO6 H3L NTA CAS 139-13-9 (191)

Nitrilotriethanoic acid; N(CH₂.COOH)₃

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO ₃	25°C	0.10M	C			K1=5.63 B(Me ₃ SnHL)=12.11	1997TNa (47026)	439

Metal is Me₃Sn+.

Sn++++	gl	KNO ₃	25°C	0.10M	C			K(SnMe ₂ +L)=10.38 B((SnMe ₂)HL)=12.06	1990ACa (47027)	440
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C₆H₉N₃O₂ HL Histidine CAS 71-00-1 (1)
2-Amino-3-(4'-imidazolyl)propanoic acid; H₂N.CH(CH₂.C₃H₃N₂)COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO ₃	25°C	0.10M	C			K(R ₂ Sn+L)=11.52 K(R ₂ Sn+2L)=18.66 K(R ₂ Sn+H+L)=16.51 K(R ₂ Sn+L=R ₂ SnL(OH)+H)=3.48	2003M0a (47616)	441

Metal is R₂Sn(IV), where R = vinyl.

Sn++++	gl	NaClO ₄	25°C	0.10M	C			K1=7.96 B(MHL)=13.23 B(MH ₂ L)=16.25 B(MH-1L)=1.56	1999SRa (47617)	442
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M is Sn(CH₃)₂++.

Sn++++	gl	diox/w	25°C	75%	C			K1=6.23 B((C ₆ H ₅) ₃ SnHL)=11.94	1998SMb (47618)	443
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Metal is (C₆H₅)₃Sn+ Medium: 75% dioxane/H₂O, 0.10 M NaNO₃.

Sn++++	gl	KCl	25°C	0.10M	U			K(SnMe ₃ (OH)+L+H)=11.98 K(SnMe ₃ (OH)+L)=6.15	1992SHa (47619)	444
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Sn++++	gl	NaClO ₄	25°C	0.30M	U			K(Me ₃ Sn+L)=4.74 B((Me ₃ Sn)HL)=10.97 K(Me ₃ Sn+HL)=1.73	1985HDa (47620)	445
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C₆H₁₀N₂O₅ H₂L Asp-Gly CAS 3790-51-0 (6521)
Aspartyl-glycine; H₂N.CH(CH₂.COOH)CO.NH.CH₂.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaClO ₄	25°C	0.10M	C			K1=6.90 B((CH ₃) ₂ SnHL)=10.4	2000JHa (47759)	446

B((CH3)2SnH2L)=13.4
B((CH3)2SnH-1L)=2.13

Metal is (CH3)2Sn++

C6H10N2O5 H2L Gly-Asp CAS 4685-12-5 (282)
Glycyl-aspartic acid; H2N.CH2.CO.NH.CH(CH2.COOH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaClO4	25°C	0.10M	C			K1=7.51 B((CH3)2SnHL)=11.6 B((CH3)2SnH2L)=14.5 B((CH3)2SnH-1L)=2.30	2000JHa (47779)	447

Metal is (CH3)2Sn++

C6H10O4 H2L Adipic acid CAS 124-04-9 (401)
1,6-Hexanedioic acid; HOOC.(CH2)4.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C			K(R2Sn+L)=6.13 K(R2Sn+2L)=10.95	2003MOa (48089)	448

Metal is R2Sn(IV), where R = vinyl.

C6H12N2O4 H2L EDDA CAS 5657-17-0 (119)
1,2-Diaminoethane-N,N'-diethanoic acid; HOOC.CH2.NH.CH2.CH2.NH.CH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C			K1=4.78 B(Me3SnHL)=11.65	1997TNa (49270)	449

Metal is Me3Sn+.

C6H12N2O4 H2L N,N-EDDA CAS 5835-29-0 (2333)
1,2-Diaminoethane-N,N'-diethanoic acid; H2N.CH2.CH2.N(CH2.COOH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C			K1=12.412 B(MHL)=15.75 B(MHL2)=24.12 B(MH2L2)=30.87	1996ANb (49307)	450

Metal=[Sn(CH3)2]++

C6H12O5 HL (7553)
2-Deoxy-D-glucose;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Sn++++ gl NaClO4 25°C 0.10M C 1998BGa (49504) 451
B((CH3)2SnH-3L)=-17.77
B((CH3)2SnH-4L)=-28.96

Metal is (CH3)2Sn(IV)

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

D-Fructose

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

Sn++++ gl NaClO4 25°C 0.10M C 1998BGa (49552) 452
B((CH3)2SnH-2L)=-7.18
B((CH3)2SnH-3L)=-15.46
B((CH3)2SnH-4L)=-26.43

Metal is (CH3)2Sn(IV)

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

D-Glucose

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

Sn++++ gl NaClO4 25°C 0.10M C 1998BGa (49594) 453
B((CH3)2SnH-3L)=-16.88
B((CH3)2SnH-4L)=-28.08

Metal is (CH3)2Sn(IV)

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

L(-)-Sorbose;

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

Sn++++ gl NaClO4 25°C 0.10M C 1998BGa (49617) 454
B((CH3)2SnH-2L)=-7.38
B((CH3)2SnH-3L)=-15.76
B(CH3)2SnH-4L)=-26.87

Metal is (CH3)2Sn(IV)

C6H13NO2 HL Isoleucine CAS 73-32-5 (424)

2-Amino-3-methylpentanoic acid; CH3.CH2.CH(CH3).CH(NH2).COOH

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

Sn++++ gl diox/w 25°C 75% C K1=6.96 1998SMb (49916) 455
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

C6H13NO2 HL Leucine CAS 61-90-5 (47)

2-Amino-4-methylpentanoic acid; H2N.CH(CH2.CH(CH3)2)COOH

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

Sn++++ gl KCl 25°C 0.10M U 1992SHa (50108) 456
K(SnMe3(OH)+L)=6.34

C6H13N04 HL Bicine CAS 150-25-4 (2124)

N,N-Bis(2-hydroxyethyl)glycine; (HO.CH2.CH2)2N.CH2.COOH

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

Sn++++ gl NaNO3 25°C 0.10M C K1=8.86 B2=15.29 2003AMa (50408) 457
K(R2Sn+H+L)=12.09
K(R2Sn+L=R2SnH-1L+H)=3.44
K(R2Sn+L=R2SnH-2L+2H)=-4.87

Cation is (CH3)2Sn++.

C6H13N05 L D-Glucosamine CAS 3416-24-8 (565)

2-Amino-2-deoxyglucose;

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

Sn++++ gl NaNO3 25°C 0.10M M T H K1=4.737 1997SEc (50463) 458
Data for 15-35 C. DH(K1)=-18.0 kJ mol-1, DS(K1)=12.9 J K-1 mol-1.
Metal ion is Me3Sn+.

Sn++++ gl NaNO3 25°C 0.10M M T K1=6.780 B2=13.29 1997SEc (50464) 459
Metal ion is Me2Sn++.

Sn++++ gl NaNO3 25°C 0.10M M T H K1=5.286 B2= 9.48 1997SEc (50465) 460
Metal ion is Bu2Sn++. For Bu3Sn+, K1=3.636, DH(K1)=16.4 kJ mol-1,
DS(K1)=22.3 J K-1 mol-1.

C6H13N05 HL Tricine CAS 5704-04-1 (1239)

N-(Tris(hydroxymethyl)methyl)glycine; (HO.CH2)3C.NH.CH2.COOH

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

Sn++++ gl NaNO3 25°C 0.10M C K1=8.45 B2=14.87 2003AMa (50509) 461
K(R2Sn+H+L)=11.71
K(R2Sn+L=R2SnH-1L+H)=3.23
K(R2Sn+L=R2SnH-2L+2H)=-5.06

Cation is (CH3)2Sn++.

C6H13O9P H2L CAS 59-56-3 (3049)

alpha-D-Glucose-1-phosphoric acid; Glucopyranose-1-phosphoric acid;

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

Sn++++ gl NaClO4 25°C 0.10M C K1=5.66 2002JNa (50622) 462
B(R2SnHL)=7.96
B(R2SnH-1L)=0.88

Metal is (CH3)2Sn++.

 C6H13O9P H2L CAS 56-73-5 (3703)
 d-Glucose-6-phosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaClO4	25°C	0.10M	C			K1=5.81 B(R2SnHL)=8.35 B(R2SnH-1L)=0.95 B(R2SnH-3L)=-17.51	2002JNa (50625)	463

Metal is (CH3)2Sn++.

 C6H14N2O2 HL Lysine CAS 56-87-1 (41)
 2,6-Diaminohexanoic acid; H2N.(CH2)4.CH(NH2)COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C			K(R2Sn+L)=15.09 K(R2Sn+2L)=20.04 K(R2Sn+H+L)=20.11 K(R2Sn+2H+L)=23.37	2003M0a (50835)	464

Metal is R2Sn(IV), where R = vinyl.

Sn++++	gl	diox/w	25°C	75%	C			K1=6.89 B((C6H5)3SnHL)=16.07	1998SMb (50836)	465
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Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

 C6H14O6 L Glucitol CAS 50-70-4 (2878)
 D-Sorbitol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaClO4	25°C	0.10M	C			B((CH3)2SnH-3L)=-16.87	1998BGa (51109)	466

Metal is (CH3)2Sn(IV)

 C6H18N3OP L HMPA CAS 680-31-9 (603)
 Hexamethylphosphoramide, Tris-(dimethylamino)phosphine oxide;((CH3)2N)3PO

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	nmr	non-aq	27°C	100%	U	M		K(Bu3SnCl+L)=1.40 K(Bz3SnCl+L)=1.55 K(Ph3SnCl+L)=2.25	1987HHa (51987)	467

Medium: HMPA/CDCl3

 C7H5NO4 H2L Dipicolinic aci CAS 449-83-2 (418)
 2,6-Pyridinedicarboxylic acid; C5H3N.(COOH)2

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Sn++++    gl  NaNO3  25°C 0.10M C          K1=10.533      1996ANb (52805) 468
                                         B(MHL)=12.65
                                         B(MHL2)=17.69

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Metal=[Sn(CH3)2]++

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

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Sn++++    sp  non-aq 25°C 100% U          K(SnCl4+L)=3.60      1977SWa (55706) 469

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Medium: Et2O

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*****
C7H8NCl        L          CAS 95-74-9 (756)
3-Chloro-4-methylaniline; Cl.C6H3(CH3).NH2

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Sn++++    sp  diox/w 25°C 100% U T H          K(PhSnCl3+L)=2.24      1976BSa (55789) 470

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At 10-50 C. DH = -43.4 kJ mol⁻¹; DS = -99 J K⁻¹ mol⁻¹.

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*****
C7H8N2O2        L          CAS 99-52-5 (470)
2-Methyl-4-nitro-aminobenzene; CH3.C6H3(NO2).NH2

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Sn++++    sp  diox/w 25°C 100% U T H          K(SnCl4+L)=2.13      1976BSa (55882) 471

```

At 10 - 50 C. DH = -29.6 kJ mol⁻¹; DS = -58.9 kJ mol⁻¹.

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Sn++++    sp  diox/w 25°C 100% U T H          K(PhSnCl3+L)=0.44      1976BSa (55883) 472

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At 10 - 50 C. DH = -58.6 kJ mol⁻¹; DS = -191 kJ mol⁻¹.

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Sn++++    sp  diox/w 25°C 100% U          K(SnCl4+L)=1.18      1975BSb (55884) 473

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*****
C7H8N2O2        L          CAS 119-32-4 (467)
3-Nitro-4-methylaminobenzene; CH3.C6H3(NO2).NH2

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Sn++++    sp  diox/w 25°C 100% U T H          K(SnCl4+L)=3.06      1976BSa (55905) 474

```

At 10 -50 C. DH = -32.2 kJ mol⁻¹; DS = -49.3 J K⁻¹ mol⁻¹.

Sn++++ sp diox/w 25°C 100% U 1975BSb (55906) 475
K(SnCl4+L)=3.06

C7H8N2O2 L CAS 99-52-5 (1937)
3-Nitro-6-methylaminobenzene; CH3.C6H3(NO2).NH2

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

Sn++++ sp diox/w 25°C 100% U 1975BSb (55909) 476
K(SnCl4+L)=2.13

C7H8N2O2 L CAS 611-05-2 (764)
4-Nitro-3-methylaniline; CH3.C6H3(NO2).NH2

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

Sn++++ sp diox/w 25°C 100% U 1976BSa (55918) 477
K(PhSnCl3+L)=0.23

Sn++++ sp diox/w 25°C 100% U T H 1976BSa (55919) 478
K(SnCl4+L)=1.96
At 10 - 50 C. DH = -27.6 kJ mol⁻¹; DS = -54.7 J K⁻¹ mol⁻¹.

Sn++++ sp diox/w 25°C 100% U 1975BSb (55920) 479
K(SnCl4+L)=1.96

C7H9N L 3-Methylaniline CAS 108-44-1 (755)
3-Methylaniline (3-Toluidine); CH3.C6H4.NH2

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

Sn++++ sp diox/w 25°C 100% U 1976BSa (56310) 480
K(PhSnCl3+L)=2.79

C8H5O2F3S HL TTA CAS 326-91-0 (165)
4,4,4-Trifluoro-1-(2-thienyl)butane-1,3-dione; F3C.CO.CH2.CO.C4H3S

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

Sn++++ gl NaClO4 25°C 0.30M C K1=2.05 1987H0a (58678) 481
Sn=Sn(CH3)3(H2O)2

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

Sn++++ gl NaNO3 25°C 0.10M M K1=2.85 1992SHc (59013) 482
Metal ion is (CH3)3Sn+.

 C8H9NO2 HL CAS 5330-97-2 (6248)
 Phenylacetohydroxamic acid; C6H5.CH2.CO.NH.OH

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

 Sn++++ gl diox/w 30°C 75% U K1=12.23 B2=20.23 1980NGa (60356) 483

C8H10O8 H4L CAS 1703-58-8 (7339)
 1,2,3,4-Butanetetracarboxylic; HOOC.CH2.CH(COOH).CH(COOH).CH2.COOH

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

 Sn++++ gl NaCl 25°C 0.0 C I 1999SFa (60892) 484

K(SnMe3+L)=3.70
 K(SnMe3+H+L)=10.264
 K(SnMe3+2H+L)=15.345
 K(2SnMe3+L)=6.93

At I=0.25 M: K values: 2.23, 7.94, 12.37, 4.42; I=0.5 M: 2.24, 7.87, 12.48
 4.07; I=1.0 M: 1.81, 7.251, 11.44, 3.59

 Sn++++ gl none 25°C 0 M T K1=8.20 1997SGa (60893) 485

B(MHL)=13.34
 B(MH-1L)=1.80
 B(MH2L)=17.47
 B(MH3L)=20.40

Metal ion: SnMe2++. Extrapolated to I=0

 C8H12N4O3 HL Gly-His CAS 3486-76-8 (273)
 Glycyl-histidine; H2N.CH2.CO.NH.CH(CH2.C3H3N2).COOH

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

 Sn++++ gl NaCl04 25°C 0.10M C K1=9.05 1999SRa (61594) 486

B(MHL)=13.73
 B(MH2L)=17.16
 B(MH-1L)=2.56

M is Sn(CH3)2++.

 C8H15NO8 HL CAS 5616-22-8 (6474)
 N-(2,3,4,5,6-Pentahydroxyhexanoyl)glycine, N-D-Gluconylglycine;

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

 Sn++++ gl NaCl04 25°C 0.10M C K1=2.36 1995GBa (62230) 487

B(SnH-1L)=-0.96
 B(SnH-2L)=-5.42
 B(SnH-3L)=-15.87

Metal is Et2Sn++

C8H16N2O3 HL Gly-Leu CAS 869-19-2 (255)
Glycyl-leucine; H2N.CH2.CO.NH.CH(CH2.CH(CH3)2).COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003M0a (62394) 488
K(R2Sn+L)=8.31
K(R2Sn+L=R2SnL(OH)+H)=3.43

Metal is R2Sn(IV), where R = vinyl.

C9H7N L CAS 119-65-3 (487)

Isoquinoline;

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

Sn++++ cal non-aq 25°C 100% U H 1967M0b (64028) 489
Medium: n-hexane. DH(SnCl4(l)+2L(l)=SnCl4L2(c))=-156.3 kJ mol-1
DH(SnCl4(g)+2L(l)=SnCl4L2(c))=-188.9

C9H7NO3S2 H2L CAS 58447-10-2 (4675)

8-Mercaptoquinoline-5-sulfonic acid;

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

Sn++++ sp oth/un ? ? U 1968ABa (64430) 490
B3=35.9

C9H9NO4 H2L Salicylglycine CAS 487-54-7 (3869)

N-(2-Hydroxybenzoyl)glycine, 2-hydroxyhippuric acid; HO.C6H4.CO.NH.CH2.COOH

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

Sn++++ gl NaClO4 25°C 0.10M C K1=6.79 2001JGa (65095) 491
B(R2SnHL)=10.65
B(R2SnH-1L)=2.40

Metal is (CH3)2Sn++.

C9H11NO2 HL Phenylalanine CAS 63-91-2 (2)

2-Amino-3-phenylpropanoic acid; H2N.CH(CH2.C6H5)COOH

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

Sn++++ gl NaNO3 25°C 0.10M C 2003M0a (65974) 492
K(R2Sn+L)=10.40
K(R2Sn+2L)=18.65
K(R2Sn+H+L)=13.66

Metal is R2Sn(IV), where R = vinyl.

Sn++++ gl KNO3 25°C 0.10M C 1995ACa (65975) 493
K(SnMe2+L)=7.95

B((SnMe2)HL)=11.21
B((SnMe2)H-1L)=3.24
B((SnMe2)H-2L)=-5.95

C9H11N02 HL B-Phenylalanine CAS 614-19-7 (187)
3-Amino-3-phenyl-propanoic acid; H2N.CH(C6H5).CH2.COOH

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

Sn++++ gl diox/w 25°C 75% C K1=6.48 1998SMb (66012) 494
Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

C9H13N3O5 L Cytidine CAS 65-46-3 (2152)
Cytidine, Cytosine-1-beta-D-ribofuranoside;

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

Sn++++ gl KNO3 25°C 0.10M M K1=3.77 B2= 7.69 2001ASa (67081) 495
Metal ion is (CH3)2Sn++.

Sn++++ gl NaNO3 25°C 0.10M M K1=2.90 2001MSc (67082) 496
B((CH3)3SnH-1L)=-2.42
Metal ion is (CH3)3Sn+.

C9H14N4O3 HL Carnosine CAS 305-84-0 (272)
3-Alanyl-histidine; H2N.CH2.CH2.CO.NH.CH(CH2.C3H3N2).COOH

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

Sn++++ gl NaClO4 25°C 0.10M C K1=8.32 1999SRa (67325) 497
B(MHL)=14.37
B(MH2L)=17.54
B(MH-1L)=1.73

M is Sn(CH3)2++.

C9H16N3O14P3 H4L CTP CAS 65-47-4 (406)
Cytidine-5'-triphosphoric acid;

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

Sn++++ gl KNO3 25°C 0.10M C H K1=7.77 1992ACa (67714) 498
B(SnHL)=12.28
B(SnH2L)=14.92
B(SnH-1L)=1.14
B(Sn2HL)=15.28

Metal is Sn(Me)2++. DH(K1)=18.4 kJ mol⁻¹, DS=210; DH(SnHL)=-2.1, DS=18;
DH(SnH2L)=5.9, DS=305; DH(SnH-1L)=37.7, DS=148; DH(Sn2HL)=29, DS=390.

C9H17N08 HL CAS 94231-90-0 (7909)
N-(2,3,4,5,6-Pentahydroxyhexanoyl)-beta-alanine, N-D-gluconyl-beta-alanine;

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

Sn++++ gl NaClO4 25°C 0.10M C K1=2.87 1995GBa (67846) 499
B(SnH-1L)=-0.80
Metal is Et2Sn++. For N-D-gluconyl-alpha-alanine, K1=2.85, B(SnH-1L)=-0.67
B(SnH-2L)=-4.92, B(SnH-3L)=-15.74.

C9H17NO9 HL CAS 168107-24-2 (7910)
N-(2,3,4,5,6-Pentahydroxyhexanoyl)serine, N-D-gluconyl-L-serine;

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

Sn++++ gl NaClO4 25°C 0.10M C K1=2.39 1995GBa (67850) 500
B(SnH-1L)=-1.00
B(SnH-2L)=-5.15
B(SnH-3L)=-15.48
Metal is Et2Sn++

C10H9NO3S2 HL (7206)
6-Methyl-5-sulfo-8-mercaptoquinoline;

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

Sn++++ sp oth/un 20°C 0.10M U B3=35.0 1985DAb (70180) 501

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

Sn++++ gl diox/w 20°C 75% U T H 1985SGb (70772) 502
K(Sn(CH3)2+L)=11.19
K(Sn(CH3)2L+L)=7.12
DH(SnR2+2L)=-120.4 kJ mol-1, DS=-60.9 J K-1 mol-1

Sn++++ gl diox/w 20°C 75% U T H 1985SGb (70773) 503
K(Sn(C3H7)2+L)=11.22
K(Sn(C3H7)2L+L)=7.35
DH(SnR2+2L)=-128 kJ mol-1, DS=-82.1 J K-1 mol-1

Sn++++ gl diox/w 20°C 75% U T H 1985SGb (70774) 504
K(Sn(C4H9)2+L)=11.29
K(Sn(C4H9)2L+L)=7.40
DH(SnR2+2L)=-136.6 kJ mol-1, DS=-108 J K-1 mol-1

C10H12N4O5 HL Inosine CAS 58-63-9 (2344)
Hypoxanthine-9-beta-D-ribofuranoside;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Sn++++ gl KNO3 25°C 0.10M M TIH K1=8.13 B2=14.82 2001ASa (71406) 505
 Metal ion is (CH3)2Sn++. Data for 15-35 C and for 25-75% v/v dioxane/H2O.
 DH(K1)=139.8 kJ mol-1, DS(K1)=626 J K-1 mol-1; DH(K2)=-60.7, DS(K2)=-77.

Sn++++ gl NaNO3 25°C 0.10M M TIH K1=5.49 2001MSc (71407) 506
 B((CH3)3SnH-1L)=-2.42
 Metal ion is (CH3)3Sn+. Data for 15-35 C. DH(K1)=36.7 kJ mol-1, DS=228
 J K-1 mol-1; DH(ML+OH)=17.5. Also data at 25 C for 25%-75% dioxane/H2O.

Sn++++ gl diox/w 25°C 75% C K1=7.17 1998SMb (71408) 507
 Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

 C10H13NOS HL CAS 99254-27-0 (8352)
 N-(2,5-Dimethylphenyl)-2-mercaptoacetamide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Sn++++ gl diox/w 30°C 75% M K1=12.91 B2=21.35 1993BGd (71704) 508
 Medium: 75% v/v dioxane/H2O, 0.10 M NaCl. Metal is (Me)2Sn+.
 For (Et)2Sn+, K1=12.88, K2=8.11. For (n-Bu)2Sn+, K1=12.91, K2=7.86.

 C10H13N4O8P H3L IMP CAS 131-99-7 (843)
 Inosine-5'-monophosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Sn++++ gl KNO3 25°C 0.10M M TIH K1=11.90 B2=19.37 2001ASa (71873) 509
 Metal ion is (CH3)2Sn+. Data for 15-35 C and for 25-75% v/v dioxane/H2O.
 DH(K1)=129.6 kJ mol-1, DS(K1)=664 J K-1 mol-1; DH(K2)=-8.5, DS(K2)=115.

Sn++++ gl NaNO3 25°C 0.10M M TIH K1=6.55 2001MSc (71874) 510
 B((CH3)3SnHL)=13.04
 B((CH3)3SnH-1L)=-1.76
 Metal ion is (CH3)3Sn+. Data for 15-35 C. DH(K1)=36.0 kJ mol-1, DS=246;
 DH(ML+H)=-22.9, DH(ML+OH)=-39.8. Data at 25 C for 25%-75% dioxane/H2O.

Sn++++ gl NaClO4 25°C 0.30M C 1987H0a (71875) 511
 B(SnHL)=11.41
 B(Sn2HL)=14.26

Sn=Sn(CH3)3(H2O)2

 C10H13N5O4 L Adenosine CAS 58-61-7 (2154)
 Adenosine, Adenine-9-beta-D-ribofuranoside;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Sn++++ gl KNO3 25°C 0.10M M K1=4.41 B2= 8.31 2001ASa (71950) 512
 Metal ion is (CH3)2Sn+.

Sn++++ gl NaNO3 25°C 0.10M M K1=2.52 2001MSc (71951) 513
B((CH3)3SnH-1L)=-3.60

Metal ion is (CH3)3Sn+.

C10H14N2O5 H2L Thymidine CAS 50-89-5 (8256)
Thymine deoxyriboside, 1-(2-Deoxy-beta-ribofuranosyl)-5-methyluracil;

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

Sn++++ gl KNO3 25°C 0.10M M K1=9.52 B2=16.83 2001ASa (72088) 514

Metal ion is (CH3)2Sn++.

C10H14N2O6 L alpha-Thymidine CAS 4449-43-8 (695)
Thymine-2-desoxyribofuranosyl-5-methyluracil;

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

Sn++++ gl NaNO3 25°C 0.10M M K1=6.67 2001MSc (72110) 515
B((CH3)3SnH-1L)=-0.41

Metal ion is (CH3)3Sn+.

Sn++++ gl diox/w 25°C 75% C K1=8.85 1998SMb (72111) 516

Metal is (C6H5)3Sn+ Medium: 75% dioxane/H2O, 0.10 M NaNO3.

C10H14N5O7P H2L AMP-5 CAS 18422-05-4 (842)
Adenosine-5'-monophosphoric acid, 5-Adenylic acid;

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

Sn++++ gl NaClO4 25°C 0.10M C K1=5.51 2002JNa (72486) 517
B(R2SnHL)=9.63
B(R2SnH-1L)=0.56
B(R2SnH-3L)=-15.17

Metal is (CH3)2Sn++.

Sn++++ gl KNO3 25°C 0.10M M TI K1=6.07 B2=10.74 2001ASa (72487) 518

Metal ion is (CH3)2Sn++.

Sn++++ gl NaNO3 25°C 0.10M M K1=4.41 2001MSc (72488) 519
B((CH3)3SnHL)=9.16
B((CH3)3SnH-1L)=-2.20

Metal ion is (CH3)3Sn+.

Sn++++ gl NaClO4 25°C 0.30M C K1=3.31 1987HOa (72489) 520
B(SnHL)=7.92
B(Sn2L)=4.73

Sn=Sn(CH3)3(H2O)2

C10H14N5O8P H3L GMP-5 CAS 85-32-5 (2947)

Guanosine-5'-monophosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	KNO3	25°C	0.10M	M	TI		K1=12.34 B2=20.13	2001ASa (72602)	521

Metal ion is (CH3)2Sn++. Data for 15-35 C and for 25-75% v/v dioxane/H2O.

Sn++++	gl	NaClO4	25°C	0.10M	C			K1=10.13 B(SnHL)=14.81 B(SnH-2L)=-6.29 B(SnH-3L)=-15.80	1999JNa (72603)	522
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Metal is Me2Sn++.

C10H15N4O14P3 H5L ITP CAS 35908-31-7 (2148)

Inosine 5'-triphosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	KNO3	25°C	0.10M	C	H		K1=10.21 B(SnHL)=16.82 B(SnH2L)=19.61 B(Sn2HL)=20.31	1992ACa (72769)	523

Metal is Sn(Me)2++. DH(K1)=10.9 kJ mol-1, DS=232; DH(SnHL)=-8.66, DS=293; DH(SnH2L)=-2.5, DS=367; DH(Sn2HL)=22.2, DS=460.

C10H16N2O8 H4L EDTA CAS 60-00-4 (120)

1,2-Diaminoethane-N,N,N',N'-tetraethanoic acid, Sequestric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	C			B(M2L)=15.41 B(M2H-1L)=10.44 B(M2H-2L)=4.75	1996ANb (74172)	524

Metal=[Sn(CH3)2]++

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

Adenosine-5'-triphosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaClO4	25°C	0.10M	C			K1=7.98 B(SnHL)=11.96 B(SnH2L)=14.29 B(SnH-1L)=1.32 B(SnH-3L)=-15.92	1999JNa (74820)	525

Metal is Me2Sn++. B(Sn2HL)=15.17

C10H16N5O14P3 H5L GTP CAS 86-01-1 (404)

Guanosine-5'-triphosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++++	gl	KNO3	25°C	0.10M	C	H	K1=10.69 B(SnHL)=17.63 B(SnH2L)=20.42 B(SnH3L)=22.56 B(Sn2HL)=21.00	1992ACa (74888)	526
Metal is Sn(Me)2++. DH(K1)=4.6 kJ mol ⁻¹ , DS=220; DH(SnHL)=-12.5, DS=290; DH(SnH2L)=-24.3, DS=314; DH(SnH3L)=-5.9, DS=410; DH(Sn2HL)=31.4, DS=506. *****									
C10H17N3O6S H3L Glutathione CAS 70-18-8 (333) Glutamyl-cysteinyL-glycine;									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++++	gl	NaNO3	25°C	0.10M	M		K1=6.99 B(R3SnHL)=15.48 B(R3SnH2L)=20.26	1992SHc (75144)	527
Metal ion is (CH3)3Sn+.									
Sn++++	gl	NaClO4	25°C	0.30M	C		B(SnHL)=14.17	1987HOa (75145)	528
Sn=Sn(CH3)3(H2O)2 *****									
C11H12N2O2 HL Tryptophan CAS 73-22-3 (3) 2-Amino-3-(3-indolyl)propanoic acid; H2N.CH(CH2.C8H6N)COOH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++++	gl	KNO3	25°C	0.10M	C		K(SnMe2+L)=11.37 B((SnMe2)HL)=11.37 B((SnMe2)H-1L)=3.22 B((SnMe2)H-2L)=-5.80	1995ACa (78234)	529

C11H21NO8S HL CAS 94231-87-5 (8392) N-D-Gluconyl-L-methionine;									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Sn++++	gl	NaClO4	25°C	0.10M	C		K1=2.80 B(SnH-1L)=-0.60 B(SnH-2L)=-5.15 B(SnH-3L)=-16.08	1995GBa (79780)	530
Metal is Et2Sn++ *****									
C12H6O12 H6L Mellitic acid (7400) Benzenehexacarboxylic acid; (C(COOH))6									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	NaCl	25°C	0.0	C	I			1999SFa (80115)	531
								K(SnMe3+L)=6.31 K(SnMe3+H+L)=12.86 K(SnMe3+2H+L)=17.97 K(2SnMe3+L)=9.23		

At I=0.25 M: K values: 2.89, 8.58, 12.80, 5.08; I=0.5 M: 2.61, 7.93, 11.78
4.54; I=1.0 M: 2.32, 7.41, 11.51, 4.26

C12H8N2 L Phenanthroline CAS 66-71-7 (144)
1,10-Phenanthroline;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	gl	KNO3	25°C	0.10M	U				1964PCa (80515)	532
								K(SnMe2+L)=4.2		
Sn++++	EMF	KNO3	25°C	0.10M	U				1963YTa (80516)	533
								K(SnMe2+L)=4.2		

C12H9N2O6ClS H4L Lumogallion CAS 4386-25-8 (4967)
5-Chloro-2-hydroxy-1-(2',4'-dihydroxyphenylazo)-3-sulfobenzene;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	sp	KNO3	rt	0.10M	U				1967MOa (80614)	534
								K(SnO+H3L=SnOHL+2H)=4.84		

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
Sn++++	gl	NaClO4	25°C	0.10M	C				1998BGa (82912)	535
								B((CH3)2SnH-3L)=-17.34 B((CH3)2SnH-4L)=-28.99		

Metal is (CH3)2Sn(IV)

C15H11N3O HL PAN CAS 85-85-8 (572)
1-(2-Pyridylazo)-2-naphthol; C5H4N.N:N.C10H6.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Sn++++	sp	oth/un	27°C	?	U	M			1974ZSa (91240)	536
								Keff(SnCl4+L)=5.4 Keff(SnBr4+L)=4.0		

Sn++++	sp	diox/w	25°C	20%	U				1967PIa (91241)	537
								K(SnMe2+L)=12.55		

K(SnEt2+L)=13.73
 K(SnBu2+L)=14.37
 K(SnPh2+L)=14.68

Medium: 20% dioxan, 0.1 M ClO4-

C15H12OS HL (1261)

mono-Thiodibenzoylmethane; C6H5.CO.CH2.CS.C6H5

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

Sn++++ gl diox/w 20°C 75% U T H 1985SGb (91503) 538

K(Sn(CH3)2+L)=11.79

K(Sn(CH3)2L+L)=7.00

DH(SnR2+2L)=-60.2 kJ mol-1, DS=153.8 J K-1 mol-1

 Sn++++ gl diox/w 20°C 75% U T H 1985SGb (91504) 539

K(Sn(C3H7)2+L)=11.85

K(Sn(C3H7)2L+L)=7.20

DH(SnR2+2L)=-66.0 kJ mol-1, DS=149 J K-1 mol-1

 Sn++++ gl diox/w 20°C 75% U T H 1985SGb (91505) 540

K(Sn(C4H9)2+L)=11.88

K(Sn(C4H9)2L+L)=7.42

DH(SnR2+2L)=-70.2 kJ mol-1, DS=131 J K-1 mol-1

C15H12O2 HL Diphenylacac CAS 120-46-7 (362)

1,3-Diphenylpropane-1,3-dione, Dibenzoylmethane; C6H5.CO.CH2.CO.C6H5

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

Sn++++ gl diox/w 20°C 75% U T H 1985SGb (91560) 541

K(Sn(CH3)2+L)=11.36

K(Sn(CH3)2L+L)=7.57

DH(SnR2+2L)=-116.6 kJ mol-1, DS=-36.0 J K-1 mol-1

 Sn++++ gl diox/w 20°C 75% U T H 1985SGb (91561) 542

K(Sn(C3H7)2+L)=11.48

K(Sn(C3H7)2L+L)=7.64

DH(SnR2+2L)=-121.4 kJ mol-1, DS=-48.8 J K-1 mol-1

 Sn++++ gl diox/w 20°C 75% U T H 1985SGb (91562) 543

K(Sn(C4H9)2+L)=11.58

K(Sn(C4H9)2L+L)=7.78

DH(SnR2+2L)=-132.0 kJ mol-1, DS=-80.2 J K-1 mol-1

C16H18N2O5S HL Penicillin V CAS 87-08-1 (943)

Phenoxymethylpenicillinic acid, 4-Thia-1-azabicyclo[3.2.0]heptane-2-carboxylic acid;

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

Sn++++ gl KNO3 25°C 0.10M M T H K1=7.17 B2=13.65 1983SBc (93819) 544
Also data for 35 C. DH(B2)=-7.61 kJ mol⁻¹, DS(B2)=368 J K⁻¹ mol⁻¹.

C19H14O7S H4L Pyrocatechol Vi CAS 369596-29-2 (709)
Pyrocatechol Violet,
3-[3,4-Dihydroxyphenyl-3-hydroxy-4-oxo-2,5-cyclohexadien-1-ylidenemethyl-b.;

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

Sn++++ sp NaCl ? 1.0M U 1972WVa (99116) 545
K(Sn+H3L=SnH2L+H)=7.80
K(Sn+2H3L=Sn(H2L)2+2H)=14.90
K(2Sn+H3L=Sn2H2L+H)=12.92

Medium: 1.0(NaCl), pH=3.0

C44H26N4Cl4 H2L CAS 22112-77-2 (1783)
5,10,15,20-4-Tetra-(4-chlorophenyl)porphine;

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

Sn++++ sp non-aq 25°C 100% C T H 2002AZa (107042) 546
K(CH3SnBr3+H2L)=3.76
K'(CH3SnBr3(H2L)+H2L)=4.19

Medium: CHCl3. Data for 5-25 C. DH(K)=-114 kJ mol⁻¹, DS(K)=-310 J K⁻¹mol⁻¹
DH(K')=-150, DS(K')=-420. For 3-Cl-phenyl, K=6.10; DH(K)=-185, DS(K)=-504.

Sn++++ sp non-aq 20°C 100% C T H 2002AZb (107043) 547
K(Me2SnBr2+H2L)=1.45
K'(Me2SnBr2(H2L)+H2L)=3.19

Medium:CHCl3. Data for 5-20 C. DH(K)=-69 kJ mol⁻¹, DS(K)=-207 J K⁻¹ mol⁻¹;
DH(K')=-83, DS(K')=-223.

Sn++++ sp non-aq 20°C 100% C T H 2002AZc (107044) 548
K(2Et2SnCl2+H2L)=4.04
K(2Bu2SnCl2+H2L)=3.54

Medium: CHCl3. Data for 5-25 C. DH(2Et2SnCl2+H2L)=-125 kJ mol⁻¹, DS=-348
J K⁻¹ mol⁻¹; DH(2Bu2SnCl2+H2L)=-120, DS=-344.

C44H26N8O8 H2L CAS 24843-73-8 (1779)
5,10,15,20-Tetra-(4-nitrophenyl)porphine;

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

Sn++++ sp non-aq 25°C 100% C T H 2002AZa (107048) 549
K(CH3SnBr3+H2L)=2.03
K'(CH3SnBr3(H2L)+H2L)=2.38

Medium: CHCl3. Data for 5-25 C. DH(K)=-90 kJ mol⁻¹, DS(K)=-262 J K⁻¹mol⁻¹;
DH(K')=-93, DS(K')=-266.

C44H30N4 H2L Tetraphenylpor. CAS 917-23-7 (1781)
5,10,15,20-Tetraphenyl-21H,23H-porphine;

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

Sn++++ sp non-aq 25°C 100% C T H 2002AZa (107073) 550
K(CH3SnBr3+H2L)=3.97
K'(CH3SnBr3(H2L)+H2L)=4.48
Medium: CHCl3. Data for 5-25 C. DH(K)=-135 kJ mol-1, DS(K)=-377 J K-1 mol-1; DH(K')=-165, DS(K')=-467.

Sn++++ sp non-aq 25°C 100% C T H 2002AZb (107074) 551
K(Me2SnBr2+H2L)=2.42
K'(Me2SnBr2(H2L)+H2L)=2.63
Medium:CHCl3. Data for 5-25 C. DH(K)=-80 kJ mol-1, DS(K)=-228 J K-1 mol-1; DH(K')=-107, DS(K')=-306.

Sn++++ sp non-aq 20°C 100% C T H 2002AZc (107075) 552
K(2Et2SnCl2+H2L)=5.08
K(2Bu2SnCl2+H2L)=4.38
Medium: CHCl3. Data for 5-25 C. DH(2Et2SnCl2+H2L)=-134 kJ mol-1, DS=-360 J K-1 mol-1; DH(2Bu2SnCl2+H2L)=-132, DS=-364.

C48H38N4 H2L CAS 14527-51-6 (1780)
5,10,15,20-Tetrakis-(4-methylphenyl)-21H,23H-porphine;

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

Sn++++ sp non-aq 25°C 100% C T H 2002AZa (107352) 553
K(CH3SnBr3+H2L)=4.25
K'(CH3SnBr3(H2L)+H2L)=5.06
Medium:CHCl3. Data for 5-25 C. DH(K)=-162 kJ mol-1, DS(K)=-464 J K-1mol-1; DH(K')=-175, DS(K')=-489. For 3-Me-phenyl, K=4.25; DH(K)=-162, DS(K)=-463.

Sn++++ sp non-aq 25°C 100% C T H 2002AZb (107353) 554
K(Me2SnBr2+H2L)=3.37
K'(Me2SnBr2(H2L)+H2L)=3.62
Medium: CHCl3. Data for 5-25 C. DH(K)=-112 kJ mol-1, DS(K)=-311 J K-1 mol-1; DH(K')=-116, DS(K')=-317.

Sn++++ sp non-aq 20°C 100% C T H 2002AZc (107354) 555
K(2Et2SnCl2+H2L)=5.45
K(2Bu2SnCl2+H2L)=5.32
Medium: CHCl3. Data for 5-25 C. DH(2Et2SnCl2+H2L)=-145 kJ mol-1, DS=-393 J K-1 mol-1; DH(2Bu2SnCl2+H2L)=-140, DS=-373.

C48H38N4O4 H2L CAS 22122-78-3 (1788)
5,10,15,20-Tetra-(4-Methoxyphenyl)porphine;

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

Sn++++ sp non-aq 25°C 100% C T H 2002AZa (107356) 556
K(CH₃SnBr₃+H₂L)=4.34
K'(CH₃SnBr₃(H₂L)+H₂L)=5.42
Medium:CHCl₃. Data for 5-25 C. DH(K)=-173 kJ mol⁻¹, DS(K)=-498 J K⁻¹mol⁻¹;
DH(K')=-185, DS(K')=-516.

Sn++++ sp non-aq 25°C 100% C T H 2002AZb (107357) 557
K(Me₂SnBr₂+H₂L)=3.50
K'(Me₂SnBr₂(H₂L)+H₂L)=3.70
Medium: CHCl₃. Data for 5-25 C. DH(K)=-112 kJ mol⁻¹, DS(K)=
-310 J K⁻¹ mol⁻¹; DH(K')=-121, DS(K')=-336.

Sn++++ sp non-aq 20°C 100% C T H 2002AZc (107358) 558
K(2Et₂SnCl₂+H₂L)=6.38
K(2Bu₂SnCl₂+H₂L)=6.20
Medium: CHCl₃. Data for 5-25 C. DH(2Et₂SnCl₂+H₂L)=-164 kJ mol⁻¹, DS=-436
J K⁻¹ mol⁻¹; DH(2Bu₂SnCl₂+H₂L)=-156, DS=-412.

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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