SC-Database
Software version = 5.81 Data version = 4.62
Experiment list contains 313 experiments for
 (no ligands specified)
 Metal : Bi+++
 (no references specified)
 (no experimental details specified)

****
e- HL Electron (442)
Electron;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp non-aq 130°C 100% U T 1967BBc (366) 1
  K=8.68
Medium: Na0.37Al0.63Cl2.26 eutectic. K: 6Bi+ = Bi+++ + Bi5+++. K=5.60(190 C)
At 380 C, different eutectic: K=-1.51, K(6Bi+ =Bi + 3Bi5+++)=10.23

Bi+++ ISE non-aq 264°C 100% U 1963BSa (367) 2
  K(4Bi+ = Bi4++++)=6.43
Medium: liquid BiCl3. By spectrophotometry, K=6.58

Bi+++ oth none 25°C 0.0 U 1952LAb (368) 3
  K=-23.2(-460 V)
K: 0.5Bi2O3(s)+1.5H2O+3e=Bi(s)+3OH. From thermodynamic data

Bi+++ EMF oth/un rt 1.0M U 1934BLa (369) 4
  K=21.5(620 mV)
Medium: NaOH;K: 4BiO2(s)+H2O+2e=Bi4O7(s)+2OH. K(Bi4O7(s)+H2O+2e=2Bi2O3(s)+
2OH)=18(510 mV). K(0.5Bi2O3(s)+1.5H2O+3e=Bi(s)+3OH)=-21(410 mV)

Bi+++ EMF none 25°C 0.0 U T 1918NCa (370) 5
  K=8.11(159.9 mV)
K: BiOCl(s)+2H+3e=Bi(s)+H2O+Cl. K=8.58(15 C;163.5 mV),7.67(35 C;156.3 mV)
****
AsO4--- H3L Arsenate CAS 7778-39-4 (1557)
Arsenate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sol oth/un 20°C var U 1956CHc (1132) 6
  Kso(BiL)=-9.36
****
Br- HL Bromide CAS 10035-10-6 (19)
Bromide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ EMF NaClO4 25°C 5.0M C TIH 1991SVa (1739) 7

B6=10.31
K6=0.7

Method: Hg/Bi amalgam electrode

Bi+++ ISE alc/w 25°C 100% U K1=6.23 B2=10.70 1984GSc (1740) 8
B3=14.63
B4=16.15

Bi+++ EMF non-aq 25°C 100% U K1=5.6 B2=11.0 1983SGa (1741) 9
B3=16.1
B4=19.2
B5=20.2
B6=22.8

Medium: DMF, 1.0 M NaClO4

Bi+++ EMF NaClO4 25°C 0.50M U I M K1=2.37 B2=4.18 1976FKa (1742) 10
B3=5.86
B4=7.28
B5=8.24
B6=8.34

B(BiClBr3)=7.18, B(BiCl4Br)=7.60, B(BiCl3Br2)=8.23, B(BiCl2Br3)=7.64 and B(BiClBr4)=9.04.

Bi+++ gl NaClO4 25°C 3.00M U I M K1=2.54 B2=5.05 1976FKb (1743) 11
B3=6.75
B4=8.10
B5=8.98
B6=9.75

B(BiBr(NO3))=3.40, B(BiBr2(NO3))=5.60, B(BiBr2(NO3)2)=6.12, B(BiBr3(NO3))= 7.57, B(BiBr4(NO3))=8.97. Data also for I=1,2 and 3 and Cd/Zn complexes

---

Bi+++ EMF oth/un 25°C 0.50M U I K1=2.37 B2=4.18 1971FKb (1744) 12
B3=5.86
B4=7.28
B5=8.23
B6=8.34

Medium:LiClO4. Also K1=2.22,B2=4.39,B3=6.17,B4=7.23,B5=8.67,B6=8.75(I=1)
Also data for 10,35,45,55,65 C and I to 4 M

Bi+++ EMF none 25°C 0.0 U T K1=3.06 B2=5.58 1971FKb (1745) 13
B3=7.42
B4=8.63
B5=9.23
B6=8.67

K1=3.08,B2=5.50,B3=7.50,B4=8.84,B5=9.18,B6=9.14(10 C); K1=3.16,B2=5.65, B3=7.44, B4=8.70, B5=9.02, B6=8.62(35 C) also to 55 C

Bi+++ sol NaClO4 25°C 0.50M U I 1971FKc (1746) 14
*Kso=6.26

Medium: LiClO4. *Kso: BiOL(s)+H=Bi+L+H20. Kso=6.47(I=1), 6.66(I=2),

6.97(I=3), 7.45(I=4), 7.45(I=0 corr)

Bi+++	ix	NaClO4	25°C	1.89M	U	K1=2.36 B2=4.42 B3=6.26 B4=7.7	1967LDb	(1747) 15

Bi+++	cal	NaClO4	30°C	4.0M	U T H		1967VLe	(1748) 16

Medium: HClO4. DH(K1)=-2.34 kJ mol-1(10 C),-1.50(18 C),-0.08(25 C), 0.42(30 C),1.05(35 C),3.14(50 C). DH values at 35 C also at various I values

---

Bi+++	sp	oth/un	25°C	4.0M	U	K1=3.18 B2=4.96 B4=8.79 B6=10.96 B8=?9.98 Ks((Me4N)3(BiL4)2L)=-14.11	1966PHa	(1749) 17

Medium: H2SO4

Bi+++	sol	NaClO4	25°C	3.0M	U	B2=4.29 B3=6.19 Ks(BiOL(s)+2H=Bi+L+H2O)=-6.24	1965JLb	(1750) 18

Bi+++	EMF	non-aq	226°C	100%	U T	K=2830/T-1.26	1962TOc	(1751) 19

Metal:Bi+. Medium: BiBr3(l). t:226-325C. K: 4BiBr=Bi4Br4, x units.
Alternative explanation: formation of Bi3Br3.

Bi+++	sol	NaClO4	20°C	3.0M	U	K1=2.26 B2=4.26 K3=1.92 K4=1.62 K(BiOBr(s)+2H=BiBr+H2O)=-6.52	1957AGa	(1752) 20

Medium: 2M NaClO4, 1M H+. By Bi/Hg electrode B2=4.45, K3=1.85, K4=1.40, K5=1.58, K6=0.10

Bi+++	EMF	KNO3	20°C	2.30M	U	B6=9.70 (in 0.6M H+) B4=7.82 (in 1.2M H+)	1953BGa	(1753) 21

Method: Ag and Bi electrodes.

Bi+++	sol	oth/un	25°C	var	U I	K2=1.25 K(BiOBr(s)+2H=BiBr+H2O)=-2.43 K3=0.32	1953YAb	(1754) 22

In 1 M HNO3 K(BiOL(s)+2H+L=BiL2+H2O)=-1.18, K(BiOL(s)+2H+2L=BiL3+H2O)=-0.86

Bi+++	EMF	oth/un	rt	2.50M	U	K1=4.30 B2=6.52	1939BAb	(1755) 23

Method: Bi electrode. Medium: HNO3.

****

CS3-- H2L CAS 549-08-1 (936)
Trithiocarbonate;

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

```
--------------------------------------------------------------------------------
Bi+++      sol oth/un 25°C  0.0  U        K1=2.1         1968VGb  (3465)  24
                                         B(BiClL)=5.5
                                         B(BiClL2)=7.6
                                         B(BiClL3=7.8
Medium: 0 corr. from 1 and 2 M HClO4
********************************************************************************
Cl-                    HL    Chloride         CAS 7647-01-0  (50)
Chloride;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      ix  oth/un 25°C  1.0M C        K1=2.36   B2= 3.61  1990SOa  (4526)  25
                                         B3=4.95
Medium: 1.0 M HCl/HClO4. Method: tracer concentration of 210Bi.
--------------------------------------------------------------------------------
Bi+++      ISE alc/w  25°C 100%  U        K1=6.15   B2=10.0   1984GSc  (4527)  26
                                         B3=12.9
                                         B4=14.2
--------------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U        K1=6.6    B2=12.6   1983SGa  (4528)  27
                                         B3=18.7
                                         B4=20.9
Medium: DMF, 1.0 M NaClO4
--------------------------------------------------------------------------------
Bi+++      EMF NaClO4 25°C 0.50M U  I M   K1=2.82   B2=4.44   1976FKa  (4529)  28
                                         B3=5.45
                                         B4=6.23
                                         B5=6.11
                                         B6=6.68
B(BiClBr)=4.80, B(BiCl2Br)=6.18, B(BiClBr2)=6.45, B(BiCl3Br)=7.36 and
B(BiCl2Br2)=8.00.
--------------------------------------------------------------------------------
Bi+++      vlt NaClO4 20°C 4.70M U                    1975KBb  (4530)  29
                                         B5=6.92
--------------------------------------------------------------------------------
Bi+++      ISE NaClO4 25°C 0.50M U  I     K1=2.82   B2=4.44   1974FKb  (4531)  30
                                         B3=5.45
                                         B4=6.23
                                         B5=6.11
                                         B6=6.68
Medium:LiClO4;K1=2.71,B2=4.04,B3=5.18,B4=6.41,B5=5.95(I=1);K1=2.53,B2=4.66,
B3=6.32,B4=7.93,B5=8.18,B6=6.00(I=3). I=0:K1=3.7,B2=5.5,B3=6.9,B4=7.9,B5=7.0
--------------------------------------------------------------------------------
Bi+++      ISE NaClO4 25°C 0.50M U  I M                1974FKb  (4532)  31
                                         B(Bi(NO3)L)=3.40
                                         B(Bi(NO3)L2)=4.60
                                         B(Bi(NO3)2L)=3.19
                                         B(Bi(NO3)L3)=6.30
Medium: LiClO4; Bi amalgan electrode. Data on many related complexes at I=0
```

to I-4

Bi+++ sol NaClO4 25°C 2.0M U I K1=2.12 B2=3.85 1973BMe (4533) 32
B3=5.32
B4=6.22

Medium: HClO4. K1=2.09,B2=4.04,B3=5.56,B4=6.88,B5=7.60(I=3);K1=2.13,B2=4.17, B3=6.01,B4=7.30,B5=8.29(I=4)

Bi+++ vlt NaClO4 30°C 2.0M U K1=2.2 B2=3.8 1970BWb (4534) 33
B3=5.6
B4=6.9 to 7.2

Bi+++ sp NaClO4 25°C 5.0M U K1=2.35 B2=4.40 1970KAa (4535) 34
K3=1.05
K4=1.20
K5=0.64
K6=-0.23

Bi+++ oth oth/un 25°C var U K1=2.44 B2=3.10 1969CAa (4536) 35
K3=0.64
K4=0.03

Medium: HCl. Method: electrophoresis

Bi+++ sol NaClO4 25°C 4.0M U K1=3.0 B2=4.3 1969JOa (4537) 36
B3=6.7
B4=6.9
B5=8.6
B6=8.4

*Kso(BiOL(s)+2H=Bi+2H2O+L)=-7.39

Bi+++ sol NaClO4 50°C 3.0M U TI 1968VGc (4538) 37
*Kso(BiOL(s)+2H=Bi+L+H2O)=-6.6

*Kso=-6.81(15 C),-6.75(25 C); at I=2:*Kso=-6.63(15 C),-6.54(25 C),-6.52(50C) AtI=1:*Kso=-6.52(15 C),-6.47(25 C),6.41(50 C)

Bi+++ ISE NaClO4 25°C 3.0M U H 1967AHa (4539) 38

Method:amalgam electrode. Medium: LiClO4. DH(K1)=0, DS=42 kJ mol-1

Bi+++ vlt oth/un 25°C 1.0M U 1967CVa (4540) 39
B5=5.25

Medium: HNO3. In H2SO4: B5=5.35

Bi+++ sol NaClO4 25°C var U I 1967VGa (4541) 40
*Kso=-6.61

Medium:HClO4 var. At I=0 corr:*Kso=-7.87

Bi+++ sol oth/un 25°C var U 1967VGa (4542) 41
*Kso=-6.72
B(BiCl(NO3)2)=3.23

Medium:H+ var. At I=0 corr:*Kso=-7.95, B=5.04

Bi+++ cal NaClO4 17°C 4.0M U TIH 1967VLe (4543) 42

Medium: HClO4. DH(K1)=-2.6 kJ mol-1(-7 C),-1.1(0 C),-0.6(5 C),0.5(10 C), 1.4(18 C),2.2(25 C),4.3(40 C). Also at 25 C in HClO4 I=6 to 0

Bi+++ ix NaClO4 25°C 1.89M U K1=2.34 B2=3.89 1966LDa (4544) 43

B3=5.23

Bi+++ sol NaClO4 25°C 4.0M U B2=4.30 1965JLb (4545) 44

B3=5.91

B4=6.76

Ks(BiOL(s)+2H=Bi+L+H2O)=-7.08

Bi+++ ISE NaClO4 20°C 2.0M U 1964HSc (4546) 45

K5.K6=0.28

K3.K4=2.40

In 1 M HClO4: B2=4.5 (see J.Inorg.Nucl.Chem.,1966,28,2037

Bi+++ sol oth/un 25°C 4.0M U 1964HSc (4547) 46

Ks((Me4N)3(BiCl4)Cl2)=-7.64

K5.K6=0.8

K3.K4=2.58

Medium: H2SO4. By spectrophotometry:B6/B4=0.5, B4/B2=2.08

Bi+++ ISE oth/un 25°C 4.0M U H 1963MFe (4548) 47

K(NH4+BiCl6)=0.11

K=0.26(45 C), 0.38(65 C). DH(K)=22 kJ mol-1, DS=79 J K-1 mol-1

Bi+++ ISE oth/un 25°C 4.0M U T HM 1963MKa (4549) 48

K(Na+BiCl6)=-0.26

K(2Na+BiCl6)=-0.7

K(K+BiCl6)=0.18

K(2K+BiCl6)=-1.0

Method: BiHg electrode. Medium:4(Li/H)Cl. Values for 25-65 C with Na, K, Rb and Cs somplexes. Also DH and DS

Bi+++ ISE NaClO4 25°C 4.0M U T K1=2.2 B2=3.5 1963MKe (4550) 49

K3=2.3

K4=0.95

K5=0.55

K6=0.06

Method:Bi/Hg electrode, 3 M LiClO4,1 M HClO4. 45C: K1=2.2, K2=1.55, K3=2.35, K4=0.9, K5=0.3, K6=0.06. 65 C: 2.2, 1.7, 2.4, 0.85, 0.45, -0.24

Bi+++ vlt NaClO4 25°C 7.0M U I K1=1.91 B2=4.58 1959DPb (4551) 50

K3=1.32

K4=1.79

K5=1.60

K6=-1.59

B5=9.29. Data at other NaClO4 concentrations

```
--------------------------------------------------------------------------------
Bi+++      ISE NaClO4 20°C  3.0M U        B2=3.5         1957AGa  (4552)  51
                                         K3=1.85
                                         K4=0.75
                                         K5=0.62
                                         K6=-0.16
Method: Bi/Hg electrode(Bi); B6=6.56. By sol. Ks(BiOL+2H=Bi+L+H2O)=-6.68,
K1=2.36
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4   ?   5.0M U  I                  1957NHa  (4553)  52
                                         K3=1.35
                                         K4=0.43
                                         K5=0.48
In 1 M HClO4 K1=2.43, K2=2 to 3?; K5=0.9, K6=-0.21. Plus other media
--------------------------------------------------------------------------------
Bi+++      sp  oth/un   ?   5.0M U        K1=2.43   B2=4.43   1956NEa  (4554)  53
                                         K3=1.35
                                         K4=0.43
                                         K5=0.48
--------------------------------------------------------------------------------
Bi+++      ISE oth/un 20°C 2.90M U  I                 1953BGa  (4555)  54
                                         B6=6.42
Method: Ag and Bi electrodes. Medium: 2.9 M NO3. In 4.5 M: B4=5.42, B5=5.70
--------------------------------------------------------------------------------
Bi+++      ISE oth/un   ?  2.50M U        K1=2.44        1953YAb  (4556)  55
                                         B4=5.0
--------------------------------------------------------------------------------
Bi+++      sol oth/un 25°C  1.0M U        K2=0.66        1953YAb  (4557)  56
                                         Ks(BiOL(s)+2H+L=BiL2+H2O)=-1.9
                                         Ks(BiOL(s)+2H+2L=BiL3)=-1.23
                                         Ks(BiOL(s)+2H+3L=BiL4)=-1.20
                                         K3=0.64
Medium: HNO3. K4=0.03, Ks(BiOL+2H=BiL+H2O)=-2.54
--------------------------------------------------------------------------------
Bi+++      sol none   25°C  0.0  U                  1952LAb  (4558)  57
                                         Ks(BiOL3+2H+3L=BiL4+H2O)=-0.1
--------------------------------------------------------------------------------
Bi+++      vlt oth/un 25°C  1.0M U                  1951FIa  (4559)  58
                                         Ks(BiOL+H2O=Bi+2OH+Cl)=-34
                                         B4=5.52
--------------------------------------------------------------------------------
Bi+++      ISE oth/un  rt  2.50M U                  1939BAb  (4560)  59
                                         B4=5.37
--------------------------------------------------------------------------------
Bi+++      ISE none   25°C  0.0  U                  1935VHa  (4561)  60
                                         B4=5.54
--------------------------------------------------------------------------------
Bi+++      sol none   18°C  0.0  U                  1923JKa  (4562)  61
                                         Ks(BiOL(s)+H2O=Bi+2OH+L)=-30.8
********************************************************************************
```

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	vlt	NaClO4	30°C	2.0M	U				1969BOb (6785)	62
							K(Bi+HF=BiF+H)=1.41			
							K(Bi+2HF=BiF2+2H)=0.3			
							K(Bi+3HF=BiF3+3H)=2.70			
Bi+++	ix	NaClO4	25°C	1.89M	U		K1=4.7	B2=8.3	1967LDb (6786)	63
							K(Bi+HL=BiF+H)=1.71			
							K(Bi+2HL=BiF2+2H)=2.31			

Medium: HClO4

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	sp	diox/w	25°C	100%	U	M			1966GBa (7388)	64
							K(BiICl2+BiI3=2BiI2Cl)=-0.8			
							K(BiCl3+BiI2Cl=2BiCl2)=0.56			
Bi+++	sp	NaClO4	?	1.0M	U	M			1956NHa (7389)	65
							K(Bi(Cl3Br2+2Br=BiClBr4)=0.52			
							K(BiCl2Br3+Br=BiClBr4)=-0.5			
							K(BiBr4Cl+Br=BiBr5+Cl)=-0.26			

Medium: HClO4

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	ISE	alc/w	25°C	100%	U		K1=7.4	B2=15.1	1984GSc (7894)	66
							B3=21.0			
							B4=26.0			
Bi+++	EMF	non-aq	25°C	100%	U		K1=5.0	B2=10.6	1983SGa (7895)	67
							B3=16.0			
							B4=22.5			
							B5=26.1			
							B6=28.8			

Medium: DMF, 1.0 M NaClO4

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	sol	NaClO4	25°C	3.0M	U	T H	K1=2.91	B2=6.56	1972FKd (7896)	68
							B3=9.90			
							B4=12.36			
							B5=14.38			

B6=14.94
Medium:(Li,H)ClO4.K1=3.64,B2=7.35,B3=10.72,B4=13.20,B5=15.25,B6=16.25(6 C);
K1=3.00,B2=6.59,B3=10.00,B4=12.70,B5=14.75,B6=15.24(15 C);also 35, 45 C

Bi+++ sol NaClO4 35°C 3.0M U T H K1=2.62 B2=6.35 1972FKd (7897) 69
B3=9.78
B4=11.90
B5=13.72
B6=14.79
Medium: (Li,H)ClO4. K1=2.92,B2=6.31,B3=9.53,B4=11.74,B5=13.56,B6=14.39(45 C)

Bi+++ sp NaClO4 25°C 4.0M U 1968HJb (7898) 70
K7=-1.3
2nd method:solubility. Alternatively K7K8=-2.05

Bi+++ sp NaClO4 24°C 3.0M U 1967EHa (7899) 71
K4=2.42
K5.K6=2.43
K7=-0.85
K(BiI3(s)=BiI3)=-2.45
Medium:2 M NaClO4,1 HClO4. By solubility, Bi/Hg electrode(20 C): K5.K6=3.85

Bi+++ ix NaClO4 25°C 1.89M U K1=2.90 1967LDb (7900) 72
Method:cation exchange. Medium: HClO4

Bi+++ sp NaClO4 24°C 1.0M U K1=2.68 1964EHa (7901) 73
Medium:HClO4

Bi+++ sol NaClO4 20°C 3.0M U 1957AGa (7902) 74
Kso(BiL3)=-18.09
B4=14.95
K5=1.85
K6=2.0
By Bi/Hg electrode B6=19.4

Bi+++ sp NaClO4 25°C 0.50M U K1=3.63 1957FHa (7903) 75
Medium: HClO4

Bi+++ ISE KNO3 20°C 2.90M U 1953BGa (7904) 76
B6=11.51
****
NH3 L Ammonia CAS 7664-41-7 (414)
Ammonia

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ gl R4N.X 25°C 5.00M U K1=5.0 1985MMa (9098) 77
****
NO3- HL Nitrate CAS 7697-37-2 (288)
Nitrate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	ix	oth/un	25°C	1.0M	C		K1=0.74 B3=1.54	B2= 1.22	1990SOa (9587)	78
Medium: 1.0 M HNO3/HClO4. Method: tracer concentration of 210Bi.										
Bi+++	gl	NaClO4	25°C	3.00M	U	I M	K1=0.73 B3=0.87 B4=0.54 B5=1.90 B6=1.60	B2=1.16	1976FKb (9588)	79
B(BiBr(NO3)2)=3.60, B(BiBr(NO3)3)=3.26, B(BiBr(NO3)4)=3.45, B(BiBr2(NO3)3)= 6.14, B(BiBr3(NO3)2)=7.20. Data also for I=1,2 and 3 and Cd/Zn complexes										
Bi+++	ISE	NaClO4	25°C	2.0M	U	TI	K1=0.72 B3=0.20 B4=0.58	B2=0.98	1974FKb (9589)	80
Method: Bi/Hg electrode. Medium:LiClO4. K1=1.74, B2=2.55(I=0 corr). K1=0.72, B2=0.94(I=0.5). K1=0.81, B2=0.90, B3=0.72(I=1)										
Bi+++	ISE	NaClO4	25°C	3.0M	U	TI	K1=0.72 B3=0.11 B4=-0.22	B2=0.97	1974FKb (9590)	81
Method: Bi/Hg. Medium:LiClO4. K1=0.92, B2=1.23, B3=1.08, B4=0.04(I=4)										
Bi+++	ISE	NaClO4	5°C	3.0M	U	T	K1=0.83 B3=1.08 B4=0.6 B5=-0.16 B6=-0.40	B2=1.11	1974FKb (9591)	82
Method:Bi/Hg electrode. Medium:HClO4. K1=0.73, B2=1.05, B3=0.78, B4=0.62,B5= -0.15,B6=-0.4(55 C). K1=0.75,B2=1.12,B3=0.94,B4=0.72,B5=-0.30,B6=-0.40(15 C)										
Bi+++	ISE	NaClO4	25°C	3.0M	U	T H	K1=0.73 B3=0.87 B4=0.54 B5=-0.10 B6=-0.40	B2=1.15	1974FKb (9592)	83
Method:Bi/Hg electrode. Medium:HClO4. DH(K1)=-4.4 kJ mol-1 K1=0.72, B2=1.15, B3=0.82, B4=0.5, B5=0.0, B6=-0.5(35 C)										
Bi+++	ix	NaClO4	?	1.0M	U		K1=0.96 K3=0.35 K4=0.07 K5=-0.18 K6=-0.56	B2=1.58	1967KNc (9593)	84
Bi+++	sol	oth/un	25°C	var	U		K1=1.38 K(BiOL(s)+2H=Bi+L+H2O)=-1.92	B2=1.42	1967VGa (9594)	85

At I=0 corr: K1=2.32, K2=0.67, K=-3.20

Bi+++	sol	oth/un	25°C	var	U	K1=1.26	1953YAb (9595)	86	
						Ks(BiOL(s)+2H=Bi+L+H2O)=-2.18			

Bi+++	sol	oth/un	25°C	0.0	U		1951SGa (9596)	87	
						Ks(BiOL(s)+2H=Bi+L+H2O)=-2.55			

****

OH- HL Hydroxide (57)

Hydroxide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sol	NaNO3	23°C	1.0M	C	I		1993KDa (11068)	88
							*B2=-4.0		
							*B3=-10.0		
							*B4=-21.5		
							*B(6,12)=0.3		

*Kso(BiONO3)=-1.2. Also data for 1.0 M NaClO4. *Kso(BiOClO4)=-0.9.

Bi+++	oth	NaClO4	25°C	0.25M	U		1987MRa (11069)	89	
							*K1=-1.4		
							*B2=-2.17		
							*B3=-2.84		
							*B4=-13.07		

Method: electrophoresis, measured by Bi-205 and Bi-206

Bi+++	dis	NaCl	25°C	1.0M	C		1987SSc (11070)	90	
							K(Bi+OH+5Cl)=10.9		
							K(Bi+2OH+4Cl)=17.5		
							K(Bi+3OH+3Cl)=30.2		

Extraction from 1.0 M (Na,H)Cl solution into dithizone(H2A)/CCl4, using tracer concentration of 210Bi. K(Bi+3H2A(org)=Bi(HA)3(org)+3H)=4.63.

Bi+++	dis	NaClO4	25°C	1.0M	C	I	K1=12.0 B2=22.90	1982HSa (11071)	91	
							B3=33.9			

Method: solvent extraction of 210Bi with dithizone/CCl4.
Also data for 1.0 M NaNO3.

Bi+++	sol	NaCl	75°C	?	U	T		1982LKa (11072)	92
							*B2=-1.15		
							*B3=-6.60		
							Kso(Bi(OH)3)=-5.07		

Further data available for 200 and 300 C

Bi+++	gl	NaClO4	37°C	0.15M	C			1977WIa (11073)	93
							*K1=-1.58		
							*B(6,12)=0.33		

Bi+++	sp	KNO3	22°C	0.10M	U	I	K1=12.55	B2=24.68	1975ANb (11074)	94

```
                                        B3=36.37
-------------------------------------------------------------------------------
Bi+++      cal NaClO4 25°C  3.0M C   H                  1975OLb (11075)  95
                                        *K1=-1.58
                                        *B(6,12)=0.33
DH(*K1)=17 kJ mol-1,DS(*K1)=27 J K-1 mol-1; DH(*B(6,12))=133, DS(*B(6,12))
=450; DH(Bi+OH)=-38, DS(Bi+OH)=115; DH(6Bi+12OH)=-525, DS(6Bi+12OH)=1500.
-------------------------------------------------------------------------------
Bi+++      gl  NaClO4   ?  0.10M U                    1974DNa (11076)  96
                                        B4'=-2.77
                                        B5'=-5.93
                                        B7'=-6.70
Bn': 9Bi(OH)+nOH=Bi9(OH)(18+n)
-------------------------------------------------------------------------------
Bi+++      sp  NaClO4   ?  1.00M U                    1972DNa (11077)  97
                                        *K1=-1.55
                                        *B2=-2.82
                                        *B(6,12)=0.26
-------------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C 0.10M U                    1972DNc (11078)  98
                                        K=-3.9
                                        *K(Bi9(OH)20)=-3.2
                                        Ka(Bi9(OH)21)=-2.8
K: 3/2Bi6(OH)12+2H2O=Bi9(OH)20+2H; *K: Bi9(OH)20=Bi9O(OH)19+H
-------------------------------------------------------------------------------
Bi+++      dis NaClO4 25°C 0.10M U       K1=12.36     1971BIa (11079)  99
                                        B3=31.94
                                        B4=32.90
-------------------------------------------------------------------------------
Bi+++      sol NaClO4 25°C 1.00M U                    1971BIa (11080) 100
                                        Ks(Bi(OH)3(s)+OH)=0.95
                                        Kso=-37.29
Kso: 0.5alpha-Bi2O3(s) + 1.5H2O=Bi + 3OH
-------------------------------------------------------------------------------
Bi+++      gl  NaClO4 25°C  1.0M U                    1960TOa (11081) 101
                                        *B(6,12)=-0.53
                                        *B(6,15)=-8.6(?)
*B(m,n): mBi+nH2O=Bim(OH)n+nH
-------------------------------------------------------------------------------
Bi+++      gl  NaClO4 25°C  1.0M U                    1960TOa (11082) 102
                                        *B(6,12)=-0.53
                                        *B(6,15)=-8.6(?)
*B(m,n): mBi+nH2O=Bim(OH)n+nH
-------------------------------------------------------------------------------
Bi+++      gl  NaClO4 25°C 0.10M U                    1959OLa (11083) 103
                                        Ka(Bi9(OH)20)=-3.2
                                        Ka(Bi9(OH)21)=-2.6
K(1.5Bi6(OH)12+2H2O=Bi9(OH)20+2H)=-3.5. Bi/Hg electrode also used
-------------------------------------------------------------------------------
Bi+++      gl  NaClO4 25°C 0.10M U                    1959OLa (11084) 104
```

```
                                        Ka(Bi9(OH)20)=-3.2
                                        Ka(Bi9(OH)21)=-2.6
K(1.5Bi6(OH)12+2H2O=Bi9(OH)20+2H)=-3.5. Bi/Hg electrode also used
--------------------------------------------------------------------------------
Bi+++      vlt none   12°C  0.0  U                    1957KOb (11085) 105
                                        Kso(0.5Bi2O3)=-31.5
--------------------------------------------------------------------------------
Bi+++      vlt none   12°C  0.0  U                    1957KOb (11086) 106
                                        Kso(0.5Bi2O3)=-31.5
--------------------------------------------------------------------------------
Bi+++      EMF NaClO4 25°C  3.0M U                    1957OLa (11087) 107
                                        *K1=-1.58
                                        *B(6Bi+12H2O=Bi6(OH)12)=0.33
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4   ?  1.20M U                    1948SPa (11088) 108
                                        *B(4,8)=-1.4
*B(4,8): 4Bi+8H2O=Bi4(OH)8+8H
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4   ?  1.20M U                    1948SPa (11089) 109
                                        *B(4,8)=-1.4
*B(4,8): 4Bi+8H2O=Bi4(OH)8+8H
--------------------------------------------------------------------------------
Bi+++      sol oth/un 25°C  var  U                    1943SRa (11090) 110
                                        Ks4=-5.30
Medium: NaOH. Ks4: 0.5Bi2O3+1.5H2O+OH=Bi(OH)4
--------------------------------------------------------------------------------
Bi+++      sol oth/un 25°C  var  U                    1943SRa (11091) 111
                                        Ks4=-5.30
Medium: NaOH. Ks4: 0.5Bi2O3+1.5H2O+OH=Bi(OH)4
--------------------------------------------------------------------------------
Bi+++      ISE NaClO4 18°C 0.50M U                    1936HOa (11092) 112
                                        *B(2,4)=-1.60
                                        *B(2,5)=-4.60
*B(m,n)(mBi+nH2O=Bim(OH)n+nH). Method: Bi and quinhydrone electrodes
--------------------------------------------------------------------------------
Bi+++      vlt oth/un   ?   var  U                    1925BAa (11093) 113
                                        Kso=-30.37
********************************************************************************
O2                      L    Oxygen           CAS 7782-44-7  (83)
Dioxygen, also oxide; O--, and superoxide, O2-
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      vlt non-aq 450°C 100%  U       K1=3.0    B2=7.90   1974SPb (12609) 114
                                        K3=3.2
Ligand=Oxide, O--; Medium: fused(Li,K)Cl
********************************************************************************
PO4---                 H3L    Phosphate        CAS 7664-38-2  (176)
Phosphate;
--------------------------------------------------------------------------------
```

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      vlt oth/un 20°C  var  U                         1958KBa (13117) 115
                                       Kso(BiL)=-23.5
-------------------------------------------------------------------------
Bi+++      sol oth/un 18°C  var  U                         1958KCb (13118) 116
                                       Kso=-21.14
-------------------------------------------------------------------------
Bi+++      sol oth/un 18°C  var  U                         1951ZHa (13119) 117
                                       Kso(BiL)=-22.89
*************************************************************************
S--                    H2L    Sulfide          CAS 7783-06-4  (705)
Sulfide;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      oth none   25°C    0  U                         1988LIa (14324) 118
                                       Kso(Bi2S3)=-115.1
                                       *Kso(Bi2S3)=-63.1
Derived from thermodynamic data and K(H+S=HS)=17.3.
-------------------------------------------------------------------------
Bi+++      oth none   25°C  0.0  U                         1964PCa (14325) 119
From thermodynamic data. K(0.5Bi2L3(s)+3H=Bi+1.5H2S(g))=-13.6.
Alternative value: K=-20.3
-------------------------------------------------------------------------
Bi+++      oth none   25°C  0.0  U                         1952GGc (14326) 120
                                       Kso(Bi2L3)=-96
From thermodynamic data
-------------------------------------------------------------------------
Bi+++      sol none   25°C  0.0  U                         1937KAa (14327) 121
                                       Kso(Bi2L3)=-88.72
-------------------------------------------------------------------------
Bi+++      ISE oth/un  rt   var  U                         1931KOa (14328) 122
                                       Kso(Bi2L3)=-71.8?
Method: Bi electrode. Medium:NaHS. K(0.5Bi2L3(s)+3H=Bi+1.5H2L(g))=-1.5?
-------------------------------------------------------------------------
Bi+++      ISE oth/un  rt   var  U                         1909BZa (14329) 123
                                       Kso(Bi2L3)=-90.5
Method: Bi electrode. Medium:NaHS. K(0.5Bi2L3(s)+3H=Bi+1.5H2L(g))=-10.8
*************************************************************************
SCN-                    HL    Thiocyanate      CAS 463-56-9  (106)
Thiocyanate;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      ISE alc/w  25°C 100%  U        K1=4.2    B2=7.54   1984GSc (14827) 124
                                       B3=9.54
                                       B4=11.4
-------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U      T K1=1.9    B2=3.9    1983SGa (14828) 125
```

B3=6.2
B4=7.8
Medium: DMF, 1.0 M NaClO4

Bi+++ ISE oth/un 25°C 3.0M U T T K1=1.28 B2=2.67 1971FKe (14829) 126
B3=3.74
B4=5.2
B5=5.9
B6=6.9
Medium: LiClO4. K1=1.08,B2=2.48,B3=3.4,B4=4.6,B5=5.5,B6=6.4(15 C); K1=1.54,
B2=2.72, B3=4.1, B4=5.4, B5=5.9, B6=6.8(35 C). Method: Bi amalgam electrode
---
Bi+++ ISE NaClO4 45°C 3.0M U T K1=1.7 B2=3.1 1971FKe (14830) 127
B3=4.3
B4=5.5
B5=5.5
B6=6.15
Medium: LiClO4; K1=1.7, B2=3.4, B3=4.3, B4=5.15, B5=5.5, B6=6.9(55 C).
Bi amalgam electrode. At I=0: K1=2.21,B2=3.7,B3=4.4,B4=5.2,B5=5.8,B6=5.4

Bi+++ sp NaClO4 ? 3.90M U 1966JLa (14831) 128
K(BiL5Br+L=BiL6+Br)=-2.03
K(BiL3Br3+2L=BiL5Br+2Br)=-2.77
B(BiL5Br)=6.21
B(BiL3Br3)=9.0
Medium: 3.9 Na+,0.25 H+(ClO4). B6=4.18

Bi+++ sol NaClO4 25°C 2.0M U T 1965JLb (14832) 129
B(BiClL)=4.71
B(BiClL2)=5.67
B(BiBrL)=4.08
B(BiBrL2)=5.30

Bi+++ ISE KNO3 20°C 0.40M U I K1=0.83 B2=1.92 1959GBc (14833) 130
B3=2.74
B4=3.40
Method: Bi/Hg electrode. In B5=3.25, B6=3.19

Bi+++ sp oth/un 20°C 2.70M U 1949GBa (14834) 131
B6=2.33
Medium: 2.7 M CH3CO2H

Bi+++ sp NaClO4 20°C 5.0M U I K1=1.03 1949KHb (14835) 132
Medium: HClO4. In 0.4 M HClO4: K1=1.15, K2=1.11, K2*K4=1.15, K5*K6=0.82
****
SO4-- H2L Sulfate CAS 7664-93-9 (15)
Sulfate;

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

Bi+++ ISE NaClO4 25°C 1.00M U I K1=1.77 B2=3.16 1981FKb (16031) 133
Medium: LiClO4.

Bi+++ ISE NaClO4 15°C 3.0M U T H K1=1.97 B2=3.18 1971FKd (16032) 134
B3=4.01
B4=4.60
B5=4.79
Medium: LiClO4. At 25 C: K1=1.98,B2=3.41,B3=4.08,B4=4.34,B5=4.6. 45 C: 2.16, 3.90,5.04,5.10,5.39. 65 C: 2.22,3.90,5.14,5.93,5.69
****
SeCN- HL Selenocyanate CAS 73102-11-2 (440)
Selenocyanate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp non-aq ? 100% U 1972ZSa (16981) 135
B(Bi(SCN)5L)=10.15
Medium: acetonitrile. B=9.15 in Chem. Abstr.
****
CH4N2S L Thiourea CAS 62-56-6 (51)
Thiocarbamide, Thiourea; (H2N)2CS

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp NaClO4 24°C 1.68M U T B2=1.70 1980HSa (17812) 136

Bi+++ sp NaClO4 25°C 1.00M U K1=1.19 1979FFa (17813) 137

Bi+++ sp NaClO4 25°C 1.00M U K1=1.19 1978FBa (17814) 138

Bi+++ sp NaClO4 25°C 1.00M U K1=1.47 1978FBa (17815) 139
Medium: 20%(vol) EtOH/H2O; Data for 40 and 60% EtOH/H2O and other media also given
---
Bi+++ sp NaClO4 25°C 1.00M U I K1=1.24 1978GFc (17816) 140

Bi+++ sp NaClO4 ? 3.0M U I K1=2.40 B2=3.55 1967VGa (17817) 141
K3=0.32
Medium: 1 M HClO4,x NaClO4. K1=2.28(x=0), 2.35(x=1); K2=1.04(x=0),1.05(x=1); K3=0.32(x=0),0.30(x=1). At I=0 corr: K1=2.24, K2=0.96, K3=0.30

Bi+++ sp NaClO4 20°C 0.90M U 1966SIc (17818) 142
B6=9.3
Medium: HClO4, 18-22 C
****
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
---

```
Bi+++      oth NaClO4 25°C 0.20M U  I     K1=7.65   B2=12.46  1987RHa (18820) 143
Using Electromigration with a radioactive Bi tracer.
--------------------------------------------------------------------------------
Bi+++      dis oth/un 20°C 0.10M U                        1963STc (18821) 144
                                        Kso=-35.4
Medium: KClO4
********************************************************************************
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
--------------------------------------------------------------------------------
Bi+++      vlt oth/un 25°C 0.50M U        K1=10.0        1993HCa (21505) 145
                                        K(BiL+OH)=9.8
Medium: 0.5 M HNO3.
********************************************************************************
C2H6N2S                 L    Methyl-Thiourea  CAS 598-52-7  (1077)
N-Methylthiourea; CH3.NH.CS.NH2
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C 1.00M U        K1=1.45        1979FFa (22008) 146
********************************************************************************
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
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C  1.0M U        K1=13.63  B2=25.03  1984JHa (22062) 147
                                        B3=35.48
********************************************************************************
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
--------------------------------------------------------------------------------
Bi+++      EMF KNO3   25°C 0.10M C        B2=11.20       1984CAa (24409) 148
                                        *K(BiL2)=-4.20
                                        *K(BiH-1L2)=-5.50
Method: Bi(Hg) electrode.
********************************************************************************
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
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C 0.50M U                        1982NAb (26756) 149
                                        K(Bi+HL)=12.28
                                        K(BiHL+HL)=8.48
********************************************************************************
```

C3H7NS2 HL CAS 128-04-1 (2125)
Dimethyldithiocarbamic acid; (CH3)2N.CSSH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ EMF non-aq 25°C 100% U 1987USa (27274) 150
B3=27.6
Medium: DMF, 0.1 M LiClO4
****
C3H8N2S L Ethyl-thiourea CAS 625-53-6 (1079)
N-Ethylthiourea; C2H5.NH.CS.NH2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp NaClO4 25°C 1.00M U K1=1.46 1979FFa (27631) 151
****
C3H8O3S3 H3L Unithiol CAS 74-61-3 (1271)
2,3-Dimercaptopropanesulfonic acid; HS.CH2.CH(SH).CH2.SO3H

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ dis oth/un ? ? U 1970PRb (27783) 152
K(BiOH+L)=19.7
****
C4H4O4 H2L Fumaric acid CAS 110-17-8 (289)
trans-Butenedioic acid; HOOC.CH:CH.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ oth NaClO4 25°C 0.20M U I K1=6.90 1987RHa (29180) 153
Using electromigration with a radioactive Bi tracer.
****
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
---
Bi+++ oth NaClO4 25°C 0.20M U I K1=8.76 1987RHa (29950) 154
Using electromigration with a radioactive Bi tracer.

Bi+++ EMF KNO3 25°C 0.10M C B2=11.60 1984CAa (29951) 155
*K(BiL2)=-4.5
*K(BiH-1L2)=-5.00
K(BiL2+H)=3.70
K(BiHL2+H)=2.50
Method: Bi(Hg) electrode.
****
C4H6O4S2 H4L CAS 304-55-2 (3002)
meso-2,3-Dimercaptobutanedioic acid (meso-dithiotartaric acid)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	gl	KNO3	25°C	0.10M	C		B2=43.87 B(BiHL2)=53.5 B(BiH2L2)=58.5 B(BiH3L2)=62.0 B(BiH4L2)=64.8 B(BiH5L2)=67.0		1991HCa (30429)	156

****

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
Bi+++	ISE	oth/un	25°C	?	U		K1=9.90		1986SRa (30597)	157
Bi+++	vlt	oth/un	25°C	3.00M	U		K(Bi+5HL)=16.53		1970CVb (30598)	158

Medium: Na2SO4

****

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
Bi+++	sp	NaClO4	25°C	0.50M	U		K1=7.69	B2=12.73 B3=16.19	1981NPa (30855)	159

****

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
Bi+++	EMF	KNO3	25°C	0.10M	C		B2=11.70 K(BiL2+H)=3.00 *K(BiL2)=-3.70 *K(BiH-1L2)=-4.50		1984CAa (31211)	160

Method: Bi(Hg) electrode.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	vlt	oth/un	25°C	3.00M	U		K(Bi+HL)=7.56		1970CVb (31212)	161

Medium: Na2SO4

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	dis	NaClO4	20°C	0.10M	U		B2=11.3		1963STc (31213)	162

****

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

```
Bi+++      gl  NaClO4 25°C 0.10M U        K1=10.47  B2=19.12  1972SSe (31827) 163
                                         K3=3.67
**************************************************************************
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
--------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C 0.50M U        K1=12.94       1976KIa (32204) 164
**************************************************************************
C4H8N2O4              H2L    HDA              CAS 19247-05-3  (1025)
Hydrazine-N,N'-diethanoic acid; HOOC.CH2.NH.NH.CH2.COOH
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      sp  NaClO4 20°C 0.10M U        K1=12.50       1987IKa (33081) 165
**************************************************************************
C4H10N2S               L                  CAS 2489-77-2  (2568)
N,N,N'-Trimethylthiocarbamide; (CH3)2N.CS.NH.CH3
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C 1.00M U        K1=1.05        1979FFa (34632) 166
**************************************************************************
C4H13N3                L    Dien             CAS 111-40-0  (584)
1,4,7-Triazaheptane, 2,2'Iminobis(ethylamine), diethylenetriamine;
NH2.(CH2)2.NH.(CH2)2.NH2
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      vlt oth/un 25°C 0.50M C        K1=17.4        1995HCb (35767) 167
                                         K(BiL+H)=3.9
                                         K(BiL+OH)=8.1
**************************************************************************
C5H6                  HL    Cyclopentadiene  CAS 542-92-7  (4288)
Cyclopentadiene; cyclo(-CH:CH.CH2.CH:CH-)
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      sp  oth/un 25°C  dil  U        B2=10.5        1972BSf (37073) 168
**************************************************************************
C5H7NO4S2             H3L                CAS 36061-59-3  (1953)
Bis(carboxymethyl)dithiocarbamic acid; (HOOC.CH2)2.N.CSSH
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      EMF KNO3   22°C 1.00M U        K1=10.94  B2=21.36  1970TPb (37556) 169
                                         B3=31.05
**************************************************************************
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
Bi+++	gl	NaClO4	25°C	0.10M	U		K1=10.47 B2=18.75 K3=3.50	1972SSe (39072)	170

****

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
Bi+++	dis	oth/un	25°C	0.25M	U		B3=28.3	1982SAa (40156)	171

****

C5H11NS2 HL CAS 147-84-2 (2126)
Diethyldithiocarbamic acid; (CH3.CH2)2N.CSSH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	EMF	non-aq	25°C	100%	U		B3=27.9	1987USa (41347)	172

Medium: DMF, 0.1 M LiClO4

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	ISE	non-aq	25°C	100%	U		K1=11.2 B2=21.6 B3=29.6	1984LSb (41348)	173

Medium: DMSO, 0.1 M NaClO4; Ag-electrode

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	non-aq	?	100%	U	M	K(BiL3+2H2A=Bi(HA)3+3HL)=5.72	1968SRg (41349)	174

Medium: CCl4. H2A=dithizone.

****

C5H12N2S L CAS 1576-32-1 (1518)
N-Butylthiourea; C4H9.NH.CS.NH2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	NaClO4	25°C	1.00M	U		K1=1.55	1979FFa (41631)	175

****

C5H12O3S4 H3L CAS 19872-38-9 (4331)
2,3-Dimercaptopropylthioethanesulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	dis	oth/un	?	?	U		K(BiOH+L)=19.3	1971EPd (41653)	176

****

C5H12O4S3 H3L CAS 19872-36-7 (4332)
2,3-Dimercaptopropanoxyethanesulfonic acid; HS.CH2.CH(SH).CH2.O.CH2.CH2.HSO3

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      dis oth/un   ?     ?  U                        1971EPd (41667) 177
                                        K(BiOH+L)=19.5
*************************************************************************
C5H12O5S4            H3L                    CAS 35617-14-2  (4333)
2,3-Dimercaptopropanesulfonethanesulfonic acid; HS.CH2.CH(SH).CH2.SO2.CH2CH2.HSO3
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      dis oth/un   ?     ?  U                        1971EPd (41698) 178
                                        K(BiOH+L)=19.7
*************************************************************************
C6H5ClO3               HL    Chlorokojic ac   CAS 7559-81-1  (8317)
2-Chloromethyl-5-hydroxy-4H-pyran-4-one;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      vlt KNO3   30°C 0.50M C        K1=10.38  B2=17.99  1985KNa (42336) 179
                                        B3=24.98
Method: polarography
*************************************************************************
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
-------------------------------------------------------------------------
Bi+++      vlt NaNO3  25°C 0.50M C        K1=7.48   B2=13.94  2004CZa (42503) 180
                                        B3=18.10
                                        B4=20.47
                                        K(Bi+OH+3L)=26.65
Methods: virtual potentiometric data from DC and DP polarography.
*************************************************************************
C6H6                    L    Benzene          CAS 71-43-2  (2143)
Benzene, cyclohexatriene;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      dis non-aq 25°C 100%  U                        1987TUa (43165) 181
                                        K(BiI3+L)=1.42
Medium: CHCl3
*************************************************************************
C6H6O3                 HL    Maltol           CAS 118-71-8  (2442)
3-Hydroxy-2-methyl-4H-pyran-4-one;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      vlt KNO3   30°C 0.50M C        K1=11.90  B2=20.88  1985KNa (44078) 182
                                        B3=29.57
Method: polarography
```

```
**************************************************************************
C6H6O4                 HL    Kojic acid       CAS 501-30-4  (1800)
5-Hydroxy-2-(hydroxymethyl)-4H-pyran-4-one;
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      vlt KNO3   30°C 0.50M C        K1=10.78  B2=19.34  1985KNa (44199) 183
                                         B3=26.85
Method: polarography
**************************************************************************
C6H6O8S2              H4L    Tiron            CAS 149-45-1  (104)
4,5-Dihydroxybenzene-1,3-disulfonic acid; (HO)2.C6H2(SO3H)2
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      EMF KNO3   25°C 0.10M C        K1=21.90  B2=36.20  1984CAa (44415) 184
Method: Bi(Hg) electrode.
**************************************************************************
C6H8N2                  L    2-Picolylamine   CAS 29722-36-9  (502)
2-(Aminomethyl)pyridine; C5H4N.CH2NH2
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      vlt oth/un 25°C 0.50M C        K1=9.6         1995HCb (45350) 185
**************************************************************************
C6H8O6                 H2L    Ascorbic acid    CAS 50-81-7  (285)
Ascorbic acid (Vitamin C);
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C 0.50M U        K1=25.3        1971EPc (45630) 186
                                         B(BiH2L)=30.8
                                         B(BiOHL)=22.3
**************************************************************************
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
--------------------------------------------------------------------------
Bi+++      ISE oth/un 25°C    ?  U        K1=13.48       1986SRa (46048) 187
--------------------------------------------------------------------------
Bi+++      EMF KNO3   25°C 0.10M C        K1=11.80       1984CAa (46049) 188
                                         *K(BiL)=-3.60
Method: Bi(Hg) electrode.
--------------------------------------------------------------------------
Bi+++      gl  NaClO4 37°C 0.15M C        K1=10.78  B2=15.83  1977WIa (46050) 189
**************************************************************************
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
--------------------------------------------------------------------------
Bi+++      vlt NaClO4 25°C 0.60M U        K1=17.55       1987KTa (46718) 190
--------------------------------------------------------------------------
Bi+++      vlt NaCl   25°C 4.00M U   H                   1984GSa (46719) 191
                                       K1eff=11.93 (?)
--------------------------------------------------------------------------
Bi+++      vlt NaClO4 25°C 0.10M C        K1=18.2        1976ENa (46720) 192
Method: polarography. Medium: 0.1 M HClO4.
--------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C 1.00M U      T K1=17.54  B2=26.55  1970KVb (46721) 193
--------------------------------------------------------------------------
Bi+++      gl  KNO3   25°C 0.10M U    M                   1964PCa (46722) 194
                                       K(BiL+H2A=BiLHA+H)=-1.80
                                       K(BiLA+H)=3.84
H2A=tiron
**************************************************************************
C6H11NO5              H2L    HIMDA            CAS 93-62-9  (192)
N-(2-Hydroxyethyl)iminodiethanoic acid; HO.CH2.CH2.N(CH2.COOH)2
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      sp  NaClO4 20°C 0.10M U        K1=14.82       1978KIb (48695) 195
**************************************************************************
C6H12O7                HL    Gluconic acid    CAS 526-95-4  (904)
D-Gluconic acid, 2,3,4,5,6-Pentahydroxyhexanoic acid; HO.CH2(CHOH)4.COOH
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
Bi+++      gl  NaNO3  25°C 0.10M C T                      1999FSa (49701) 196
                                       B(BiH-2L)=4.1
                                       B(BiH-4L)=-15.95
                                       K(BiH-2L+H)=3.48
At 20 C: B(BiH-2L)=4.2, B(BiH-4L)=-15.8, K(BiH-2L+H)=3.41.
**************************************************************************
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
--------------------------------------------------------------------------
Bi+++      gl  KNO3   15°C  1.0M U T                    1989SSg (50817) 197
                                       K(Bi+HL)=5.15
                                       K(BiHL+HL)=2.97
Also data for 30 C.
**************************************************************************
C6H15NO3                      Triethanolamine  CAS 102-71-6  (447)
Tris-(2-hydroxyethyl)amine;                                          L
--------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------
```

Bi+++ vlt oth/un 25°C 0.50M U K1=9.2 1993HCa (51284) 198
K(BiL+OH)=10.3
Medium: 0.5 M HNO3.
****
C6H18N4 L Trien-tetramine CAS 112-24-3 (11)
1,4,7,10-Tetraazadecane; H2N.CH2.CH2.NH.CH2.CH2.NH.CH2.CH2.NH2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ vlt oth/un 25°C 0.50M U K1=21.9 1993HCa (52091) 199
B(BiHL)=25.0
K(BiL+OH)=8.0
Medium: 0.5 M HNO3.
****
C7H6N2S HL CAS 583-39-1 (2043)
2-Mercaptobenzimidazole;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp alc/w 20°C 0.00 U I 1977JCa (53527) 200
K(Bi(HL)3)=3.54
3.45 M EtOH. In 2.47 M DMF, K=3.18
****
C7H8 L CAS 108-88-3 (2144)
Toluene; C6H5.CH3

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ dis non-aq 25°C 100% U 1987TUa (55783) 201
K(BiI3+L)=1.62
Medium: CHCl3
****
C7H8N2S HL Phenylthiourea CAS 103-85-5 (625)
1-Phenyl-2-thiourea; C6H5.NH.CS.NH2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp alc/w 25°C 58% U T H K1=.045 B2=2.15 1983LXa (55944) 202
B3=5.15
B4=7.63
B5=10.16
Medium: 58%(v/v) EtOH/H2O, 1 M HClO4
****
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
---
Bi+++ dis NaClO4 25°C 1.0M U K1=7.75 B2=15.73 1969BRa (58606) 203
B3=23.22

****

C8H6N2S3 HL Bismuthol II CAS 17654-88-5 (8359)
3-Phenyl-1,3,4-thiadiazol-2-thione;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	dis	NaClO4	20°C	0.4M	U		K1=12.54 B2=24.64 B3=36.42	1985SSf (58808)	204

****

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
Bi+++	EMF	KNO3	25°C	0.10M	C		B2=12.50 *K(BiL2)=-4.60 *K(BiH-1L2)=-5.10	1984CAa (58952)	205

Method: Bi(Hg) electrode.

****

C8H8O4 L (601)
4,5-Dimethoxy-1,2-benzoquinone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	nmr	non-aq	34°C	100%	U	M	K(BiCl3+L)=1.99	1981KKc (60111)	206

Medium: nitromethane

****

C8H10N2S L CAS 2724-69-8 (2570)
N,N'-Methylphenylthiocarbamide; CH3.NH.CS.NH.C6H5

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	NaClO4	25°C	1.00M	U		K1=1.04	1979FFa (60776)	207

****

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
Bi+++	vlt	R4N.X	25°C	0.2M	U		K1=16.1	1999BBc (62663)	208

Medium: 0.2 M Bu4NPF6.

****

C8H20N4 L Cyclen CAS 294-90-6 (10)
1,4,7,10-Tetraazacyclododecane; cyclo(-(NH.CH2.CH2.)4-)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	vlt	oth/un	25°C	0.50M	U		K1=23.45	1998CLb (63285)	209

By differential pulse polarography on pre-equilibrated solutions.

Medium: 0.5 M HNO3.

Bi+++ vlt KNO3 25°C 0.50M C K1=23.45 1997LCa (63286) 210

Medium: HNO3

****

C8H23N5 L Tetren CAS 112-57-2 (715)

1,4,7,10,13-Pentaazatridecane (Tetraethylenepentamine);

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	vlt	oth/un	25°C	0.50M	C		K1=23.9		1995HCb (63467)	211
							K(BiL+OH)=6.9			

****

C9H7NO3S2 H2L CAS 58447-10-2 (4675)

8-Mercaptoquinoline-5-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	sp	oth/un	?	?	U		K1=13.4	B2=23.90	1968ABa (64423)	212
							K3=7.2			

****

C9H7NS HL CAS 76076-35-2 (5695)

2-Mercaptoquinoline;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	EMF	non-aq	25°C	100%	U		K1=11.0	B2=18.20	1986UBa (64612)	213
							K3=5.1			

Medium: dimethylformamide, LiClO4

****

C9H7NS HL Quinolinethiol CAS 491-33-8 (1028)

8-Mercaptoquinoline;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	gl	non-aq	25°C	100%	U		K1=12.7	B2=21.0	1984UBa (64646)	214

Medium: DMF, 0.1 M LiClO4. Similar data to reference UB83a

Bi+++	EMF	non-aq	25°C	100%	U		K1=12.7	B2=21.00	1983UBa (64647)	215

Medium: DMF, 0.1 M LiClO4

****

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

4-(2'-Thiazolylazo)-resorcinol; C3H2NS.N:N.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	sp	NaClO4	20°C	0.10M	U				1966HSb (64697)	216
							K(Bi+HL)=13.11			

K adjusted to give assumed microscopic formation constants

****

C9H12 L Cumene CAS 98-82-8 (1177)
Isopropylbenzene, 2-Phenylpropane; C6H5.CH(CH3)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ dis non-aq 25°C 100% U 1987TUa (66543) 217
K(BiI3+L)=1.78
Medium: CHCl3
****
C9H19NS2 HL CAS 150-11-8 (1154)
N,N-Di(n-butyl)dithiocarbamate; (C4H9)2N.CSSH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ EMF non-aq 25°C 100% U 1987USa (67989) 218
B3=28.6
Medium: DMF, 0.1 M LiClO4
****
C10H8N2 L 2,2'-Bipyridyl CAS 366-18-7 (25)
2,2'-Bipyridine; (C5H4N)2

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ vlt oth/un 25°C 0.50M U K1=4.5 1993HCa (69531) 219
Medium: 0.5 M HNO3.
****
C10H9NO3S2 HL (7206)
6-Methyl-5-sulfo-8-mercaptoquinoline;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp oth/un 20°C 0.10M U K1=14.5 B2=24.20 1985DAb (70175) 220
K3=6.9
****
C10H9NS HL CAS 10222-10-3 (1029)
2-Methyl-8-mercaptoquinoline;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ gl non-aq 25°C 100% U K1=12.4 B2=21.6 1984UBa (70264) 221
Medium: DMF, 0.1 M LiClO4. Similar data to reference UB83a

Bi+++ EMF non-aq 25°C 100% U K1=12.4 B2=21.60 1983UBa (70265) 222
Medium: DMF, 0.1 M LiClO4
****
C10H9NS HL CAS 13982-83-7 (1030)
4-Methyl-8-mercaptoquinoline;

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

```
Bi+++      gl  non-aq 25°C 100%  U        K1=13.3   B2=24.1   1984UBa (70276) 223
Medium: DMF, 0.1 M LiClO4.  Similar data to reference UB83a
--------------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U        K1=13.3   B2=24.10  1983UBa (70277) 224
Medium: DMF, 0.1 M LiClO4
********************************************************************************
C10H9NS                HL                     CAS 15759-04-3  (1031)
6-Methyl-8-mercaptoquinoline;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      gl  non-aq 25°C 100%  U        K1=13.6   B2=25.0   1984UBa (70290) 225
Medium: DMF, 0.1 M LiClO4.  Similar data to reference UB83a
--------------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U        K1=13.6   B2=24.71  1983UBa (70291) 226
Medium: DMF, 0.1 M LiClO4
********************************************************************************
C10H9NS                HL                     CAS 15759-05-4  (1032)
7-Methyl-8-mercaptoquinoline;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      gl  non-aq 25°C 100%  U        K1=13.5   B2=23.3   1984UBa (70302) 227
Medium: DMF, 0.1 M LiClO4.  Similar data to reference UB83a
--------------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U        K1=13.5   B2=23.30  1983UBa (70303) 228
Medium: DMF, 0.1 M LiClO4
********************************************************************************
C10H9NS2               HL                     CAS 32433-56-0  (5691)
5-Thiomethyl-8-mercaptoquinoline;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U        K1=12.3   B2=21.50  1986UBa (70309) 229
                                         K3=6.8
Medium: dimethylformamide, LiClO4
********************************************************************************
C10H9NS2               HL                     CAS 91330-90-0  (5693)
7-Thiomethyl-8-mercaptoquinoline;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U        K1=12.7   B2=19.10  1986UBa (70314) 230
                                         K3=4.5
Medium: dimethylformamide, LiClO4
********************************************************************************
C10H9N3                 L    Dipyridylamine   CAS 1202-34-2  (2428)
(2,2'-Dipyridyl)amine; C5H4N.NH.C5H4N
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
```

```
-------------------------------------------------------------------------------
Bi+++      vlt oth/un 25°C 0.50M C        K1=9.0    B2=16.40  1995HCb (70338) 231
*******************************************************************************
C10H14                  L    Durene           CAS 95-93-2  (2828)
1,2,4,5-Tetramethylbenzene; C6H2.(CH3)4
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Bi+++      dis non-aq 25°C 100%  U                        1987TUa (72037) 232
                                        K(BiI3+L)=2.38
Medium: CHCl3
*******************************************************************************
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
-------------------------------------------------------------------------------
Bi+++      vlt NaClO4 25°C 1.00M U        K1=26.41       1987KTa (73619) 233
-------------------------------------------------------------------------------
Bi+++      gl  NaNO3  25°C 5.00M U    M                  1982EFb (73620) 234
                                        K(BiL+Br)=1.5
                                        K(BiL+SCN)=1.7
                                        K(BiL+ONO)=5.1
                                        K(BiL+thiourea)=3.1
K(BiL+I)=1.7; K(BiL+SO3)=2.7; K(BiL+S2O3)=3.1
-------------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C  1.0M U        K1=25.68       1973KIa (73621) 235
                                        K(BiL+H)=0.90
-------------------------------------------------------------------------------
Bi+++      vlt oth/un   ?  3.60M U        K1=27.93       1969SVd (73622) 236
Medium: 3.6 M HNO3. In 1.78 M HNO3, K1=27.93
-------------------------------------------------------------------------------
Bi+++      EMF NaClO4 20°C  1.0M U      T K1=26.7        1967BAc (73623) 237
                                        K(BiL+H)=1.7
                                        K(BiL+OH)=2.96
-------------------------------------------------------------------------------
Bi+++      vlt KNO3   25°C 0.50M U        K1=28.2        1966BGa (73624) 238
-------------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C  1.0M U                       1965BIb (73625) 239
                                        K(BiO+L+2H)=26.5
-------------------------------------------------------------------------------
Bi+++      ISE NaClO4 20°C 0.10M U        K1=27.4        1964EIa (73626) 240
-------------------------------------------------------------------------------
Bi+++      vlt NaClO4 25°C 0.10M U  I     K1=28.8        1964EIa (73627) 241
K1=30.5(I=1.0)
-------------------------------------------------------------------------------
Bi+++      gl  KNO3   25°C 0.10M U                       1964PCa (73628) 242
                                        K(BiL+H)=1.43
-------------------------------------------------------------------------------
Bi+++      dis NaClO4 20°C 0.10M U                       1963STc (73629) 243
```

B(BiL(OH))=32.45

Medium: KClO4

Bi+++ vlt oth/un 20°C 0.10M U K1=27.9 1961MSa (73630) 244

Bi+++ sp oth/un ? 0.10M U K1=22.8 1960KVa (73631) 245

****

C10H18N2O7 H3L HEDTA CAS 150-39-0 (392)

N-(Hydroxyethyl)diaminoethane-N,N',N'-triethanoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	NaClO4	20°C	1.00M	U		K1=24.11	1976KNa (75339)	246
							K(BiOH+L)=20.27		
Bi+++	sp	NaClO4	20°C	0.50M	U		K1=21.8	1967NKb (75340)	247
Bi+++	sp	NaClO4	25°C	1.0M	U			1966BIb (75341)	248
							K(BiO+L+2H)=22.3		

****

C11H8N6O HL (7009)

1-(5-Tetrazolyl)azo-2-naphthol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	NaClO4	20°C	1.00M	U		K1=14.13	1978SSf (76926)	249

****

C11H8O3 L CAS 18916-57-9 (581)

4-Methoxy-1,2-naphthoquinone;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	non-aq	34°C	100%	U	HM		1981KKb (77138)	250
							K(BiCl3+L)=1.75		

Medium: nitromethane

****

C11H9N3O2 H2L PAR CAS 1141-59-9 (636)

4-(2'-Pyridylazo)-1,3-dihydroxybenzene; C5H4N.N:N.C6H3(OH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	NaClO4	20°C	0.10M	U			1966HSb (77528)	251
							K(Bi+HL)=17.2		
Bi+++	sp	oth/un	?	?	U			1961HSb (77529)	252
							K(Bi+HL)=18.2		

****

C11H11NS HL CAS 54128-50-6 (1033)

2,7-Dimethyl-8-mercaptoquinoline;

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      gl  non-aq 25°C 100%  U        K1=13.7   B2=23.1   1984UBa (77859) 253
Medium: DMF, 0.1 M LiClO4.  Similar data to reference UB83a
-------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U        K1=13.7   B2=23.10  1983UBa (77860) 254
Medium: DMF, 0.1 M LiClO4
*************************************************************************
C11H11NS2              HL                     CAS 54487-80-8  (5694)
2-Methyl-(5-thiomethyl)-8-mercaptoquinoline;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      EMF non-aq 25°C 100%  U        K1=12.4   B2=23.00  1986UBa (77866) 255
                                         K3=6.5
Medium: dimethylformamide, LiClO4
*************************************************************************
C11H13N3OS             L                      CAS 7420-45-3  (4869)
1-Benzoyl-4-allylthiosemicarbazide;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      sp  non-aq 25°C 100%  U                        1971CFa (78713) 256
                                         B3=3.55
Medium: acetone.
*************************************************************************
C11H26N4               L                      CAS 15439-16-4  (7)
1,4,8,12-Tetraazacyclopentadecane; cyclo(-(NH.CH2.CH2.(N.(CH2)3.)3-)
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      vlt oth/un 25°C 0.50M U        K1=23.5         1993HCa (79991) 257
                                         K(BiL+H)=3.5
                                         K(BiL+OH)=8.5
Medium: 0.5 M HNO3.
*************************************************************************
C12H13NS               HL                     CAS 54421-21-5  (1034)
2-(2-Propyl)-8-mercaptoquinoline;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      gl  non-aq 25°C 100%  U        K1=7.2    B2=14.2   1984UBa (81255) 258
Medium: DMF, 0.1 M LiClO4
*************************************************************************
C12H27N3O3             L    THETAC             (7199)
1,4,7-Tris(hydroxyethyl)-1,4,7-triazacyclononane
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      vlt NaNO3  25°C  0.5M C        K1=16.36        1996CHa (84084) 259
```

Method: Differential Pulse Polarography

Bi+++ vlt NaNO3 25°C 0.50M U K1=16.34 1996LHb (84085) 260

****

C13H11N3O4S2 HL Tenoxicam CAS 59804-37-4 (8393)
4-Hydroxy-2-methyl-N-2'-pyridinyl-2H-thien[2,2-e]-1,2-thiazine-3-carboxamide-1,1-dioxide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	gl	mixed	25°C	50%	C		K3=5.6	2002MWa (85287)	261

Medium: 50% v/v CH3CN/H2O, 0.05 M NaNO3.

****

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
Bi+++	sp	NaClO4	25°C	0.10M	U		B3=32.11	1973BSe (85452)	262

****

C14H9N7O6 H3L (5044)
1,5-Bis(2-hydroxy-4-nitrophenyl)-3-cyanoformazan;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	NaClO4	25°C	0.10M	U		B(BiH4L2)=53.3	1971BSf (86859)	263

****

C14H11N5O2 H3L (5046)
1,5-Bis(2-hydroxyphenyl)-3-cyanoformazan; HO.C6H4.N:N.C(CN):N.NH.C6H4.OH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	NaClO4	25°C	0.10M	U		B(BiH4L2)=62.8	1971BSf (87008)	264

****

C14H12N3OBrS L CAS 39643-68-0 (5097)
1-Benzoyl-4-bromophenylthiosemicarbazide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	non-aq	25°C	100%	U		B3=6.36	1971CFa (87302)	265

Medium: acetone

****

C14H13N3OS L CAS 14938-70-6 (5090)
1-Benzoyl-4-phenylthiosemicarbazide;

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      sp  non-aq 25°C 100%  U                         1971CFa (87588) 266
                                      B3=7.13
Medium: acetone
*************************************************************************
C14H13N5OS             HL                       (5394)
1-(2-Pyridylmethylideneamino)-3-(salicylideneamino)thiourea;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      sp  mixed  25°C  40%  U                         1985RGa (87613) 267
                                      K1eff=6.54
                                      B2eff=14.60
                                      B3eff=21.70
Medium: 40% DMF, pH 4.5
*************************************************************************
C14H14N4OBr2           HL                     CAS 35601-32-2  (5092)
5-(3,5-Dibromo-2-pyridylazo)-2-ethylamino-4-hydroxy-1-methylbenzene;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      sp  oth/un   ?     ?  U        K1=5.46          1966GUa (87685) 268
*************************************************************************
C14H15N4OBr            HL                     CAS 14337-50-9  (5095)
5-(5-Bromo-2-pyridylazo)-2-ethylamino-4-hydroxy-1-methylbenzene;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      sp  oth/un   ?     ?  U                         1966GUa (87764) 269
                                      K1eff=6.04
*************************************************************************
C14H18N4                L    DPEN           CAS 4608-34-3  (1850)
N,N'-Bis-(2-pyridylmethyl)-1,2-diaminoethane; (C5H4N.CH2.NH.CH2)2
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      vlt NaNO3  25°C 0.10M C        K1=15.90         1995CCb (88112) 270
                                      B(BiHL)=17.82
Methods: differential pulse polarography and differential pulse voltammetry
*************************************************************************
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
-------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C  1.0M U        K1=27.20         1973KIa (88593) 271
                                      K(Bi+HL)=19.11
                                      K(BiL+H)=1.20
-------------------------------------------------------------------------
```

```
Bi+++      EMF NaClO4 20°C  1.0M U                      1967BAc (88594) 272
                                        K(BiL+H)=1.25
                                        K(BiL+OH)=3.0
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4 20°C 0.50M U       K1=23.8        1967NKb (88595) 273
                                        K(Bi+HL)=15.7
--------------------------------------------------------------------------------
Bi+++      vlt KNO3   25°C 0.50M U       K1=31.2        1966BGa (88596) 274
--------------------------------------------------------------------------------
Bi+++      dis NaClO4 20°C 0.10M U                      1963STc (88597) 275
                                        B(BiL(OH))=34.6
Medium: KClO4
--------------------------------------------------------------------------------
Bi+++      vlt oth/un 20°C 0.10M U       K1=24.1        1961SEa (88598) 276
********************************************************************************
C14H23N3O10           H5L    DTPA             CAS 67-43-6  (238)
Diethylenetriamine-pentaethanoic acid; HOOC.CH2.N(CH2.CH2.N(CH2.COOH)2)2
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      vlt NaClO4 25°C 0.60M U       K1=29.29       1987KTa (89164) 277
--------------------------------------------------------------------------------
Bi+++      EMF NaClO4 20°C  1.0M U       K1=35.6        1967BAc (89165) 278
                                        K(BiL+H)=2.6
                                        K(BiL+OH)=2.7
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4 20°C 0.50M U       K1=29.7        1967NKb (89166) 279
                                        K(Bi+HL)=22.5
--------------------------------------------------------------------------------
Bi+++      gl  KNO3   25°C 0.10M U                      1964PCa (89167) 280
                                        K(BiH2L=BiHL+H)=-1.80
                                        K(BiHL=BiL+H)=-2.40
********************************************************************************
C14H24N2O8            H4L    HMDTA            CAS 1633-00-7  (920)
1,6-Diaminohexane-N,N,N',N'-tetraethanoic acid; ((HOOC.CH2)2N.CH2.CH2.CH2)2
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      sp  oth/un   ?     ?  U                      1971KAa (89566) 281
                                        K(Bi+H3L)=3.74
                                        K(Bi+H2L)=5.58
********************************************************************************
C14H24N2O10                   EGTA             CAS 67-42-5  (349)
Ethyleneglycol-O,O'-bis(2-aminoethyl ether)-N,N,N',N'-tetraethanoic acid; H4L
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Bi+++      sp  NaClO4 20°C 0.50M U       K1=23.8        1967NKb (89843) 282
                                        K(Bi+HL)=16.0
********************************************************************************
```

C14H32N2O4 L CAS 102-60-3 (2678)
Tetra(2-hydroxypropyl)-N,N,N',N'-diaminoethane;(-CH2.N(CH2.CH(OH).CH3)2)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	vlt	oth/un	25°C	0.50M	C		K1=12.0		1995HCb (90742)	283
							K(BiL+OH)=12.0			

****

C15H10O6S H2L CAS 17356-57-5 (4058)
Flavonol-2'-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	sp	NaClO4	25°C	0.50M	U		K1=12.3	B2=20.4	1968YNa (90997)	284
							K(Bi+HL=BiL+H)=3.81			
							K(BiL+HL=BiL2+H)=3.41			

****

C15H11NS HL CAS 15759-12-3 (5689)
2-Phenyl-8-mercaptoquinoline;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	EMF	non-aq	25°C	100%	U		K1=11.4	B2=19.10	1986UBa (91089)	285
							K3=6.2			

Medium: dimethylformamide, LiClO4

****

C15H11NS HL CAS 75955-26-9 (5690)
4-Phenyl-8-mercaptoquinoline;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	EMF	non-aq	25°C	100%	U		K1=12.8	B2=20.70	1986UBa (91094)	286
							B3=6.4			

Medium: dimethylformamide, LiClO4

****

C15H11NS2 HL CAS 100549-76-6 (5692)
5-Thiophenyl-8-mercaptoquinoline;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	EMF	non-aq	25°C	100%	U		K1=13.2	B2=21.30	1986UBa (91100)	287
							K3=5.8			

Medium: dimethylformamide, LiClO4

****

C15H15N3OS L (5134)
1-Benzoyl-4-methylphenylthiosemicarbazide; C6H5.CO.NH.NH.CS.NH.C6H4.CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Bi+++	sp	non-aq	25°C	100%	U				1971CFa (91881)	288

B3=8.60

Medium: acetone

****

C15H15N3O2S L (5135)

1-Benzoyl-4-methoxyphenylthiosemicarbazide; C6H5.CO.NH.NH.CS.NH.C6H4.OCH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	non-aq	25°C	100%	U			1971CFa (91889)	289

B3=8.64

Medium: acetone

****

C15H16N4OBr2 HL CAS 14337-54-3 (993)

2-(3,5-Dibromo-2-pyridylazo)-5-diethylaminophenol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sol	oth/un	?	?	U			1966GSa (91940)	290

K(Bi+HL=BiL+H)=5.19

****

C15H17N4OBr HL CAS 14357-53-2 (712)

2-(5-Bromo-2-pyridylazo)-5-diethylaminophenol; BrC5H3N.N:N.C6H3(OH)N(CH3)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sol	oth/un	?	?	U			1966GSa (91978)	291

K(Bi+HL=BiL+H)=5.66

****

C15H17N4OI HL CAS 14493-15-3 (5139)

5-Diethylamino-2-(5-iodo-2-pyridylazo)phenol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sol	oth/un	?	?	U			1966GSa (91986)	292

K(Bi+HL=BiL+H)=5.87

****

C15H18N4O HL CAS 14337-52-1 (5124)

5-Diethylamino-2-(2-pyridylazo)phenol;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sol	oth/un	?	?	U			1966GSa (92095)	293

K(?)=5.82

****

C16H17N3O2S L CAS 40027-93-8 (5189)

1-Benzoyl-4-ethoxyphenylthiosemicarbazide; C6H5.CO.NH.NH.CS.NH.C6H4.O.CH2.CH3

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	non-aq	25°C	100%	U			1971CFa (93746)	294

B3=7.79

Medium: acetone

****

C18H15N3OS L (5254)

1-Benzoyl-4-(1-naphthyl)thiosemicarbazide;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	non-aq	25°C	100%	U			1971CFa (97000)	295
							B3=6.28		

Medium: acetone

****

C18H15O3PS HL CAS 16704-71-5 (3365)

3-Diphenylphosphino-benzene sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	ISE	KNO3	25°C	1.0M	U		K1=3.7	1962WBa (97106)	296
							B6=21.8		

Medium: HNO3

****

C18H30N4O12 H6L TTHA CAS 869-52-3 (694)

Triethylenetetraaminehexaethanoic acid;((HOOC.CH2)2N.CH2.CH2.N(CH2.COOH).CH2)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	NaClO4	20°C	0.10M	U			1979NKa (98013)	297
							K(Bi+H2L)=22.59		
							K(Bi+BiO+L)=45.90		
							K(Bi+BiO+HL)=37.18		
Bi+++	sp	NaClO4	25°C	0.50M	U			1979NPa (98014)	298
							K(BiL+H)=3.60		
							K(BiHL+2H)=4.68		
							K(BiH3L+H)=1.16		
							K(BiH4L+5H=Bi+H9L)=5.73		
Bi+++	gl	KNO3	25°C	0.10M	U		K1=17.7	1969YMa (98015)	299
							K(BiL+H)=4.16		
							K(BiHL+H)=2.84		
							K(BiH2L+H)=2.11		

****

C19H12O8S H4L Pyrogallol red CAS 85531-30-2 (638)

Pyrogallolsulfonephthalein;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Bi+++	sp	KNO3	25°C	?	U	M	K1=4.66	1982XXa (98998)	300
							K(Bi+L+2CTAB)=15.15		

****

C20H44N4O4 L CAS 102202-74-4 (6041)
1,4,7,10-Tetra-(2-hydroxypropyl)-1,4,7,10-tetraazacyclododecane;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ vlt oth/un 25°C 0.50M U K1=21.25 1998CLb (100925) 301
By differential pulse polarography on pre-equilibrated solutions.
Medium: 0.5 M HNO3.
****
C21H22N4O HL CAS 56932-30-0 (5308)
1-Hydroxy-2-(2-N-methylanabasinyl-alpha-azo)naphthalene;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp oth/un ? ? U 1966APa (101200) 302
B3=15.70
****
C23H24N4S2 L CAS 53799-78-3 (2613)
4,4'-Dithioantipyrylmethane;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp oth/un 25°C 0.10M U B2=10.18 1979LLa (102686) 303
B3=16.34
Medium: Na2SO4
****
C24H23N9O2 HL (5330)
1,5-Bis(4-antipyrinyl)-3-cyanoformazan;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ sp NaClO4 25°C 0.10M U 1971BSf (102933) 304
B(BiH2L2)=56.6
****
C24H31N3O8 H3L CAS 35369-55-2 (6972)
N,N"-Bis(2-hydroxybenzyl)-2,5,8-triazanonane-N,N',N"-triethanoic acid;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Bi+++ gl NaNO3 25°C 0.50M C K1=27.76 1994HCb (103055) 305
K(BiL+H)=8.11
K(BiHL+H)=7.19
K(BiH2L+H)=4.88
K(BiH3L+H)=3.77
By spectrophotometry in 0.5 M NaCl: K(BiL+H)=7.95, K(BiHL+H)=7.0, K(BiH2L+H)
=4.60, K(BiL+OH)=3.8.
****
C26H28N6 L CAS 16858-02-9 (933)
N,N,N',N'-Tetrakis-(2-pyridylmethyl)-diaminoethane;

```
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      vlt NaNO3  25°C 0.10M U        K1=19.78       1999CUa (103999) 306
-------------------------------------------------------------------------
Bi+++      vlt NaNO3  25°C 0.10M C        K1=19.75       1995CCb (104000) 307
Method: Differential pulse polarography
*************************************************************************
C31H32N2O13S          H6L    Xylenol orange   CAS 63721-85-5  (432)
5,5'-Bis-N,N-bis(carboxymethyl)aminomethyl-4'-hydroxy-3,3'-dimethylfuchsone-2"-sulf
onic acid;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      sp  NaClO4   ?   1.0M U                        1972KNa (105456) 308
                                       K(Bi+H3L)=9.80
                                       K(Bi+2H3L)=15.53
-------------------------------------------------------------------------
Bi+++      sp  oth/un   ?     ?  U                        1968KBb (105457) 309
                                       K(Bi+H2L)=5.13
-------------------------------------------------------------------------
Bi+++      sp  NaNO3  20?°C 0.20M U                       1963BGa (105458) 310
                                       B(Bi2L2)=75.6
-------------------------------------------------------------------------
Bi+++      sp  KNO3   18°C 0.1?M U                        1960OIa (105459) 311
                                       K(?)=7.0
*************************************************************************
C37H44N2O13S          H6L    MeThymol Blue      (428)
3,3'-Bis(N,N-di(carboxymethyl)aminomethyl)thymolsulfonephthalein;
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      sp  NaClO4 25°C 0.50M U                        1970KNa (106588) 312
                                       K(Bi+H3L)=12.49
                                       B(BiH3L)=44.65
                                       K(BiH3L+H5L)=5.60
*************************************************************************
Polymer                                          (6896)
Polymaleic acid-methacrylic acid copolymer; (-C4H2O3.CH2.C(CH3)COOH-)n
-------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------
Bi+++      dis NaCl   25°C 0.10M U                        1993KHa (108347) 313
                                       K1eff=9.9
Method: dialysis; pH=8  [Bi]=0.00005 M
```

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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