

SC-Database

Software version = 5.81 Data version = 4.62

Experiment list contains 777 experiments for

(no ligands specified)

3 metals : Tl+, Tl++, Tl+++

(no references specified)

(no experimental details specified)

e- HL Electron (442)
Electron;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	EMF	oth/un	25°C	0.0	C	T		1993MCb (969)	1	
In KI. Tl(Hg)/Tl(I) electrode. $K(TlI(s)+e=Tl(Hg)+I^-)=-12.297(-0.72872\text{ mV})$. At 40 C, $K=12.364(-0.73266)$. Tl(Hg) has 0.001-0.002 mol fraction Tl.										
Tl+	EMF	KNO3	25°C	0.0	M	TIH		1981GLc (970)	2	
$K=-10.988(-650.10\text{mV})$ $K'=-10.432(-617.18\text{ mV})$ Method: Tl(Hg) and Tl/TlBr electrodes in 0.005-0.10 M KNO3. Data for 10-70 C. $K: TlBr+e=Tl(s)+Br^-$; $K': TlBr+Hg+e=Tl(Hg)+Br^-$.										
Tl+	EMF	non-aq	30°C	100%	U			1974BNb (971)	3	
$K=-9.97(-599.4\text{mV})$ M units Medium: N.N-dimethylformamide; $K: TlCl(s)+e=Tl(s)+Cl^-$										
Tl+	EMF	non-aq	23°C	100%	U			1974CRa (972)	4	
$K=-16.56(-973\text{mV})$ Medium: n-hexanol; $K: TlCl(s)+e=Tl(s)+Cl^-$										
Tl+	EMF	non-aq	23°C	100%	U			1974SRg (973)	5	
$K=-15.06(-886.8\text{mV})$ Medium: N.N-dimethylformamide; $K: TlCl(s)+e=Tl(s)+Cl^-$										
Tl+	EMF	NaClO4	25°C	3.0M	U	I		1967KRb (974)	6	
$K(Tl+e=Tl(s))=-6.649, -393.3\text{mV}$ $K'=-9.72, -575\text{ mV}$ $K': TlCl(s)+e=Tl/Hg+Cl$. I=2.0: $K=-6.336, -374.8\text{ mV}$, $K'=-9.43, -558\text{ mV}$; I=1.0: $K=-6.038, -357.2\text{ mV}$, $K'=-9.23, -546\text{ mV}$										
Tl+	EMF	NaClO4	25°C	3.00M	U			1966GKb (975)	7	
$K(Tl+ +e=Tl/Hg)=-6.606, -390\text{mV}$										
Tl+	EMF	none	0°C	0.0	U	T		1965MLa (976)	8	
$K=-9.352, -506.8\text{ mV}$ $K: TlCl(s) + e = Tl/Hg + Cl^-$. $K=-8.796(25\text{ C}), -8.372(50\text{ C}), -7.992(80\text{ C})$										
Tl+	EMF	NaClO4	25°C	3.0M	U			1959SCb (977)	9	

K=-6.61(-391 mV)

K: Tl+e=Tl(in Hg,saturated)

 Tl+ EMF non-aq 25°C 100% U T 1954PSa (978) 10
 K=-5.81(-344mV) M units
 Medium: formamide; K: Tl+ + e=Tl(s). K=-5.85(-338mV,18 C) M units

Tl+ EMF none 25°C 0.0 U T 1934CMA (979) 11
 K(Tl+e=Tl(s))=-5.68(-336.0 mV)
 K(TlCl(s)+e=Tl(s))=-9.42(-557)
 K(TlBr(s)+e=Tl(s))=-11.11
 K(TlI(s)+e=Tl(s))=-12.95(-766)
 K(Tl+e=Tl(s))=-5.595(0 C, -303.2 mV), -5.639(12.5 C, -319.6 mV), -5.718(37.5 C,
 -352.4 mV), -5.819(50 C, -373.1 mV)

 BF4- HL (2497)
 Tetrafluoroborate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	vlt	non-aq	22°C	100%	U		K1=2.9	1988BEb (1204)	12

Medium: CH2Cl2

Tl+	con	non-aq	25°C	100%	U		K1=1.15	1970YKb (1205)	13
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Medium: MeCN

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	nmr	NaClO4	25°C	4.0M	U	I	K1=9.6 B2=16.9 B3=22.2 B4=26.5	1981GHa (2333)	14

Medium: 1M NaClO4/3M HClO4, [Tl]=1.0 M

Tl+	EMF	KNO3	25°C	0.0	M	H	Kso=-5.459	1981GLc (2334)	15
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Method: measurements with Tl(Hg) and Tl/TlBr elecrodcs in 0.005-0.10 M
 KNO3. Data for 10-70 C.

Tl+	EMF	non-aq	25°C	100%	C	TIH		1981STb (2335)	16
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Method: Tl/Hg electrode. Medium: DMF. DH(K1)=-29.38 kJ mol-1, DS=15.95
 J K-1 mol-1, Kso(TlCl)=-7.94. In PC: DH(K1)=-70.40, DS=-8.55, Kso=-10.84.

Tl+	EMF	none	25°C	0.0	C	T H		1981STb (2336)	17
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Method: Tl/Hg electrode. DH(K1)=-34.57 kJ mol-1, DS=-3.13 J K-1 mol-1.

Tl+	sol	NaClO4	10°C	0.50M	U	TIH	K1=0.92 Kso=-5.60	1974FRd (2337)	18
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Medium: LiClO₄. K₁=0.89(I=1); K₁=0.86, B₂=0.38(I=2); K₁=0.88, B₂=0.30, B₃=-0.10 (I=3). K_{so}=-5.49(I=1), -5.34(I=3). Also at 10-60 C and I to 4 M LiClO₄

Tl+ sol none 25°C 0.0 U T H K₁=1.08 B₂=0.60 1974FRd (2338) 19
K_{so}=-5.45

K₁=1.2, K_{so}=-5.95(10 C); K₁=0.98, B₂=0.52, K_{so}=-5.03(40 C); K₁=0.80, B₂=0.40, K_{so}=-4.62(60 C)

Tl+ sol non-aq 25°C 100% U I 1974MUa (2339) 20
K_{so}=-8.08

Medium: DMF. In DMSO: K_{so}=-5.32. In propene carbonate: K_{so}=-11.11

Tl+ sol non-aq 25°C 100% U B₂=6.4 1973BNa (2340) 21
K_{so}=-8.1

Medium: N,N-dimethylacetamide

Tl+ vlt NaClO₄ 25°C 1.0M U K₁=0.93 B₂=1.1 1972BHb (2341) 22

Tl+ sp none 25°C 0.0 U K₁=0.79 1972CPa (2342) 23

Tl+ sol none 25°C 0.0 U T 1972KEa (2343) 24
K_{so}=-5.356

K_{so}=-5.882(10.1 C), -5.705(15 C), -5.528(20 C), -5.189(30 C), -5.001(35 C), -4.852(40 C), -4.730(45 C)

Tl+ sol none 25°C 0.0 U T 1972KEa (2344) 25
K_{so}=-5.596

In D₂O; K_{so}=-6.179(10 C), -5.965(15 C), -5.802(20 C), -5.447(30 C), -5.292(35 C), -5.167(40 C), -4.999(45 C)

Tl+ EMF non-aq 25°C 100% U 1970SAc (2345) 26
K_{so}=-12.66

Medium: propene carbonate

Tl+ sol none 25°C 0.0 U K₁=0.93 1969CPa (2346) 27

Tl+ sol non-aq 24°C 100% U K₁=2.5 B₂=3.0 1969Lub (2347) 28
B₃=2.9
B₁₂=2.6
K_{so}=-5.3

Medium: DMSO, 1 M LiClO₄. TlHg electrode also used

Tl+ sol non-aq 275°C 100% U T K₁=0.70 1965SPa (2348) 29

Medium: (Na,K)NO₃. K₁=0.48(300 C) m units

Tl+ sol none 20°C 0.0 U T H K₁=0.98 B₂=1.10 1964PCa (2349) 30
K_{so}(TlBr)=-5.60

At 30 C: K₁=0.87, K₂=-0.01; 40 C: K₁=0.73, K₂=-0.15. At I=0 corr., 25 C: K₁=0.93, K₂=0.06. DH(K₁)=-17.7 kJ mol⁻¹, DS=-41 J K⁻¹ mol⁻¹; DH(K₂)=22.9, DS=76

Tl+ sol none 25°C 0.0 U K1=0.62 B2=1.14 1962SDc (2350) 31
Kso(TlBr)=-5.42
K(TlBr(s)=TlBr)=-4.80
I=0 corr. By solubility in KBr B4/B2=-1.20

Tl+ sol NaClO4 25°C 4.0M U K1=0.34 B2=0.18 1960KMa (2351) 32
K3=-0.23

Tl+ sol oth/un 25°C var U I K1=1.05 B2=0.77 1958KMa (2352) 33
B3=0.24
K(TlBr(s)=TlBr)=-4.34
Kso(TlL)=-5.38
Medium: LiBr. In NaBr K1=0.92,B2=0.80,B3=0.31 and K(TlBr(s)=TlBr)=-4.45. In
KBr K1=0.92,B2=0.92,B3=0.40,K=-4.45; in CsBr K1=1.05,B2=1.00,B3=0.64,K=-4.31

Tl+ sol NaClO4 25°C 4.0M U 1958MIb (2353) 34
Kso=-4.82
In dilute solution: Kso=-5.38

Tl+ sol NaClO4 25°C 4.0M U K1=0.32 B2=0.15 1957NIa (2354) 35
K3=-0.45
K4=-0.75
K(TlBr(s)+2Br=TlBr3)=-5.10
K(TlBr(s)+3Br=TlBr4)=-5.80
Kso(TlL)=-4.81, K(TlL(s)=TlL)=-4.48, K(TlL(s)+L=TlL2)=-4.62
By Tl/Hg electrode Kso=-4.81

Tl+ sol none 25°C 0.0 U T H K1=0.88 1957NNa (2355) 36
K(TlL(s)+TlL)=-1.55
I=0 corr. DH(K1)=-10.3 kJ mol-1, DS=-18 J K-1 mol-1. At 40 C: K1=0.80,
K(TlL(s)=TlL)=-1.19

Tl+ sp NaClO4 ? 2.20M U K1=1.60 1956PVa (2356) 37

Tl+ sol none 25°C 0.0 U T H K1=1.05 1955ANd (2357) 38
Kso(TlBr)=-5.47
I=0 corr. K1=1.26(5 C), 1.00(45 C). Kso=-6.23(5 C), -4.89(45 C). DH(K1)=-10
kJ mol-1, DS=-16; DH(so)=56.4, DS=84.5

Tl+ sol none 25°C 0.0 U H 1953ADa (2358) 39
I=0 corr. DH(K1)=-5.82 kJ mol-1; DS=0.4 J K-1 mol-1

Tl+ ISE none 25°C 0.0 U 1934ITa (2359) 40
Kso(TlBr)=-5.41

Tl+ con none 26°C 0.0 U T 1923BOa (2360) 41
Kso(TlBr)=-5.41
I=0 corr. Kso=-6.02(9.4 C), -5.68(18 C), -4.20(68.5 C)

Tl+ con oth/un 20°C dil U 1903BOb (2361) 42

Kso(TlBr)=-5.60

BrO3- HL Bromate (6017)
Bromate;

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

Tl+ sol oth/un 45°C 0.0 U T K1=0.3 1968KHa (2435) 43
Kso=-3.34
Kso=-3.78(30 C), -3.62(35 C), -3.47(40 C)

Tl+ sol none 40°C 0.0 U Kso(TlL)=-3.41 1923B0a (2436) 44

Tl+ con oth/un 20°C dil U Kso(TlL)=-4.07 1903B0b (2437) 45

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

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

Tl+ sol NaCl04 20°C 3.40M U K1=0.51 B2=0.11 1980FPa (3400) 46

C6N6Fe---- H4L (2191)
Hexacyanoferrate (II); Fe(II)(CN)6----

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

Tl+ ISE oth/un 25°C 1.00M U TIH K1=0.78 1984FIa (3608) 47
Medium: KF

Tl+ ISE NaCl04 25°C 3.0M U H K1=0.82 1967MKc (3609) 48
Method: amalgam electrode. Medium: LiCl04. By solubility: K1=0.5 ?
By calorimetry: DH(K1)=-7.4 kJ mol-1, DS=9.2 J K-1 mol-1

Tl+ sol oth/un 18°C dil U M Kso=-10.17 1958DTb (3610) 49
Ks(Ag3TlL)=-23.55
Ks(Ag2Tl2L)=-17.95

Tl+ sp none 25°C 0.0 U T H K1=3.00 1958PWa (3611) 50
DH(K1)=4.6 kJ mol-1, DS=72.8 J K-1 mol-1(25 C). K1=3.05(35 C), 3.06(50 C)

Tl+ sol none 0°C 0.0 U T H K1=3.19 1953BGb (3612) 51
DH(K1)=3.4 kJ mol-1, DS=72.8 J K-1 mol-1(25 C). K1=3.22(25 C), 3.27(40 C)

C6N6Fe--- H3L Ferricyanide (2491)
Hexacyanoferrate (III); Fe(III)(CN)6---

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	nmr	oth/un	25°C	0.30M	U		K1=1.83	1959GRa (3694)	52

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	sp	NaCl	25°C	0.0	C T H		K1=0.49 B2= 0.00 B4=-1.42	1998BSa (5801)	53

Calculated from data for 0.0012-3.0 M NaCl solution. Data for 25-200 C.
 DH(K1)=-0.90 kJ mol⁻¹, DS(K1)=6.37 J K⁻¹ mol⁻¹; DH(K2)=-6.08, DS(K2)=-29.8

Tl+	sol	KCl	25°C	0.0	C I			1993KFb (5802)	54
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Kso=-3.73. Solubility measured in 0.005-4.0 m LiCl and KCl.

Tl+	sol	NaCl	25°C	0.0	C I			1992KFb (5803)	55
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Kso=-3.73. Solubility measured in 0.005-4.0 m NaCl.

Tl+	sol	NaCl	25°C	0.0	U I		K1=0.60 B2=0.28 B4=-2.72	1992RAb (5804)	56
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I=0 to 6.0 M

Tl+	sol	NaCl	25°C	0.0	C I			1991KFb (5805)	57
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Kso(TlCl)=-3.73

Calculated from data for 0.1-3.2 m NaCl/HCl, using Pitzer equation.

Tl+	vlt	mixed	25°C	56%	U I		K1=-0.66	1990Bmb (5806)	58
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In HF solution. HF=47%: B1=-0.21, B2=-0.92; HF=26, B1=0.15, B2=-0.68
 HF=5%, B1=0.18, B2=-0.68

Tl+	ISE	NaClO4	25°C	1.50M	M I		K1=1.11 B2=0.35	1989CIa (5807)	59
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In 3.0 M NaClO4, K1=0.95, B2=0.32

Tl+	nmr	oth/un	25°C	4.00M	C		K1=0.0 B2=-0.60	1986GHa (5808)	60
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Medium: 4 M KF

Tl+	ISE	oth/un	25°C	0.50M	U I		K1=1.56 B2=1.94	1983EIa (5809)	61
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Medium: Na-acetate

Tl+	ISE	oth/un	25°C	0.50M	U I		K1=0.02 B2=-0.56	1983FIa (5810)	62
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Tl+	nmr	NaClO4	25°C	4.0M	U I		K1=7.18 B2=12.78 B3=16.70 B4=19.68 B5=19.15 B6=19.04	1981GHa (5811)	63
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Medium: 1M NaClO4/3M HClO4. [Tl]=1.0 M. Also data for [Tl]=0.05 M

Tl+ EMF non-aq 25°C 100% C TIH 1981STb (5812) 64
 Method: Tl/Hg electrode. Medium: DMF. DH(K1)=-30.51 kJ mol⁻¹, DS=18.46
 J K⁻¹ mol⁻¹, Kso(TlCl)=-8.58. In PC: DH(K1)=-77.33, DS=-12.82, Kso=-11.31.

Tl+ EMF none 25°C 0.0 C T H 1981STb (5813) 65
 Method: Tl/Hg electrode. DH(K1)=-26.30 kJ mol⁻¹, DS=-4.97 J K⁻¹ mol⁻¹.

Tl+ vlt NaCl 25°C 1.0M C B2=1.15 1975APd (5814) 66
 Method: polarography.

Tl+ sol non-aq 25°C 100% U I 1974MUa (5815) 67
 Kso=-8.53
 Medium: DMF. Kso=-5.58 (in DMSO), -11.45 (in propene carbonate)

Tl+ sol non-aq 25°C 100% U B2=7.2 1973BNa (5816) 68
 Kso=-8.9
 Medium: N,N-dimethylacetamide

Tl+ sol none ? 0.0 U I K1=0.59 B2=0.32 1973POb (5817) 69
 0 corr from NaCl. K1=0.57, B2=0.36(0 corr from NH₄Cl). K1=0.56, B2=0.38(0 corr from HCl)

Tl+ sol oth/un 25°C var U K1=-0.6 1972AAb (5818) 70
 Medium: HCl

Tl+ sol none 25°C 0.0 U K1=0.65 1972CPa (5819) 71

Tl+ ISE NaClO₄ 25°C 1.0M U I K1=-0.02 B2=-0.39 1972FIb (5820) 72
 Medium: LiClO₄. K1=0.4, B2=-0.2(I=0); K1=-0.08, B2=-1.0(I=2). TlHg electrode

Tl+ sol none 25°C 0.0 U T 1972KEa (5821) 73
 Kso=-3.656
 Kso=-4.046(10.1 C), -3.923(15 C), -3.811(20 C), -3.542(30 C), -3.436(35 C),
 -3.312(40 C), -3.238(45 C)

Tl+ sol none 25°C 0.0 U T 1972KEa (5822) 74
 Kso=-3.862
 In D₂O. Kso=-4.305(10 C), -4.139(15 C), -4.006(20 C), -3.764(30 C),
 -3.637(35 C), -3.571(40 C), -3.403(45 C)

Tl+ ISE NaClO₄ 25°C 3.0M U K1=0 1971BSd (5823) 75
 Method: Tl amalgam electrode

Tl+ ISE NaClO₄ 25°C 1.0M U I K1=0.08 B2=0.04 1971FRb (5824) 76
 Medium: LiClO₄. K1=0.40, B2=-0.60(I=0); K1=0.11(I=0.5); K1=-0.12, B2=0.05
 (I=2); K1=-0.10, B2=-1.1(I=3); K1=-0.08, B2=-1.2(I=4). TlHg electrode

Tl+ sp NaClO₄ 25°C 0.15M U K1=0.31 1971MMg (5825) 77

Tl+ vlt NaClO₄ 30°C 1.0M U I K1=0.32 1970B0d (5826) 78

Medium: Na(F,ClO4). K1=0.0, B2=-0.44(I=4)

Tl+ EMF non-aq 25°C 100% U 1970SAc (5827) 79
Kso=-12.39

Medium: propene carbonate

Tl+ cal none 25°C 0.0 U H 1969BPa (5828) 80
DH(K1)=-6.3 kJ mol⁻¹

Tl+ con diox/w 25°C 20% U I K1=1.01 1969DFa (5829) 81
Medium: 19.8% w/w dioxan/H2O. K1=0.72(0%), 1.40(35.8%), 1.61(43.6%),
2.06(53.6%), 2.31(58.2%), 2.94(66.2%)

Tl+ sol non-aq 24°C 100% U K1=2.3 B2=3.4 1969Lub (5830) 82
B3=3.2
B(Tl2L)=3.0
Kso=-5.5

Medium: DMSO, 1 M LiClO4. TlHg electrode

Tl+ sol none 25°C 0.0 U K1=0.62 1969MPa (5831) 83
Using spect., K1 <0.3

Tl+ ISE non-aq 25°C 100% U 1969SBa (5832) 84
K(TlL(s)=TlL)=-4.6
K(TlL(s)+L=TlL2)=-2.1
Kso(TlL(s)=Tl+L)=-9.0

Medium: DMF. In DMSO: Ks1=-2.95, Ks2=-1.8, Kso=-6.4. In propene carbonate:
Ks1=-6.4, Ks2=-4.1, Kso=-12.4

Tl+ sol none 30°C 0.0 U K1=0.60 1967KHa (5833) 85
Kso=-3.62

Tl+ sol none 25°C 0.0 U I K1=0.52 1967KPa (5834) 86
Kso=-3.74

In 16.7% MeOH: K1=0.70. K1=0.90(30%), 1.34(60%); Kso=-4.15(16.7%),
-4.49(30%), -5.36(60%)

Tl+ ISE non-aq 25°C 100% U I K1=2.70 B2=3.95 1966CBa (5835) 87
Kso=-6.26

Medium: DMSO, 0.5 M LiClO4. Kso(TlCl(s)=Tl+Cl)=-7.21(I=0). TlHg electrode

Tl+ sol none 25°C 0.0 U K1=0.62 1966MPa (5836) 88
Kso=-3.74

Tl+ sol oth/un 25°C 0.0 M K1=0.6 1964MPa (5837) 89

Tl+ vlt oth/un 25°C var U B2=-0.80 1963Kmd (5838) 90
B3=-1.68
B4=-2.64

Medium:LiCl var

Tl+	sol NaClO4	25°C	4.0M	U T H	K1=0.00	B2=-0.58	1963KMe (5839)	91
Medium: LiClO4. K1=0.04, B2=-0.74(15 C); -0.05, -0.55(40 C); -0.10, -0.40(60 C); -0.12, -0.5(80 C). DH(K1)=-4.6 kJ mol ⁻¹ , DS=-17 J K ⁻¹ mol ⁻¹ ; DH(B2)=9.6, DS=-17								
Tl+	sol NaClO4	25°C	4.0M	U T H			1963KMe (5840)	92
K(K+TlCl2)=-0.58 Medium: LiClO4. K=-0.37(15 C), -0.72(40 C), -0.69(60 C), -0.82(80 C) DH(K)=-11 kJ mol ⁻¹ . DS=-54 J K ⁻¹ mol ⁻¹ (25 C)								
Tl+	ISE none	25°C	0.0	U	K1=0.80		1962APa (5841)	93
Tl+	vlt NaClO4	25°C	2.0M	U	K1=0.19		1962BSc (5842)	94
Tl+	sol non-aq	275°C	100%	U T	K1=0.3		1962SIc (5843)	95
Medium: liquid (Na/K)NO3, m units								
Tl+	sol none	25°C	0.0	U	K1=0.74		1962SMc (5844)	96
Kso(TlL(s))=-3.75								
Tl+	dis non-aq	480°C	100%	U I	K1=0.85		1961KEb (5845)	97
Medium: liquid KNO3. Kd(TlL(in AgCl(l))) = TlL(in KNO3(l))=-1.7. In liquid K2S2O7 K1=0.3, Kd=-1.4. In m units								
Tl+	sol NaClO4	25°C	4.0M	U	K1=0.09	B2=0.74	1961KMb (5846)	98
Kso(TlL(s))=-2.8 Method: Tl/Hg electrode. Medium: LiClO4. Also data on addn. of Na, K, Rb, Cs See: V Mironov, Zh.Neorg.Khim., 1963, 8, 764								
Tl+	vlt none	25°C	0.0	U	K1=0.46		1961NRa (5847)	99
Tl+	vlt NaClO4	25°C	1.0M	U	K1=0.64		1961NRa (5848)	100
Tl+	ISE none	25°C	0.0	U	K1=0.60	B2=0.40	1958BOb (5849)	101
Tl+	ix none	25°C	0.0	U	K1=0.46	B2=-0.02	1958HOa (5850)	102
K3=-0.9?								
Tl+	ISE NaClO4	25°C	4.0M	U	K1=0.00	B2=-0.80	1957NIa (5851)	103
Kso(TlL(s))=-3.04 Method: Tl/Hg electrode. By solubility K1=-0.1, K2=-0.7, K3=-0.9, Kso=-3.04 Ks(TlL(s)=TlL)=-3.15, K(TlL(s)+L=TlL2)=-3.74, K(TlL(s)+2L=TlL3)=-4.70								
Tl+	oth none	25°C	0.0	U H	K1=0.49		1957NNa (5852)	104
extrapolated to zero ionic strength, DS(K1)=-7.5 J K ⁻¹ mol ⁻¹								
Tl+	oth none	40°C	0.0	U	K1=0.44		1957NNa (5853)	105
Tl+	sp NaClO4	?	2.20M	U	K1=-0.13		1956PVa (5854)	106

Tl+	sol none	25°C	0.0	U T H	K1=0.68	1955ANd (5855)	107
Kso(TlL(s))=-3.76							
I=0 corr. 5 C: K1=0.66, Kso=-4.33; 45 C: K1=0.67, Kso=-3.32							
DH(K1)=0.4 kJ mol ⁻¹ , DS=15 J K ⁻¹ mol ⁻¹ ; DH(Kso)=42.3, DS=70.3							
Tl+	sol none	25°C	0.0	U	K1=0.60	B2=0.17	1955HSa (5856) 108
Tl+	sol none	25°C	0.0	U H			1953ADa (5857) 109
I=0 corr. DH(K1)=1.1 kJ mol ⁻¹ , DS=17 J K ⁻¹ mol ⁻¹							
Tl+	sol none	25°C	0.0	U T	K1=0.68		1953BGb (5858) 110
I=0 corr. K1=0.78(0 C), 0.64(40 C). DH(K1)=-6.0 kJ mol ⁻¹ , DS=-7.1 J K ⁻¹ m ⁻¹							
Tl+	con none	25°C	0.0	U I	K1=0.64		1945GVa (5859) 111
I=0 corr. Also in (CH ₂ OH) ₂ /H ₂ O mixtures							
Tl+	sol none	25°C	0.0	U	K1=0.66		1943BGa (5860) 112
Tl+	sol none	25°C	0.0	U	K1=0.66		1941HGb (5861) 113
Tl+	con none	18°C	0.0	U	K1=0.60		1937RDa (5862) 114
Tl+	con none	25°C	0.0	U	K1=0.47		1937RDa (5863) 115
Tl+	ISE none	25°C	0.0	U	K1=0.51		1934CMa (5864) 116
Tl+	sol none	18°C	0.0	U	K1=0.52		1930BDa (5865) 117
Tl+	ISE alc/w	25°C	100%	U			1929BHa (5866) 118
Kso(TlL(s))=-4.54							
Medium: MeOH							
Tl+	sol none	25°C	0.0	U			1928RVa (5867) 119
Kso(TlL(s))=-3.726							
Tl+	con none	18°C	0.0	U	K1=0.51		19270Na (5868) 120
Tl+	sol none	25°C	0.0	U T			1926BHa (5869) 121
Kso(TlL(s))=-3.72							
I=0 corr. Kso=-4.43(0 C), -3.16(50 C)							
Tl+	sol none	40°C	0.0	U			1923B0a (5870) 122
Kso(TlL(s))=-3.32							
Tl+	con none	26°C	0.0	U T			1923B0a (5871) 123
Kso(TlL(s))=-3.67							
I=0 corr. Kso=-4.12(9.5 C)							
Tl+	sol none	25°C	0.0	U			1923B0a (5872) 124

Kso(TlL(s))=-3.66

Tl+ con none 20°C 0.0 U 1903B0b (5873) 125

Kso(TlL(s))=-3.82

ClO3- HL Chlorate CAS 7790-93-4 (971)
Chlorate;

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

Tl+ sol none 25°C 0.0 U K1=0.47 1892N0a (6064) 126

ClO4- HL Perchlorate CAS 7001-90-3 (287)
Perchlorate;

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

Tl+ vlt non-aq 22°C 100% U K1=3.3 1988BEb (6383) 127
Medium: CH2Cl2

Tl+ sol NaClO4 25°C ? U K1=-0.5 1973J0a (6384) 128

Tl+ vlt oth/un 30°C 1.0M U K1=-0.49 1970B0d (6385) 129
Medium: KF

Tl+ con non-aq 25°C 100% U K1=1.51 1970YKb (6386) 130
Medium: MeCN, 0 corr

Tl+ sp oth/un 80°C 0.0 U T K1=-0.40 1967ZBa (6387) 131
K1=-0.20(23 C), -0.26(40 C), -0.34(60 C)

Tl+ oth oth/un 25?°C 0.0 M K1=0.2 1966MBb (6388) 132

Tl+ con none 25°C 0.0 U K1=0.0 1937RDa (6389) 133

CrO4-- H2L Chromate CAS 7738-94-5 (2382)
Chromate;

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

Tl+ sol oth/un 20°C 2.40M U 1974FEa (6512) 134
Kso=-10.0

Tl+ sol NaClO4 20°C 3.00M U 1974FGe (6513) 135
Kso=-9.85

Tl+ sol oth/un 20°C dil U 1958KGb (6514) 136
Kso=-11.70

Tl+ ISE none 25°C 0.0 U 1953SUa (6515) 137

Kso=-12.01

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

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

Tl+ con oth/un 25°C 1.00M U I K1=-0.07 B2=-0.25 1976FRa (7263) 138
At I=4.0, K1=-0.13. Data also at I=2.0 and 3.0 M

Tl+ vlt oth/un 25°C 0.10M C K1=2.88 1975APd (7264) 139
Method: polarography. Medium: 0.10 M NaF.

Tl+ sol NaClO4 25°C 0.50M U K1 < -1.22 1973JOa (7265) 140

Tl+ EMF non-aq 0°C 100% U K1=-0.02 1966CPb (7266) 141
Medium: HF

Tl+ EMF non-aq 0°C 100% U K1=3.33 1961CZa (7267) 142
Medium: liquid HF, I=0

Tl+ sol none 25°C 0.0 U K1=0.10 1953BGB (7268) 143

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

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

Tl+ sol oth/un 25°C var U M 1962FSa (7436) 144
B(TlClBr)=0.80
B(TlClBr2)=0.93
B(TlBrI)=2.24
B(TlBrI2)=2.42

H2O L Water CAS 7732-18-5 (6115)
Water

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

Tl+ vlt alc/w 25°C 100% U K2=-1.48 1958VAa (7613) 145
K3=-1.66

Medium: EtOH, 0.1 M KNO3

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

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

Tl+ EMF oth/un 25°C 0.0 C T 1993MCb (8386) 146
 Kso(TlI)=-7.354
 Method: Tl(Hg)/Tl(I) electrode. At 40 C, Kso=-6.729; at 55 C, Kso=-6.198.
 Medium 0.10 M KI. Cell emf independent of [I].

Tl+ EMF non-aq 25°C 100% C TIH 1981STb (8387) 147
 Method: Tl/Hg electrode. Medium: DMF. DH(K1)=-26.86 kJ mol⁻¹, DS=12.28
 J K⁻¹ mol⁻¹, Kso(TlCl)=-6.86. In PC: DH(K1)=-46.62, DS=10.36, Kso=-9.99.

Tl+ EMF none 25°C 0.0 C T H 1981STb (8388) 148
 Method: Tl/Hg electrode. DH(K1)=-70.05 kJ mol⁻¹, DS=-29.69 J K⁻¹ mol⁻¹.

Tl+ sp NaClO₄ 25°C 0.02M U T H K1=2.86 1975PFa (8389) 149
 L=the triiodide ion. K1=2.70 (5 C); 2.80 (15 C); 2.87 (35 C); 2.83 (45 C)

Tl+ sol non-aq 25°C 100% U I 1974MUa (8390) 150
 Kso=-7.01
 Medium: DMF. In DMSO: Kso=-4.78. In propene carbonate: Kso=-9.99

Tl+ sol non-aq 25°C 100% U B2=6.2 1973BNa (8391) 151
 Kso=-6.8
 Medium: N,N-dimethylacetamide

Tl+ EMF non-aq 25°C 100% U Kso=-12.22 1970SAC (8392) 152
 Medium: propene carbonate

Tl+ ISE non-aq 24°C 100% U K1=1.9 B2=2.3 1969Lub (8393) 153
 B3=2.4
 B(Tl₂I)=1.0
 B(Tl₃I)=1.9
 Kso(TlI(s)=Tl+I)=-4.9
 Medium: DMSO, 1 M LiClO₄. TlHg electrode

Tl+ con non-aq 140°C 100% U K1=2.91 1967BNb (8394) 154
 K(TlI+Tl)=3.10
 Medium: liquid I₂

Tl+ EMF NaClO₄ 25°C 7.0M U 1966JOa (8395) 155
 Kso(Tl(I₃))=-7.74
 Medium: 3 M HClO₄, 4 M NaClO₄. Kso(TlI)=-6.77, Ks(TlI0.83(I₃)0.17)=-6.16

Tl+ sol oth/un 25°C var U H 1963Kmd (8396) 156
 Medium: KI. DH(K1)=-17 kJ mol⁻¹, DS=-29 J K⁻¹ mol⁻¹; DH(B2)=-30, DS=-67

Tl+ sol NaClO₄ 25°C 4.0M U K1=0.76 B2=0.90 1960KMa (8397) 157
 K3=0.14
 K4=-0.19
 B4=0.85

Tl+ sol oth/un 20°C var U T H B2=2.20 1958KMb (8398) 158
B3=1.95
B4=1.54
Kso(AgL)=-7.49

Medium:KI. DH(B2)=-35 kJ m-1,DH(B3)=-39,DH(B4)=45.2. 30 C:Kso=-7.07,K(TLL(s)=TLL)=-5.40,B2=2.03,B3=1.80,B4=1.29. 40 C:Kso=-6.69,K=-5.05,B2=1.72,B3=1.51

Tl+ sol oth/un 50°C var U T K1=1.38 B2=1.58 1958KMb (8399) 159
B3=1.31
B4=0.80
Kso(TLL)=-6.31
K(TLL(s)=TLL)=-4.92

Medium KI. At 60 C: Kso=-5.96, K=-4.74, K1=1.21, B2=1.40, B3=1.12, B4=0.58.
At 70 C: Kso=-5.63, K=-4.43, K1=1.17, B2=1.28, B3=0.94, B4=0.37

Tl+ EMF NaClO4 25°C 4.0M U 1958MIa (8400) 160
Kso=-6.73

Tl+ sol oth/un 70°C dil U T 1958MIa (8401) 161
Kso=-5.63
Kso=-7.49(20 C), -7.24(25 C), -6.69(40 C), -6.31(50 C), -5.96(60 C)

Tl+ sol oth/un 25°C var U 1958MIa (8402) 162
B4=-0.92

Medium:ZnI2

Tl+ sol oth/un 25°C var U I K1=1.52 B2=1.94 1957KMa (8403) 163
B3=1.72
B4=1.24
Kso(TLL)=-7.24

Medium: LiI. In NaI K1=1.50, B2=1.96, B3=1.71, B4=1.32. In NH4I K1=1.45,
B2=1.92, B3=1.86, B4=1.44. In RbI: K1=1.52, B2=2.00, B3=1.87, B4=1.51

Tl+ sol NaClO4 25°C 4.0M U K1=0.72 B2=0.90 1957NIa (8404) 164
K3=0.18
K4=-0.38
Kso(TLL)=-6.72
K(TLL(s)=TLL)=-6.00

K(TLL(s)+L=TLL2)=-5.82, K(TLL(s)+2L=TLL3)=-5.64, K(TLL(s)+3L=TLL4)=-6.00.
By Tl/Hg electrode Kso=-6.73

Tl+ con none 25°C 0.0 U 1937DRa (8405) 165
Kso(TLL)=-7.19

Tl+ con none 26°C 0.0 U T 1923BOa (8406) 166
Kso(TLL)=-7.20
I=0 corr. Kso=-7.93(9.9 C), -7.55(18 C)

Tl+ EMF oth/un 25°C dil U 1912SPa (8407) 167
Kso(TLL)=-7.51

Tl+ con oth/un 20°C dil U 1903B0b (8408) 168
Kso(TlL)=-7.44

I03- HL Iodate CAS 7782-68-5 (1257)
Iodate;

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

Tl+ sol oth/un 20°C 2.40M U 1974FEa (8562) 169
Kso(TlL(s))=-4.66

Medium: Na2SO4

Tl+ sol NaClO4 20°C 3.0M U 1974FGe (8563) 170
Kso(TlL(s))=-4.31

Tl+ vlt NaClO4 25°C 1.0M U K1=0.15 1972BHb (8564) 171

Tl+ sol none 25°C 0.0 U T H 1953BGb (8565) 172
Kso(TlL)=-5.51

I=0 corr. DH(so)=55.6 kJ mol⁻¹, DS=81 J K⁻¹ m⁻¹. Kso=-6.40(0 C), -5.09(40 C)

Tl+ sol none 25°C 0.0 U 1929MGa (8566) 173
Kso(TlL)=-5.51

Tl+ EMF oth/un 25°C dil U 1912SPa (8567) 174
Kso(TlL)=-5.34

Tl+ con oth/un 20°C dil U 1903B0b (8568) 175
Kso(TlL)=-5.66

MoO4-- H2L Molybdate (443)
Molybdate;

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

Tl+ sol NaClO4 20°C 3.00M U 1974FGe (8760) 176
Kso(Tl2L(s))=-6.02

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

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

Tl+ vlt oth/un 25°C 1.0M C B2=2.48 1975APd (9215) 177
Method: polarography. Medium: 1.0 M NH4OH.

Tl+ gl R4N.X 23°C 2.0M U K1=-0.9 1941BJa (9216) 178
Medium: NH4NO3

Tl+ sol oth/un 16°C var U K1=-0.92 1928JOa (9217) 179
K1=-0.87 by spec. (Job's method)

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

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

Tl+ con oth/un 25°C 0.0 U K1=0.80 1957NBA (9407) 180
By Tl electrode K1=0.85

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

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

Tl+ oth oth/un 20°C 3.00M U K1=-0.57 1979FEa (9947) 181
Method: densimetry

Tl+ oth NaClO4 20°C 3.0M U K1=-0.55 1979FEb (9948) 182
Method: densitometry

Tl+ vlt oth/un 25°C 0.20M C K1=1.18 B2= 2.30 1975APd (9949) 183
B3=3.0
Method: polarography. Medium: 0.20 M NaNO3.

Tl+ cal oth/un 25°C 0.5M U K1=-0.3 1975FRa (9950) 184
Background salt: LiClO4; For: I=1.0 M, K1=-0.32

Tl+ sol NaClO4 20°C 0.40M U M 1975GFa (9951) 185
B(Tl(S2O3)(NO3))=-0.08
B(Tl(S2O3)(NO3)2)=-0.37

Tl+ sol NaClO4 20°C 3.0M U K1=-0.6 B2=-1.5 1974FGe (9952) 186

Tl+ con oth/un 25°C 0.0 U K1=0.29 1974Mwc (9953) 187

Tl+ oth oth/un 25°C var U 1971JCa (9954) 188
K(Tl(H2O)2+L=Tl(H2O)L)=-0.4

Method: dilatometry,densometry

Tl+ vlt oth/un 30°C 1.0M U I K1=-0.19 1970B0d (9955) 189
Medium: KF. K1=-0.43(I=4)

Tl+ sol NaNO3 30°C 0.10M U I K1=0.41 1969Kmd (9956) 190
In LiNO3: K1=0.30; KNO3: 0.53; CsNO3: 0.65; Mg(NO3)2: 0.75

Tl+ con diox/w 25°C 16% U I K1=0.69 1968DFa (9957) 191
Medium: 16% dioxan. K1=0.51(0%), 0.60(7.8%), 1.04(36.2%), 1.54(52.5%),
1.81(59.2%), 2.61(70.0%), 3.27(76.4%)

Tl+ oth oth/un 25°C 0.0 U K1=0.5 1966MBb (9958) 192

Tl+ ISE NaClO4 25°C 3.0M U H K1=-0.48 1965KMb (9959) 193
Method: amalgam electrode. Medium: LiClO4. DH(K1)=-25.9 kJ mol⁻¹, DS=-96

Tl+ vlt oth/un 25°C 0.0 U K1=0.38 1961NRa (9960) 194

Tl+ sol oth/un 25°C 0.0 U T H K1=0.33 1957NNa (9961) 195
K1=0.38(0 C), 0.31(40 C). DH(K1)=-2.7 kJ mol⁻¹, DS=-4 J K⁻¹ mol⁻¹ (25 C)

Tl+ con oth/un 25°C 0.0 U K1=0.38 1937ROa (9962) 196

Tl+ con oth/un 18°C 0.0 U K1=0.26 1927ONa (9963) 197

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

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

Tl+ sol non-aq 25°C 100% U 1973BNa (10260) 198
Medium: MeCONMe2. Kso=-6.9

Tl+ vlt NaClO4 25°C 2.0M U K1=0.40 1962BSc (10261) 199

Tl+ sol oth/un 25°C 0.0 U T H K1=0.39 1957NNa (10262) 200
K1=0.45(10 C), 0.35(40 C). DH(K1)=-5.6 kJ mol⁻¹, DS=-11 J K⁻¹ mol⁻¹

Tl+ cal oth/un 25°C 0.0 U H 1956GWc (10263) 201
DH(Kso(TlL(s)))=46.6 kJ mol⁻¹

Tl+ ISE oth/un 25°C 0.0 U 1952SUa (10264) 202
Kso(TlL(s))=-3.66

OH- HL Hydroxide (57)
Hydroxide;

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

Tl+ nmr NaClO4 25°C 2.0M C I 1997SCa (12305) 203

*K1=-0.03

*B2=-1.2

Additional method: spectrophotometry. Data for I=2.0-8.0 M NaClO4.

Tl+ cal NaClO4 25°C 3.00M U H K1=0.09 B2=-0.86 1973KKg (12306) 204
Medium: LiClO4. DH(K1)=7.5 kJ M⁻¹, DS=26.8 J K⁻¹ M⁻¹; DH(K2)=20.9, DS=52.3

Tl+ sp oth/un 25°C 1.00M U 1971CHa (12307) 205
K(Tl+ + TlOH++ = Tl2O+H)=1.7

Tl+ sp NaClO4 25°C 0.50M U I K1=0.30 1970KYa (12308) 206
K1=0.25(I=1), K1=0.09, B2=-0.8(I=3); K1=0.30(I=5)
In LiClO4: K1=0.09, B2=-0.82(I=3); K1=-0.08(I=5)). At I=0, K1=0.69

Tl+ oth none 25°C 0.0 U K1=0.48 1962LIc (12309) 207

Tl+ kin none 25°C 0.0 U K1=0.85 1956BPa (12310) 208

Tl+ sol none 25°C 0.0 U T H K1=0.82 1953BGb (12311) 209
DH(K1)=1.5 kJ mol⁻¹, DS=21 J K⁻¹ mol⁻¹. K1=0.81(0 C), 0.85(40 C)

Tl+ kin oth/un 25°C 0.08M U I K1=0.22 1949BPb (12312) 210
Medium:0.08 to 0.25 M. At I=0: K1=0.42. By conductivity, I=0, K1=0.49

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

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

Tl+ sp NaClO4 25°C 0.15M U K1=2.41 1971MMg (13348) 211
K(Tl+HL)=0.73

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

Tl+ sp NaClO4 25°C 1.30M U K1=2.20 B2=3.40 1984FEa (13663) 212

Tl+ sp NaClO4 25°C 0.15M U K1=3.05 1971MMg (13664) 213
K(Tl+HL)=2.34

Tl+ vlt KNO3 35°C 2.00M U K1=1.69 B2=1.9 1952SDa (13665) 214

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

Tl+ sol oth/un 20°C 2.40M U K1=1.3 B2=2.3 1974FEa (13914) 215
Medium:Na2SO4

ReO4- HL Perrhenate (2581)
Rhenate(VII), Perrhenate;

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

Tl+ sol none 25°C 0.0 C 1988HHb (14111) 216
Kso(TlReO4)=-4.92

Method: perrhenate ion selective electrode.

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

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

Tl+ oth none ? 0 U 1990DKa (14485) 217
*Ks(Tl2S+H=2Tl+HS)=-7.22

From recalculation of literature data.

Tl+ oth none 25°C 0 U 1988LIa (14486) 218
Kso(Tl2S)=-24.5
*Kso(Tl2S)=-7.2

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

Tl+ ISE NaClO4 25°C 1.0M U 1972GRa (14487) 219
K(Tl+HL)=2.27
K(2Tl+HL)=8.04
K(2Tl+OH+3HL)=14.96
K(2Tl+2OH+2HL)=16.7

Kso=-21.15

Tl+ sol NaClO4 25°C 3.0M U 1966GKc (14488) 220
*Kso(.5Tl2S(s))=1.36

Tl+ vlt none 25°C 0.0 U 1959KKa (14489) 221
Kso(Tl2L)=-20.0
I=0 corr. K(0.5Tl2L(s)+H=Tl+0.5H2S(g))=0.46

Tl+ oth none 25°C 0.0 U 1952GGc (14490) 222
Kso(Tl2L)=-19.15

From thermodynamic data

Tl+ oth none 25°C 0.0 U 1952LAb (14491) 223
Kso(Tl2L)=-21

From thermodynamic data

Tl+ sol none 20°C 0.0 U 1936RAa (14492) 224
Kso(Tl2L)=-22.19

I=0 corr. K(0.5Tl2L(s)+H=Tl+0.5H2S(g))=0.37

Tl+ sol oth/un 18°C var U 1931K0a (14493) 225
Kso(Tl2L)=-22.16

At 20 C: Kso=-23.92, K(0.5Tl2L+H=Tl+0.5H2S(g))=-0.48

Tl+ sol oth/un 25°C var U T 1909BZa (14494) 226
K=0.41
Kso(Tl2L)=-22.15

K: K(0.5Tl2L(s)+H=Tl+0.5H2L). K=-0.17(0 C), 0.69(40 C). Kso=-22.35(18 C)

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	sp	non-aq	25°C	100%	C			K1=0.15	1998AEa (15281)	227
Medium: N,N-Dimethylthioformamide. Methods: IR and FT Raman spectroscopy. Ligand is S-bonded (thiocyanate). For N-bonding (isothiocyanate), K1=-0.52										
Tl+	oth	NaClO4	25°C	3.0M	U	I	R	K1=0.10	1997BPa (15282)	228
IUPAC evaluation										
Tl+	sol	none	25°C	0.0	C				1975PTE (15283)	229
Method: SCN ion selective electrode. Data for 10-40 C.										
Tl+	ISE	NaClO4	25°C	3.0M	U	I		K1=0.08 B2=-0.08 B3=-0.96 B4=-1.22	1972FIb (15284)	230
Medium: LiClO4; K1=0.15, B2=-0.06, B3=-0.39(I=1); K1=0.12, B2=-0.11, B3=-0.47(I=2); K1=0.13, B2=-0.03, B3=-0.50, B4=-1.4(I=4). Method: Tl amalgam electrode										
Tl+	oth	none	25°C	0.0	U			K1=0.56 B2=0.37 B3=-0.30	1972FIb (15285)	231
Tl+	ix	oth/un	25°C	var	U			K1=0.46 B2=0.92 B3=0.30 B4=0.40	1971BSj (15286)	232
Tl+	ISE	NaClO4	25°C	4.0M	U	I	T	K1=0.15 B2=-0.06 B3=-0.42 B4=-1.4	1971FRb (15287)	233
Medium: LiClO4; K1=0.17, B2=-0.05, B3=-0.36(I=1); 0.12, -0.12, -0.47(I=2); K1=0.10, B2=-0.10, B3=-0.55, B4=-1.40(I=3). Method: Tl amalgam electrode										
Tl+	ISE	none	25°C	0.0	U		T	K1=0.58 B2=0.36 B3=-0.5	1971FRb (15288)	234
Medium: LiClO4, extrapolated to zero conc. Method: Tl amalgam electrode										
Tl+	ISE	NaClO4	25°C	1.0M	U	I	M		1971FRb (15289)	235
B(TlClL)=-0.05 B(TlClL2)=-0.09 Medium: LiClO4. B(TlClL)=-0.15(I=0.5), -0.22(I=2), -0.15(I=3), -0.17(I=4); I=0 corr:0.26. B(TlClL2)=-0.27(I=2), -0.35(I=3), -0.68(I=4); I=0 corr: 0.18. Tl/Hg										
Tl+	vlt	KNO3	25°C	2.50M	U			K1=0.19 B2=-0.04 B3=-0.44	19660La (15290)	236
Tl+	sol	NaClO4	25°C	4.0M	U		T	K1=0.20 B2=-0.05 B3=-0.58	1965KMa (15291)	237

B4=-0.80
K(K+TlL4)=-0.1

Medium: LiClO4

Tl+ ISE NaClO4 25°C 3.0M U I T K1=0.11 B2=-0.06 1962KCb (15292) 238
B3=-0.43
B4=-1.35

Medium: LiClO4. By solubility K1=0.19, B2=-0.03, B3=-0.43, B4=-1.44. In 80% MeOH/H2O, 3 M LiClO4: K1=0.31, B2=0.35, B3=0.13. Also in 20, 40, 60% MeOH

Tl+ sol NaClO4 20°C 4.60M U T B2=0.49 1961GSb (15293) 239
B3=0.17
Kso(TlL)=-3.27
K(TlL(s)=TlL)=-2.61
K(TlL(s)+L=TlL2)=-2.72

Method: Tl/Hg electrode. K(TlL(s)+2L=TlL3)=-3.10, At 40 C: B2=0.41, B3=0.04, Kso(TlL)=-2.72, K(TlL(s)+L=TlL2)=-2.32, K(TlL(s)+2L=TlL3)=-2.77

Tl+ oth KNO3 25°C 2.0M U I K1=0.49 1961PRa (15294) 240
K1=0.53(I=3)

Tl+ sol oth/un 25°C var U I K1=0.62 B2=0.57 1960KMb (15295) 241
B3=0.13
B4=-0.34

Medium: LiI. In NaI K1=0.66, B2=0.60, B3=0.18, B4=-0.39. In KI: 0.74, 0.58, 0.25, -0.32. In CsI: 0.68, 0.68, 0.22, -0.48. In 8 M NaClO4: 0.42, 0.36, 0.01, -0.53

Tl+ sol none 25°C 0.0 U K1=0.85 1958BCa (15296) 242
K(TlL(s)=Tl+L)=-3.80
K(TlL(s)=TlL)=-2.94
B3=0.62

Tl+ vlt NaClO4 25°C 3.0M U T K1=0.64 B2=0.88 1958HTa (15297) 243
K3=-0.18
K4=0.03
K5=-0.21
K6=-0.06

B6=0.46

Tl+ sol oth/un 25°C dil U 1958MIb (15298) 244
Kso=-3.77

Tl+ vlt KNO3 25°C 3.0M U T K1=0.19 B2=-0.20 1958PDa (15299) 245
K3=-0.42
K4=-0.34
B4=-0.96

Tl+ ISE NaClO4 25°C 4.0M U K1=0.15 B2=0.00 1957NIa (15300) 246
K3=-0.46
K4=-0.46

K(TlL(s)=Tl+L)=-3.15

Tl+ sol NaClO4 25°C 4.0M U 1957NIa (15301) 247
K(TlL(s)=Tl+L)=-3.16
K(TlL(s)=TlL)=-3.00
K(TlL(s)+L=TlL2)=-3.15
K(TlL(s)+2L=TlL3)=-3.60
K(TlL(s)+3L=TlL4)=-3.97, K1=0.15, K2=-0.15, K3=-0.48, K4=-0.37

Tl+ vlt NaNO3 25°C 2.0M U K1=0.42 1956LSa (15302) 248

Tl+ sol none 30°C 0.0 U 1956SSb (15303) 249
K(TlL(s)=Tl+L)=-3.64

Additional method: polarography

Tl+ sol none 25°C 0.0 U T H K1=0.80 1953BGb (15304) 250
DH(K1)=-12.38 kJ mol⁻¹, DS(K1)=-26.8(25 C); K1=0.94(0 C), 0.64(40 C)

Tl+ ISE none 25°C 0.0 U 1952SUa (15305) 251
K(TlL(s)=Tl+L)=-3.77

Tl+ oth oth/un 20°C dil U 1903BOb (15306) 252
K(TlL(s)=Tl+L)=-3.92

S03-- H2L Sulfite CAS 7782-99-2 (801)
Sulfite;

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

Tl+ oth oth/un 20°C 3.00M U K1=0.02 1979FEa (15478) 253
Method: densimetry

Tl+ oth NaClO4 20°C 3.0M U K1=-0.02 1979FEb (15479) 254
Method: densitometry

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

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

Tl+ vlt oth/un 25°C 0.20M C B2=1.90 1975APd (16596) 255
Method: polarography. Medium: 0.20 M Na2SO4.

Tl+ cal oth/un 25°C 0.5M U K1=0.65 1975FRa (16597) 256
Background salt: LiClO4; For: I=1.0 M, K1=0.34;

Tl+ ISE oth/un 25°C 3.0M U K1=-0.48 B2=-0.89 1965KYd (16598) 257
Method:amalgam electrode. Medium: LiClO3. K1=-0.52 in summary

Tl+ vlt NaClO4 25°C 2.0M U K1=0.34 1962BSc (16599) 258

Tl+	EMF	oth/un	25°C	0.0	U	K1=1.8	1960CRa (16600)	259
Tl+	kin	NaCl04	25°C	3.68M	U	K1=0.3	1957BMa (16601)	260
Tl+	sol	oth/un	25°C	0.0	U T H	K1=1.37	1953BGb (16602)	261
K1=1.38(0 C), 1.36(40 C). DH(K1)=-1 kJ mol ⁻¹ , DS=23 J K ⁻¹ mol ⁻¹								
Tl+	con	oth/un	25°C	0.0	U	K1=1.44	1930BDa (16603)	262
Tl+	con	oth/un	18°C	0.0	U	K1=1.33	1930RDa (16604)	263
Tl+	con	oth/un	18°C	var	U	K1=1.85	1920DRa (16605)	264

S2O3-- H2L Thiosulfate CAS 73686-28-7 (177)
Thiosulfate;

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

Tl+ oth oth/un 20°C 2.70M U K1=0.79 B2=1.11 1979FEa (16902) 265
Method: densimetry

Tl+ oth NaCl04 20°C 2.7M U K1=0.79 B2= 1.13 1979FEb (16903) 266
Method: densitometry

Tl+ ISE NaCl04 25°C 1.00M U K1=1.57 B2=1.94 1977PGa (16904) 267

Tl+ EMF NaCl04 25°C 4.00M U K1=0.86 B2=0.72 1958NIa (16905) 268
K3=-0.54
B(Tl2L4)=2.54

Method: Tl/Hg electrode. By solubility Kso(Tl2L)=-4.54, K1=0.86

Tl+ sol oth/un 25°C var U K1=2.00 1954NRa (16906) 269
Kso(Tl2L)=-6.70

Tl+ vlt none rt 0.0 U K1=1.91 1954NRb (16907) 270

Tl+ ISE oth/un ? var U B2=3.1 1904EUa (16908) 271

Se-- H2L Selenide (6335)
Selenide;

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

Tl+ oth none 25°C 0.0 U Kso=-33.1 1964BUE (16950) 272

SeCN- HL Selenocyanate CAS 73102-11-2 (440)
Selenocyanate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	vlt	NaNO3	27°C	2.0M	U			K1=0.97 B2=0.88 B3=1.12	1973RTb (16996)	273

SeO4-- H2L Selenate CAS 7783-08-6 (459)
Selenate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	sol	none	25°C	0.0	U T H			Kso(Tl2L)=-4.00	1958SEb (17113)	274

I=0 corr. Kso=-4.40(10 C), -4.13(20 C), -3.88(30 C), -3.67(40 C).
DH(so)=43.1 kJ mol-1

V04--- H3L CAS 15457-75-7 (1586)
Vanadate; V02(OH)3-- or polymers

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	sol	oth/un	28°C	dil	U			Ks(Tl(V03))=-8.26 Ks(Tl4(V207))=-18.59	1964SMb (17393)	275

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	con	NaClO4	25°C	1.00M	U			K1=0.3	1998GZa (17861)	276
Tl+	vlt	KNO3	25°C	1.5M	C			K1=0.60 B2= 1.15 B3=1.68	1978DKb (17862)	277

Method: polarography.

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
Tl+	vlt	KNO3	30°C	1.00M	U	M			1982GSa (19107)	278
B(Tl(2-mercaptobenzoate)L) = 5.22										
Tl+	gl	NaClO4	25°C	0.15M	U			K1=0.86	1971MMg (19108)	279
Tl+	vlt	NaClO4	25°C	0.10M	U			K1=1.70	1969VPa (19109)	280

Method : amperometry

Tl+	EMF	oth/un	25°C	0.20M	U			K1=2.03	1905ASa (19110)	281
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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

Tl+ con oth/un 25°C ->0 U K1=-0.11 1937RDa (20204) 282

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

Tl+ gl NaClO4 25°C 0.10M U K1=1.51 1974Kuc (21735) 283

Medium: LiClO4

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

Tl+ sol oth/un 16°C var U K1=0.4 1928JOa (23237) 284

By spectrophotometry K1=0.3

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

Tl+ sp NaClO4 25°C 0.15M U K1=0.54 1971MMg (24571) 285

C3H6O2S H2L CAS 107-96-0 (437)
3-Mercaptopropanoic acid; HS.CH2.CH2.COOH

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

Tl+ EMF KNO3 20°C 0.10M U T K1=2.78 1968SGd (25230) 286

K1(30 C)=2.85, K1(40 C)=2.94

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

Tl+ gl NaClO4 25°C 0.10M U T K1=1.48 1974Kuc (26280) 287

Medium: LiClO4

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

C4H8N2O4 H2L CAS 39156-77-9 (3008)
Hydrazine-N,N-diethanoic acid; H2N.N(CH2.COOH)2

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

Tl+ sp oth/un 20°C ? U K1=11.58 1972KVa (33115) 295
K(Tl+HL)=5.54

C4H8O2S HL CAS 623-51-8 (4265)
Ethyl-2-mercaptoacetate; HS.CH2.CO2.C2H5

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

Tl+ vlt alc/w 20°C 40% U T K1=1.74 B2=2.00 1972SCf (33368) 296
B3=3.25

Medium: 40% EtOH, 0.5 M NaClO4. 30 C: K1=1.70, B2=1.95, B3=3.20

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

Tl+ vlt NaClO4 25°C 0.10M C K1=0.90 B2= 1.95 1986SPb (34330) 297
Method: polarography.

C4H10N2O2 HL EDMA (2784)
Diaminoethane-N-ethanoic acid; H2N.CH2.CH2.NH.CH2.COOH

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

Tl+ vlt NaClO4 25°C 0.30M U K1=1.30 1970FUb (34594) 298

C4H11O2PS2 H3L CAS 298-06-6 (210)
O,O'-Diethyldithiophosphoric acid; (C2H5O)2P(S)SH

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

Tl+ dis KNO3 25°C 0.30M C K1=1.40 1986HSb (35237) 299

Tl+ sp alc/w 25°C 100% U K1=4.65 1979Sjd (35238) 300

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

Tl+ vlt oth/un 25°C 0.30M U K1=1.28 1970FUb (35818) 301

C5H9NO3S H2L N-Acetyl-Cys CAS 616-91-1 (1187)

N-Acetylcysteine; CH3.CO.NH.CH(CH2.SH)COOH

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

Tl+ gl NaCl 37°C 0.15M C K1=2.27 1989BCa (38818) 302

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

Tl+ gl oth/un 25°C 0.1M U K1=2.35 B2= 4.05 1975KUb (39132) 303
In 0.1 M LiClO4

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

Tl+ gl NaCl 37°C 0.15M C K1=3.58 1989BCa (41284) 304
B(TlHL)=12.00

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

Tl+ EMF non-aq 25°C 100% U B2=6.5 1987USa (41372) 305
Medium: DMF, 0.1 M LiClO4

Tl+ sp non-aq ? 100% U M 1968SRg (41373) 306
K(TlHA+HL=TlL+H2A)=3.53
Medium: CCl4. H2A=dithizone

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

Tl+ sp NaClO4 25°C 0.15M U K1=0.87 1971MMg (41426) 307

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

Tl+ gl KCl ? 0.10M U K1=7.05 1966TBa (43852) 308

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

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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Tl+        sp  NaClO4 25°C 0.15M U          K1=1.36      1971MMg (46283) 309
-----
Tl+        con oth/un 28°C  ?  U          K1=2.82      1965SBa (46284) 310
-----
Tl+        ix  oth/un 25°C 0.10M U  I    K1=1.04      1956SAb (46285) 311
K1=0.97(I=0.3 M), 0.65(I=0.5)
*****
C6H9NO6          H3L          CAS 41035-84-1 (4367)
N-Carboxymethyl-L-aspartic acid;
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Tl+        gl  KNO3   25°C 0.1M U          K1=4.59  B2= 6.29  2005SNa (46381) 312
                        K(Tl+HL)=1.42
*****
C6H9NO6          H3L   NTA          CAS 139-13-9 (191)
Nitriлотriethanoic acid; N(CH2.COOH)3
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Tl+        gl  KNO3   20°C 0.10M C TIH  R  K1=4.74      1982ANa (47054) 313
IUPAC evaluation
-----
Tl+        sp  NaClO4 25°C 0.15M U          K1=4.42      1971MMg (47055) 314
-----
Tl+        ix  oth/un  ?  ?  U          K1=5.00      1969KKF (47056) 315
-----
Tl+        gl  KNO3   20°C 0.10M U          T  K1=4.75      1967ABc (47057) 316
-----
Tl+        gl  R4N.X  20°C 0.10M U          T  K1=4.74      1963IFb (47058) 317
Medium: Me4NNO3
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Tl+        vlt oth/un 25°C 1.0M U          K1=3.44      1957BVa (47059) 318
*****
C6H10O4S2          H2L          CAS 1119-62-6 (3697)
3,3'-Di(thiopropanoic acid); HOOC.CH2.CH2.S.S.CH2.CH2.COOH
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Tl+        gl  oth/un 30°C 0.10M U          K1=2.75  B2=5.42  1984SGa (48271) 319
By polarography, B2=5.40
*****
C6H12O2S          HL          CAS 20600-61-7 (4375)
(Butylthio)ethanoic acid; CH3.(CH2)3.S.CH2.COOH
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
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Tl+ vlt alc/w 30°C 50% U T H K1=1.25 B2=1.62 1976SSg (49446) 320
B3=2.41

Medium: 50% EtOH, 0.1 M. At 40 C: K1=1.23, B2=1.60, B3=2.40

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

Tl+ vlt NaClO4 30°C 0.10M C T H 1983Sdb (50838) 321

K(Tl+HL)=1.64

K(Tl+2HL)=3.07

Method: polarography. Medium pH 8.0. At 40 C, K(Tl+HL)=1.55,
K(Tl+2HL)=3.01. DH(Tl+HL)=-14.6 kJ mol⁻¹, DH(Tl+2HL)=-10.7.

C6H15O2PS2 HL (2059)
O,O'-Dipropyl dithiophosphoric acid; (C3H7O)2P(S)SH

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

Tl+ sp alc/w 25°C 100% U I K1=4.63 1979Sjd (51491) 322

Medium: = methanol; log K1 in other solvents: acetonitrile 4.35,
dioxan 5.16, tetrahydrofuran 6.38

C7H5N04 H2L Dipicolinic aci CAS 449-83-2 (418)
2,6-Pyridinedicarboxylic acid; C5H3N.(COOH)2

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

Tl+ vlt NaClO4 25°C 0.5M C TI K1=2.33 1983PBa (52813) 323

Method: polarography. Also data for 15 C and 10% MeOH/H2O.

C7H5O3Br HL CAS 85-55-4 (1194)
5-Bromosalicylic acid; Br.C6H3(OH).COOH

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

Tl+ gl alc/w 30°C 50% M K1=8.28 B2=13.48 1978KDb (53311) 324

Medium: 50% v/v EtOH/H2O, 0.10 M NaClO4.

C7H5O3Cl H2L CAS 321-14-2 (1113)
5-Chlorosalicylic acid; Cl.C6H3(OH).COOH

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

Tl+ gl alc/w 30°C 50% M K1=8.55 B2=13.70 1978KDb (53347) 325

Medium: 50% v/v EtOH/H2O, 0.10 M NaClO4.

C7H5O3I H2L CAS 119-30-2 (1114)
2-Hydroxy-5-iodobenzoic acid, 5-Iodosalicylic acid; I.C6H3(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	gl	alc/w	30°C	50%	M		K1=8.00 B2=13.00	1978KDb (53363)	326
Medium: 50% v/v EtOH/H2O, 0.10 M NaClO4.									

C7H6O2S		H2L			Thiosalicylic		CAS 147-93-3	(236)	
2-Mercaptobenzoic acid; HS.C6H4.COOH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	gl	alc/w	25°C	50%	U		K1=4.68	1971RFa (53919)	327
Tl+	gl	alc/w	17°C	50%	U		K1=3.66	1970RBc (53920)	328
Medium: 50% EtOH, 0.05 M NaClO4									

C7H6O3		H2L			Salicylic acid		CAS 69-72-7	(14)	
2-Hydroxybenzoic acid, Salicylic acid; HO.C6H4.COOH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	gl	alc/w	17°C	50%	U		K1=3.90	1970RBc (54313)	329
Medium: 50% EtOH, 0.05 M NaClO4									
Tl+	con	oth/un	28°C	?	U		B2=5.32	1967SBe (54314)	330

C7H6O4		H3L			Protocatechuic		CAS 99-50-3	(875)	
3,4-Dihydroxybenzoic acid; C6H3(OH)2.COOH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	con	oth/un	28°C	?	U			1964SBc (54704)	331
K(Tl+HL)=2.38(?)									

C7H6O5		H4L			Gallic acid		CAS 149-91-7	(446)	
3,4,5-Trihydroxybenzoic acid; C6H2(OH)3.COOH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	con	oth/un	28°C	?	U			1964SBc (54767)	332
K(Tl+H2L)=2.55(?)									

C7H6O6S		H3L					CAS 5965-83-3	(399)	
5-Sulfosalicylic acid, 2-Hydroxy-5-sulfobenzoic; HO3S.C6H3(OH).COOH									
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+	con	oth/un	25°C	0.01M	U			1962SSb (55058)	333
K(Tl+HL=TlL+H)=2.38(?)									

C7H13NO3S H2L CAS 59-53-0 (1269)
N-Acetyl-penicillamine; CH3.CO.NH.CH(COOH)C(CH3)2SH

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

Tl+ gl NaCl 37°C 0.15M C K1=2.45 1989BCa (57493) 334

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

Tl+ dis oth/un ? ? U K1=0.65 1969KKf (58687) 335

C8H9NO2S HL CAS 6310-11-8 (4576)
3-Mercaptoacetamidophenol; HS.CH2.CO.NH.C6H4.OH

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

Tl+ gl oth/un 17°C ? U K1=3.46 1973Kpd (60384) 336

Tl+ oth alc/w 20°C 50% U K1=3.45 1972KPe (60385) 337
Medium: 50% v/v EtOH, 0.1 M NaClO4

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

Tl+ cal R4N.X 20°C 0.1M C 1976ANb (60659) 338
DH1= -24.2 kJ/mol

in Me4NCl

Tl+ gl KNO3 39°C 0.10M U TIH K1=5.33 1963IFb (60660) 339
K1=5.99(20 C),5.76(27 C),5.41(34 C). DH(K1)=-64.4 kJ mol⁻¹, DS=104 J K⁻¹ m⁻¹
At I=0 corr:K1=6.70(20 C)

C8H11NO8 H4L CAS 24868-49-3 (2572)
2-Amino(N,N-diethanoic)-1,4-butanedioic acid;HOOCCH(N(CH2COOH)2)CH2COOH

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

Tl+ gl KNO3 25°C 0.1M U K1=4.38 B2= 6.11 2005SNa (61187) 340
K(Tl+HL)=3.01

C8H12N2O8 H4L CAS 35039-85-1 (4537)
1,2-Diaminoethane-N,N'-dimalonic acid; (HOOC)2.CH.NH.CH2.CH2.NH.CH(COOH)2

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

Tl+ vlt KNO3 25°C 0.10M U K1=3.75 1973GSd (61527) 341
K(Tl+HL)=2.48

Tl+ gl KNO3 25°C 0.10M U K1=3.80 1972KGc (61528) 342
K(Tl+HL)=2.22
B(Tl2L)=1.0

C8H12O4 H2L CAS 1687-30-5 (3805)
Cyclohexane-1,2-dicarboxylic acid; C6H10(COOH)2

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

Tl+ con oth/un 28°C ? U K1=1.74 1966SBa (61703) 343

C8H14O2S H2L (6038)
Cyclohexylthioglycolic acid; C6H11.CH(SH)COOH

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

Tl+ vlt KNO3 20°C 0.50M U T H K1=1.73 B2=3.176 1987GRb (62062) 344
At 30 C: K1=1.77, B2=3.342. At 40 C: K1=1.87, B2=3.398. DH(K1)=6.8 kJ mol⁻¹
DS=57. DH(B2)=29.3; DS=159.

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

Tl+ vlt R4N.X 25°C 0.2M C K1=9.1 1999BBc (62730) 345
Medium: 0.2 M Bu4NPF6.

Tl+ con non-aq 25°C 100% C I K1=3.12 1993JHa (62731) 346
Medium: acetone. Data for acetonitrile and DMF media.

Tl+ ISE non-aq 25°C 100% U K1=3.71 1982MDa (62732) 347
Medium: propylene carbonate

C8H19O2PS2 HL CAS 2253-44-3 (2060)
O,O'-Dibutyl dithiophosphoric acid; (C4H9O)2P(S)SH

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

Tl+ sp alc/w 25°C 100% U K1=4.67 1979SJD (63160) 348

C9H7NO HL Oxine CAS 148-24-3 (504)
8-Hydroxyquinoline (8-quinolinol);

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

Tl+ dis oth/un ? ? U K1=2.34 1969KKF (64360) 349

2,2'-Bipyridine; (C5H4N)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	vlt	NaNO3	25°C	1.0M	C	I		K1=2.50	1983AMa (69655)	356
Method: polarography. Medium pH 8.0. Also values for 50% DMF/H2O (K1=2.63), EtOH/H2O (2.70), dioxane/H2O (2.92), ethyl acetate/H2O (2.75).										

C10H11NO5		H3L						CAS 100844-86-8	(2108)	
N-(2-Hydroxyphenyl)iminodiethanoic acid; HO.C6H4.N(CH2.COOH)2										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	gl	KNO3	20°C	0.10M	U			K1=4.79 K(Tl+HL)=2.34	1963IFb (71048)	357

C10H12N2O4		H2L						CAS 16598-05-3	(967)	
2-Pyridylmethyliminodiethanoic acid; C5H4N.CH2.N(CH2.COOH)2										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	gl	KNO3	20°C	0.10M	U			K1=3.84	1963IFc (71277)	358

C10H13N3O7		H3L						(3912)		
1,3-Dimethyluramil-N,N-diethanoic acid;										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	gl	R4N.X	20°C	0.10M	U			K1=5.73	1963IFb (71809)	359
Medium: Me4NNO3										

C10H15N5O10P2		H3L			ADP			CAS 20398-34-9	(2181)	
Adenosine-5'-diphosphoric acid;										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	gl	R4N.X	25°C	0.10M	C		T	K1=1.7	1991SMa (73019)	360
IUPAC evaluation										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	sp	NaClO4	25°C	0.15M	U			K1=1.32	1971MMg (73020)	361

C10H16N2O8		H4L			EDDS			CAS 52759-67-8	(1100)	
1,2-Diaminoethane-N,N'-di-1,4-butanedioic acid; (CH2.NH.CH(COOH)CH2.COOH)2										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	vlt	KNO3	25°C	0.10M	U			K1=3.30 K(Tl+HL)=2.33	1973GKc (73188)	362
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	oth	KNO3	25°C	0.10M	U			K1=3.26	1972KGc (73189)	363

K(Tl+HL)=2.14

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
Tl+	nmr	NaClO4	25°C	1.00M	C	M		K(TlL+CN)=8.72 K(TlL+SCN)=2.70	1992BGa (74232)	364
Tl+	cal	KN03	20°C	0.1M	C			DH1= -36.6 kJ/mol	1976ANb (74233)	365
Tl+	sp	NaClO4	25°C	0.15M	U			K1>5	1971MMg (74234)	366
Tl+	ix	oth/un	?	?	U			K1=6.11	1969KKf (74235)	367
Tl+	gl	KN03	20°C	0.10M	U		T	K1=6.53	1967ABc (74236)	368
Tl+	gl	R4N.X	20°C	0.10M	U		T	K1=6.55 K(Tl+HL)=2.06	1963IFb (74237)	369

Medium: Me4NNO3

C10H16N5O13P3 H4L ATP CAS 56-65-5 (403)
Adenosine-5'-triphosphoric acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	gl	R4N.X	25°C	0.10M	C		T	K1=2.5	1991SMa (74832)	370
IUPAC evaluation										
Tl+	gl	NaClO4	25°C	0.15M	U			K1=1.99	1971MMg (74833)	371

C10H17N04 H2L CAS 2848-06-8 (3916)
N-(Cyclohexyl)iminodiethanoic acid; C6H11.N(CH2.COOH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	gl	KN03	20°C	0.10M	U			K1=3.40	1963IFb (74978)	372

C10H17N05 H2L CAS 6243-06-7 (3326) N-(2-Hydroxycyclohexyl)iminodiethanoic acid; HO.C6H10.N(CH2.COOH)2										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	gl	KN03	20°C	0.10M	U			K1=3.07	1963IFb (74992)	373

C10H17N05 H2L (3917)										

N-(Tetrahydropyran-2-ylmethyl)iminodiethanoic acid;

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

Tl+ gl KNO3 20°C 0.10M U K1=4.06 1963IFa (75007) 374

C10H20O5 L 15-Crown-5 CAS 33100-27-5 (576)
1,4,7,10,13-Pentaoxacyclopentadecane; cyclo(-(O.CH2.CH2)5-)

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

Tl+ con mixed 25°C 90% C TIH K1=6.14 1998MTa (76138) 375
Medium: 90% CH3CN/H2O. Data for 20-35 C. DH(K1)=23.2 kJ mol-1, DS(K1)=39.8
J K-1 mol-1. In 50% CH3CN/H2O, K1=4.99, DH(K1)=31.1, DS(K1)=8.8.

Tl+ sp non-aq 20°C 100% C K1=3.91 1993PSc (76139) 376
Method: spectrofluorescence. Medium: MeOH.

Tl+ cal non-aq 25°C 100% C H K1=3.31 1986ICa (76140) 377
Medium: MeOH. DH(K1)=-36.4 kJ mol-1, DS(K1)=-60 J K-1 mol-1.

Tl+ vlt KNO3 25°C 0.10M C K1=2.63 1985KTb (76141) 378
Method: d.c. polarography. Medium: 0.10 M HNO3.
By a.c. polarography, K1=2.72

Tl+ ISE non-aq 25°C 100% U K1=5.29 B2=6.74 1982MDa (76142) 379
Medium: propylene carbonate

Tl+ oth oth/un 25°C ? U K1=1.23 1977RLa (76143) 380
Method: ultrasound absorption

Tl+ cal oth/un 25°C 0.10M U H T K1=1.23 1976ITb (76144) 381
DH=-16.8 kJ mol-1.

C10H22N2O3 L Cryptand 2,1 CAS 31249-95-3 (835)
4,7,13-Trioxa-1,10-diazacyclopentadecane (Trioxa(2,1)cryptand);

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

Tl+ gl R4N.X 25°C 0.05M C K1=2.2 1997BCc (76342) 382
Medium: 0.05 M Me4NClO4

Tl+ sp non-aq 20°C 100% C K1=3.56 1993PSc (76343) 383
Method: spectrofluorescence. Medium: MeOH.

C10H22O5 L Tetraglyme CAS 143-24-8 (121)
2,5,8,11,14-Pentaoxapentadecane; (CH3.O.CH2.CH2.O.CH2.CH2.)20

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

Tl+ con alc/w 25°C 100% U K1=1.57 1975CJa (76476) 384
Medium: MeOH

C10H23O2PS2 HL CAS 2253-54-5 (2061)

O,O'-Dipentyl dithiophosphoric acid; (C5H11O)2P(S)SH

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

Tl+ sp alc/w 25°C 100% U K1=4.61 1979Sjd (76536) 385

C10H24N4 L Cyclam CAS 295-37-4 (8)

1,4,8,11-Tetraazacyclotetradecane; cyclo(-(HN.CH2.CH2.NH.(CH2)3)2-)

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

Tl+ vlt R4N.X 25°C 0.2M U K1=12.3 1999BBc (76675) 386

Medium: 0.2 M Bu4NPF6

C11H11NO6 H3L CAS 1147-65-5 (425)

N-(2'-Carboxyphenyl)iminodiethanoic acid; HOOC.C6H4.N(CH2.COOH)2

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

Tl+ gl R4N.X 20°C 0.10M U K1=2.93 1963IFb (77838) 387

Medium: Me4NNO3

C11H13NO5 H2L CAS 4596-54-7 (3945)

N-(2'-Methoxyphenyl)iminodiethanoic acid; CH3O.C6H4.N(CH2.COOH)2

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

Tl+ gl R4N.X 20°C 0.10M U K1=2.46 1963IFb (78603) 388

Medium: Me4NNO3

C11H18N2O8 H4L CAS 4408-81-5 (923)

1,3-Diaminopropane-N,N,N',N'-tetraethanoic acid; ((HOOC.CH2)2N.CH2.)2.CH2

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

Tl+ gl KNO3 20°C 0.10M U K1=3.90 1967ABc (79472) 389

K(Tl+HL)=2.7

C11H18N2O9 H4L CAS 668-21-1 (2562)

2-Hydroxy-1,3-diaminopropane-N,N'-di(1,4-butanedioic) acid

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

Tl+ EMF KNO3 25°C 0.10M U K1=3.12 1976DGc (79606) 390

K(Tl+HL)=1.95

K(Tl+TlL)=1.58

 C11H22O5 L 16-Crown-5 CAS 55477-28-8 (1592)
 1,4,7,10,13-Pentaoxacyclohexadecane; cyclo(-(O.CH2.CH2)5.CH2.CH2-)

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

 Tl+ con none 25°C 0.0 C K1=0.73 1991TKa (79876) 391
 Self medium (ca. 0.008M).

 Tl+ dis none 25°C 0.0 C M K(Tl+A=TlAL(org))=2.22 1989TKc (79877) 392

Method: extraction of metal picrate/L from H2O into benzene.

K(Tl+HA(org)+L(org)=TlAL(org)+H)=0.96. HA is picric acid.

 C12H20N2O8 H4L CAS 40623-42-5 (1101)
 1,2-Diaminoethane-N,N'-di(2-pentane-1,5-dioic acid); (CH2NHCH(COOH)CH2CH2COOH)2

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

 Tl+ vlt KNO3 25°C 0.10M U K1=2.40 1973GKc (82102) 393
 K(Tl+HL)=1.80

 Tl+ gl KNO3 25°C 0.10M U K1=2.20 1972KGc (82103) 394
 K(Tl+HL)=1.66

 C12H20N2O8S H4L TEDTA CAS 923-74-0 (3394)
 2,2'-Thiobis(ethyliminodiethanoic acid); S(CH2.CH2.N(CH2.COOH)2)2

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

 Tl+ gl KNO3 20°C 0.10M U K1=4.47 1967ABc (82477) 395
 K(Tl+HL)=3.85

 C12H20N2O9 H4L EEDTA CAS 923-73-9 (2112)
 Oxa-bis(ethyleneimino)diethanoic acid; ((HOOC.CH2)2N.CH2.CH2)2O

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

 Tl+ gl KNO3 20°C 0.10M U K1=4.47 1967ABc (82569) 396
 K(Tl+HL)=4.0

 C12H24N2O6 L CAS 57721-99-0 (2508)
 1,14-Diacetamido-3,6,9,12-tetraoxatetradecane; (CH2.O.CH2.CH2.O.CH2.CH2.CO.NH2)2

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

 Tl+ con alc/w 25°C 100% U K1=1.35 1975CJa (83054) 397
 Medium: MeOH

 C12H24O4S2 L CAS 296-39-9 (4938)

1,4,10,13-Tetraoxa-7,16-dithiacyclooctadecane;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	nmr	non-aq	25°C	100%	U	M		K(TlClO4+L) > 5	1981RPa (83144)	398
Medium: MeNO2. K(TlClO4+L)=0 in DMSO; 1.24 in DMF; 2.98 in acetone; >5 in MeCN; 0.93 in H2O										

C12H24O6	L	18-Crown-6						CAS 17455-13-9 (577)		
1,4,7,10,13,16-Hexaoxacyclooctadecane;										
Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	ISE	alc/w	25°C	100%	C	IH R		K1=5.27	2003ADa (83651)	399
IUPAC Recommended. Medium: 0-0.1 M various. DH(K1)=-44 kJ mol-1										
In H2O: K1=2.2, DH(K1)=-20. In PC: K1=7.13										
Tl+	con	non-aq	25°C	25%	C	TIH		K1=3.98	2003RZa (83652)	400
Medium: 25 mol % MeOH/benzonitrile. Data for 15-55 C. DH(K1)=23 kJ mol-1										
DS(K1)=155 J K mol-1. Data for 40, 50 and 75 mol %										
Tl+	con	non-aq	25°C	100%	C	T H		K1=3.82	2001SKc (83653)	401
Medium: DMF. Data for 15-45 C. DH(K1)=-27.2 kJ mol-1,										
DS(K1)=-18 J K-1 mol-1. Also data for 40-80% w/w DMF/acetonitrile.										
Tl+	vlt	mixed	20°C	0.02M	U	I		K1=4.75	2000RCb (83654)	402
K1=1.71 in 100%H2O										
Medium: 0.025 M Et4NCl in 75.78 %mass CH3CN in H2O										
For 0.025 M Et4NCl in 79.17% mass DMFA/H2O K1=3.06										
Tl+	vlt	mixed	20°C	78%	U			K1=1.31	2000RCb (83655)	403
K1=1.71 in 100% H2O										
Medium:0.025 M Et4NCl in 34.78%(mass) propanol in H2O.										
for 0.025 M Et4NCl in 34.21% CH3CN in H2O K1=2.52;for 38.8%DMFA K1=1.78										
Tl+	vlt	R4N.X	20°C	0.02M	C	I		K1=1.71	2000RCc (83656)	404
Method: SW polarography. Medium: 0.025 M Et4NCl. By DPP, K1<1.										
Data for 0-76% w/w PrOH/H2O, 0-76% w/w AN/H2O and 0-79% w/w DMF/H2O.										
Tl+	cal	none	50°C	0.00	C	T H		K1=2.01	1995WIa (83657)	405
Method: isothermal flow calorimetry. Measurements at 1.52 MPa. Data for										
55-125 C. DH(K1)=-19.4 kJ mol-1, DS(K1)=-22 J K-1 mol-1.										
Tl+	con	non-aq	25°C	100%	C	I		K1=4.99	1993JHa (83658)	406
Medium: acetone. Data for acetonitrile and DMF media.										
Tl+	sp	non-aq	20°C	100%	C			K1=4.95	1993PSc (83659)	407
Method: spectrofluorescence. Medium: MeOH.										

Tl+ vlt non-aq 23°C 100% U K1=5.00 1992LLa (83660) 408
Several mixtures of MeCN/H2O, acetone/H2O, THF/H2O and DMSO/H2O

Tl+ ix none 25°C 0.0 U K1=2.0 1991BMb (83661) 409

Tl+ vlt non-aq 23°C 100% U I K1=4.90 1991LKa (83662) 410
Medium: acetone; 0.05 M Bu4NClO4. Also in other solvents

Tl+ vlt R4N.X 22°C 0.03M C I K1=<2 1991PSa (83663) 411
Medium: 0.025 M Et4NClO4. Method: differential pulse polarography. Data
for 15-75% w/w CH3CN/H2O, 0.025 M Et4NClO4.

Tl+ vlt non-aq 25°C 100% C I K1=7.73 1991SSb (83664) 412
Method: polarography. Medium: acetonitrile, 0.05 M Et4NClO4.
In DMF, K1=3.65.

Tl+ vlt alc/w 25°C 100% U K1=5.55 1988Lfa (83665) 413
Medium: MeOH. In Me2NCHO, K1=3.42

Tl+ cal non-aq 25°C 100% C H K1=5.34 1986ICa (83666) 414
Medium: MeOH. DH(K1)=-45.65 kJ mol-1, DS(K1)=-50.7 J K-1 mol-1.

Tl+ vlt KNO3 25°C 0.10M C K1=2.98 1985KTb (83667) 415
Method: d.c. polarography. Medium: 0.10 M HNO3.
By a.c. polarography, K1=3.06

Tl+ oth alc/w 25°C 100% U K1=5.04 1980WJa (83668) 416
Method: fluorimetry in CH3OH

Tl+ cal oth/un 25°C 0.10M U H T K1=2.27 1976ITb (83669) 417
DH=-18.6 kJ mol-1.

Tl+ vlt R4N.X 25°C 0.10M C H T K1=2.2 1976KKf (83670) 418
DH(K1)=-22.6 kJ mol-1, DS=-34 J K-1 mol-1

C12H25NO5 L CAS 33941-15-0 (4939)

1,4,7,10,13-Pentaoxa-16-azacyclooctadecane;

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

Tl+ con mixed 25°C 40% C TIH K1=5.97 2003KSc (83713) 419
Medium: 40% w/w dimethylformamide/AN. Data for 15-45 C.
DH(K1)=-29.7 kJ mol-1, DS=14.5 J K-1 mol-1. Also data for 60-100% DMF/AN

Tl+ vlt non-aq 22°C 100% C I K1=3.3 2001MRa (83714) 420
Medium: DMF, 0.025 M Et4NClO4. Method: differential pulse polarography.
Data for binary mixtures of DMF with MeOH, nitromethane, PrOH, AN.

C12H26N2O4 L CAS 41775-36-4 (2470)

1,4,7,13-Tetraoxa-10,16-diazacyclooctadecane;

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

Tl+ con non-aq 25°C 100% C I K1=>6.5 1993JHa (83730) 421
Medium: acetone. Data for acetonitrile and DMF media.

C12H26N2O4 L Cryptand 2,2 CAS 23978-55-4 (925)
4,7,13,16-Tetraoxa-1,10-diazacyclooctadecane;

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

Tl+ con non-aq 25°C 100% C T H K1=4.00 2001SKc (83905) 422
Medium: DMF. Data for 15-45 C. DH(K1)=-14 kJ mol⁻¹,
DS(K1)=29 J K⁻¹ mol⁻¹. Also data for 40-80% w/w DMF/acetonitrile.

Tl+ gl R4N.X 25°C 0.05M C K1=2.3 1997BCc (83906) 423
Medium: 0.05 M Me4NClO4

Tl+ sp non-aq 20°C 100% C K1=3.69 1993PSc (83907) 424
Method: spectrofluorescence. Medium: MeOH.

Tl+ vlt R4N.X 22°C 0.03M C I K1=2.19 1991PSa (83908) 425
Medium: 0.025 M Et4NClO4. Method: differential pulse polarography. Data
for 15-75% w/w CH3CN/H2O, 0.025 M Et4NClO4.

Tl+ ISE non-aq 25°C 100% U I K1=7.54 1983CFa (83909) 426
Medium: CH3NO2. K1=6.81 in acetone; 3.41 in DMF; K1=2.38 in DMSO; 7.94 in
MeCN; 3.54 in MeOH; 7.05 in propylene carbonate

Tl+ gl R4N.X 24°C 0.10M C K1=1.1 1975ANa (83910) 427

C12H26O6 L Pentaglyme CAS 1191-87-3 (2498)
2,5,8,11,14,17-Hexaoxaoctadecane; (CH3.0.CH2.CH2.0.CH2.CH2.0.CH2.)2

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

Tl+ con alc/w 25°C 100% U K1=1.90 1975CJa (84025) 428
Medium: MeOH

C12H27O2PS2 HL CAS 78-64-8 (2062)
O,O'-Dihexyl dithiophosphoric acid; (C6H13O)2P(S)SH

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

Tl+ sp alc/w 25°C 100% U K1=4.64 1979Sjd (84114) 429

C12H30N6 L CAS 296-35-5 (143)
1,4,7,10,13,16-Hexaazacyclooctadecane; cyclo(-(NH.CH2.CH2)6-)

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

Tl+ con non-aq 25°C 100% C T H K1=5.48 2001SKc (84358) 430
Medium: DMF. Data for 15-45 C. DH(K1)=-20 kJ mol⁻¹,
DS(K1)=39 J K⁻¹ mol⁻¹. Also data for 40-80% w/w DMF/acetonitrile.

C13H22N2O8 H4L CAS 1798-14-7 (921)
(Pentamethylenedinitrilo)tetraethanoic acid; ((HOOC.CH2)2N.CH2.CH2)2CH2

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

Tl+ gl KNO3 20°C 0.10M U K1=3.73 1967ABc (86208) 431
K(Tl+HL)=2.88

C13H26O5 L (6410)
15,15-Dimethyl-1,4,7,10,13-pentaoxacyclohexadecane;

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

Tl+ con none 25°C 0.0 C K1=0.55 2001KMc (86489) 432

C13H26O6 L 19-Crown-6 CAS 55471-27-7 (8943)
1,4,7,10,13,16-Hexaoxacyclononadecane;

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

Tl+ con oth/un 25°C dil C K1=1.08 1999TMa (86506) 433
Self medium (TlNO3).

C14H20O5 L Benzo15-crown-5 CAS 14098-44-3 (608)
2,3-Benzo-1,4,7,10,13-pentaoxacyclopentadeca-2-ene;

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

Tl+ vlt non-aq 20°C 100% C K1=1.4 19990Ba (88380) 434
Medium: DMF, 0.10 M Bu4N[BPh4].

Tl+ con non-aq 25°C 100% C I K1=2.90 1993JHa (88381) 435
Medium: acetone. Data for acetonitrile and DMF media.

Tl+ sp non-aq 20°C 100% C K1=3.65 1993PSc (88382) 436
Method: spectrofluorescence. Medium: MeOH.

Tl+ vlt non-aq 25°C 100% C I K1=5.41 1991SSb (88383) 437
Method: polarography. Medium: acetonitrile, 0.05 M Et4NClO4.
In DMF, K1=<2.5.

Tl+ vlt alc/w 25°C 100% U I K1=3.05 1989Lkb (88384) 438
Medium: 0.05 M (C4H9)4NO4 in methanol. Data also in ethanol, propanol
butanol, 2-methylpropanol, 4-hydroxy-4-methyl-2-pentanone and others

Tl+ vlt KNO3 25°C 0.10M C K1=2.27 1985KTb (88385) 439
 Method: d.c. polarography. Medium: 0.10 M HNO3.
 By a.c. polarography, K1=2.30

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
Tl+	gl	KNO3	20°C	0.10M	U		K1=6.7 K(Tl+HL)=1.7 K(TlL+H)=7.3	1979ABa (88800)	440

Tl+	vlt	NaClO4	25°C	0.30M	U		K1=3.85 K(TlL+H)=11.29	1969KTc (88801)	441
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Tl+	gl	KNO3	20°C	0.10M	U		K1=6.7	1967ABc (88802)	442
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Tl+	vlt	KNO3	30°C	0.10M	U		K1=5.84	1967SSe (88803)	443
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Tl+	vlt	KNO3	25°C	0.50M	U		K1=5.33	1966Pac (88804)	444
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Tl+	gl	alc/w	25°C	10%	U		K1=5.58	1966Pac (88805)	445
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Medium: 10% MeOH, 0.5 M KNO3

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
Tl+	gl	KNO3	20°C	0.10M	U		K1=5.97 K(Tl+HL)=4.2 K(TlL+H)=8.8	1979ABa (89414)	446

Tl+	vlt	NaClO4	25°C	0.40M	U		K1=5.45 K(TlL+H)=8.81	1968KNa (89415)	447
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By d.c. polarography. By a.c.: K1=5.53, K(TlL+H)=8.78

Tl+	gl	KNO3	20°C	0.10M	U		K1=5.97 K(Tl+HL)=4.2	1967ABc (89416)	448
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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
Tl+	vlt	NaClO4	25°C	0.30M	U		K1=4.0 K(TlL+H)=9.09	1969KTc (89950)	449

Tl+	gl	KNO3	25°C	0.50M	U		K1=5.63	1966Pac (89951)	450
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Medium: MeOH

C14H28O7 L 21-Crown-7 CAS 33089-36-0 (2264)
1,4,7,10,13,16,19-Heptaoxacycloheicosane;

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

Tl+ cal non-aq 25°C 100% C H K1=4.55 1986ICa (90542) 461
Medium: MeOH. DH(K1)=-40.1 kJ mol⁻¹, DS(K1)=-47.3 J K⁻¹ mol⁻¹.

C14H30O7 L CAS 1072-40-8 (2499)
2,5,8,11,14,17,20-Heptaaxaheneicosane; CH3.O.(CH2.CH2.O)6.CH3

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

Tl+ con alc/w 25°C 100% U K1=2.30 1975CJa (90713) 462
Medium: MeOH

C15H10N3OCl HL CAS 16195-35-0 (27)
5-(4-Chlorophenylazo)-8-hydroxyquinoline; Cl.C6H4.N:N.C9H5N.OH

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

Tl+ sp oth/un 25°C 0.10M U B2=7.81 1978KIa (90949) 463

C15H11N3O HL CAS 4312-09-8 (989)
5-Phenylazo-8-hydroxyquinoline; C6H5.N:N.C9H5N.OH

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

Tl+ sp oth/un 25°C 0.10M U B2=8.03 1978KIa (91271) 464

C15H30N2O3 L CAS 72640-82-5 (6040)
4,7,13-Trioxa-1,10-diazabicyclo[8.5.5]eicosane;

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

Tl+ EMF non-aq 25°C 100% U K1=2.18 1993LRa (92528) 465

Medium: triethylphosphate, 0.05 M Et4NC104

Tl+ gl R4N.X 25°C 0.05M U H K1=2.42 1991LRc (92529) 466

DH(K1)=-61.2 kJ mol⁻¹, DS=13.6 J K⁻¹ mol⁻¹

C16H24O6 L Benzo18-crown-6 CAS 14098-24-9 (513)
2,3-Benzo-1,4,7,10,13,16-hexaoxacyclooctadeca-2-ene;

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

Tl+ con non-aq 25°C 100% C T H K1=2.76 2001SKc (94467) 467

Medium: DMF. Data for 15-35 C. DH(K1)=-25 kJ mol⁻¹,

DS(K1)=-30 J K-1 mol-1. Also data for 40-80% w/w DMF/acetonitrile.

Tl+ con none 20°C 0.0 C T H K1=1.71 1990TAa (94468) 468
Data for 15-32 C. At 15 C, K1=1.75; at 30 C, K1=1.66
At 25 C, DH(K1)=-9.7 kJ mol-1, DS(K1)=-0.13 J K-1 mol-1.

Tl+ con none 25°C 0.0 U K1=1.68 1989TKa (94469) 469

Tl+ cal non-aq 25°C 100% C H K1=4.37 1986ICa (94470) 470
Medium: MeOH. DH(K1)=-39.1 kJ mol-1, DS(K1)=-47.7 J K-1 mol-1.

C16H24O14 H4L CAS 61696-54-6 (6104)

1,4,7,10,13,16-Hexaoxacyclooctadeca-2,3,11,12-tetracarboxylic acid;

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

Tl+ gl R4N.X 25°C 0.10M M K1=3.9 1991FGb (94503) 471
B(TlHL)=8.3

Medium: 0.10 M Et4NNO3.

C16H25NO4 L (7444)

1-Aza-4,7,10,13-tetraoxa-1-phenyl-cyclopentadecane;

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

Tl+ con mixed 25°C 90% C TIH K1=4.05 1998MTa (94521) 472
Medium: 90% CH3CN/H2O. Data for 20-35 C. DH(K1)=18.6 kJ mol-1, DS(K1)=14.8
J K-1 mol-1. In 50% CH3CN/H2O, K1=3.58, DH(K1)=7.9, DS(K1)=41.9.

C16H26N2O12 H4L (6659)

1,4,10,13-Tetraoxa-7,16-diaza-2,3,11,12-tetracarboxycyclooctadecane;

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

Tl+ gl R4N.X 25°C 0.10M U K1=3.7 1990AFa (94593) 473
B(TlHL)=13.3

C16H26N2O12 H4L CAS 130190-52-2 (6660)

1,4,10,13-Tetraoxa-7,16-diaza-2,3,7,16-tetracarboxycyclooctadecane;

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

Tl+ gl R4N.X 25°C 0.10M U K1=5.4 1990AFa (94607) 474
B(TlHL)=14.2

C16H26O6 L CAS 57721-93-4 (2502)

2,5,8,11,14,17-Hexaoxa-9,10-benzo-octadeca-9-ene; C6H4(O.(CH2.CH2.O)2.CH3)2

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

Tl+ con alc/w 25°C 100% U K1=1.73 1975CJa (94634) 475
Medium: MeOH

C16H32N2O5 L Cryptand 2,2,1 CAS 31364-42-8 (837)
1,10-Diaza-4,7,13,16,21-pentaoxabicyclo[8,8,5]tricosane (2,2,1);

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

Tl+ gl R4N.X 25°C 0.05M C K1=7.0 1997BCc (95298) 476
Medium: 0.05 M Me4NClO4

Tl+ sp non-aq 20°C 100% C K1=>6 1993PSc (95299) 477
Method: spectrofluorescence. Medium: MeOH.

Tl+ ISE alc/w 25°C 100% C I K1=10.76 1989CSa (95300) 478
Medium: MeOH. Also in EtOH (11.01).

Tl+ sp non-aq 25°C 100% U K1=11.9 1988CSc (95301) 479
In acetonitrile

Tl+ ISE non-aq 25°C 100% C I K1=6.80 1985CKa (95302) 480
Medium: DMSO. In DMF K1=8.61; in propylenecarbonate K1=12.13

Tl+ kin R4N.X 25°C 0.10M U K1=6.8 1980GBa (95303) 481

C16H34N4O2 L CAS 60598-04-1 (1530)
4,7-Dimethyl-1,4,7,10-tetraaza-13,18-dioxabicyclo[8,5,5]eicosane;

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

Tl+ gl R4N.X 25°C 0.10M U K1=3.9 1978LMa (95473) 482

C16H34O6 L CAS 57721-92-3 (2501)
2,5,8,15,18,21-Hexaoxadocosane; CH3.0.(CH2.CH2.0)2.(CH2)6.0.(CH2.CH2.0)2.CH3

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

Tl+ con alc/w 25°C 100% U 1975CJa (95487) 483
Medium: MeOH

C16H34O8 L CAS 1191-91-9 (2500)
2,5,8,11,14,17,20,23-Octaoxatetracosane; CH3.0.(CH2.CH2.0)7.CH3

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

Tl+ con alc/w 25°C 100% U K1=2.55 1975CJa (95496) 484
Medium: MeOH

C16H35O2PS2 HL CAS 83296-49-5 (2063)
0,0'-Dioctyl dithiophosphoric acid; (C8H17O)2P(S)SH


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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Tl+       sp alc/w 25°C 100% U      K1=4.63      1979Sjd (95504) 485
*****
C17H34N2O4          L          CAS 142565-14-8 (6562)
4,7,13,16-Tetraoxa-1,10-diazabicyclo[8.8.5]tricosane;
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Tl+       gl R4N.X 25°C 0.05M C I      K1=4.10      1992Cgb (96752) 486
Medium: Et4NClO4. In MeOH: K1=6.48; in DMF K1=5.05
*****
C18H28O5          L          CAS 15196-73-3 (2359)
2,3-(4'-Dimethylethylbenzo)-1,4,7,10,13-pentaoxacyclopentadeca-2-ene;
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
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Tl+       gl non-aq 25°C 100% U      K1=4.13      B2=6.35      1982MDa (97815) 487
Medium: propylene carbonate
*****
C18H30N4O12       H6L      TTHA          CAS 869-52-3 (694)
Triethylenetetraaminehexaethanoic acid;((HOOC.CH2)2N.CH2.CH2.N(CH2.COOH).CH2)2
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Tl+       vlt NaClO4 25°C 0.50M U      K1=4.91      1977CNa (98097) 488
B(TlHL)=14.64
*****
C18H34O9          L          CAS 57721-61-7 (2510)
3,6,9,12,15-Pentaoxaheptadecane-1,17-dioic acid diethyl ester
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
-----
Tl+       con alc/w 25°C 100% U      K1=1.44      1975CJa (98399) 489
Medium: MeOH
*****
C18H36N2O6          L      Cryptand 2,2,2 CAS 23978-09-8 (514)
1,10-Diaza-4,7,13,16,21,24-hexaoxabicyclo[8.8.8]hexacosane;
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Metal      Mtd Medium Temp Conc Cal Flags Lg K values      Reference ExptNo
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Tl+       vlt non-aq 25°C 100% C I      K1=12.3      1999FKb (98751) 490
Medium: acetonitrile, 0.10 M Et4NClO4. Method: cyclic voltammetry.
Also in: DMF (K1=7.8), DMSO (6.2), MeOH (10.0), acetone (10.3) etc.
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Tl+       gl R4N.X 25°C 0.05M C      K1=6.2      1997BCc (98752) 491
Medium: 0.05 M Me4NClO4
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Tl+       sp non-aq 20°C 100% C      K1=>7      1993PSc (98753) 492
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Method: spectrofluorescence. Medium: MeOH.

Tl+ vlt R4N.X 22°C 0.03M C I K1=6.55 1991PSa (98754) 493
Medium: 0.025 M Et4NClO4. Method: differential pulse polarography. Data
for 15-75% w/w CH3CN/H2O, 0.025 M Et4NClO4.

Tl+ ISE non-aq 25°C 100% U IH K1=12.4 1988CSc (98755) 494
In CH3CN. In CH3CN/water mixtures:mole fraction 0.8, K=10.9; 0.5, K=9.2;
0.3, K=8.4; 0.0, K=6.6

Tl+ ISE a/c/w 25°C 100% C K1=8.06 1985CKa (98756) 495

Tl+ kin R4N.X 25°C 0.10M U K1=6.4 1980GBa (98757) 496

Tl+ EMF non-aq 25°C 100% C I K1=6.2 1979BLb (98758) 497
Method: Tl electrode. Medium: MeOH, 0.05 M Me4NClO4.
Also K1=6.3 (H2O), 6.2 (DMSO), 13.4 (CH3CN).

Tl+ EMF oth/un 25°C 0.05M C I K1=6.4 1978YTa (98759) 498
Method: Tl amalgam electrode. Electrolyte not stated.
In MeOH, 0.05 M: K1=10.1. In DMSO, 0.10 M: K1=6.1

Tl+ gl R4N.X 25°C 0.10M C H K1=5.5 1975ANa (98760) 499
Medium: Me4NNO3. DH(K1)=-55.2 kJ mol⁻¹, DS=-61.9

Tl+ gl R4N.X 25°C 0.05M C K1=6.8 1975LSc (98761) 500

C19H39N3O5 L CAS 60598-00-7 (1537)
4-Methyl-1,4,10-triaza-7,13,16,21,24-pentaoxa-bicyclo[8,8,8]hexacosane;

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

Tl+ gl R4N.X 25°C 0.10M U K1=6.3 1978LMa (99498) 501

C20H24O6 L DiBz-18-Crown-6 CAS 14187-32-7 (604)
2,3:11,12-Dibenzo-1,4,7,10,13,16-hexaoxacyclooctadeca-2,11-diene

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

Tl+ con non-aq 25°C 100% C TIH K1=2.45 2001RKa (100246) 502
Medium: DMF. Data for 15-55 C. Also data for 25-75% mol% DMF/AN.
DH(K1)=-29 kJ mol⁻¹, DS(K1)=-146 J K⁻¹ mol⁻¹.

Tl+ con non-aq 25°C 100% C I K1=4.73 1993JHa (100247) 503
Medium: acetone. Data for acetonitrile and DMF media.

Tl+ sp non-aq 20°C 100% C K1=4.42 1993PSc (100248) 504
Method: spectrofluorescence. Medium: MeOH.

Tl+ vlt non-aq 23°C 100% U K1=4.60 1991LKa (100249) 505

medium: acetone; 0.05 M Bu4NClO4. Also in other solvents

Tl+ vlt non-aq 25°C 100% C I K1=4.78 1991SSb (100250) 506
Method: polarography. Medium: acetonitrile, 0.05 M Et4NClO4.
In DMF, K1=<2.5.

Tl+ vlt alc/w 25°C 100% U K1=3.38 1988LFa (100251) 507
Medium: MeOH, In Me2NCHO, K1=1.96

Tl+ vlt non-aq 25°C 100% U I K1=4.90 1978HKc (100252) 508
Medium: CH3CN, 0.05M Bu4NClO4

Tl+ nmr non-aq 29°C 100% U K1=2.48 1977SZa (100253) 509
Medium: DMF

Tl+ sol none 25°C 0.0 U I K1=1.50 1975SNa (100254) 510

C20H34O8 L (2504)
2,5,8,11,14,17,20,23-Octaoxa-12,13-benzotetracos-12-ene; C6H4(0.(CH2.CH2.0)3.CH3)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	con	alc/w	25°C	100%	U			K1=2.45	1975CJa (100527)	511

Medium: MeOH

C20H36O6 L DiCy-18-crown-6 CAS 16069-36-6 (1653)
2,3:11,12-Dicyclohexyl-1,4,7,10,13,16-hexaoxacyclooctadecane;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	vlt	non-aq	22°C	100%	C	I		K1=3.2	2002RYa (100712)	512

Method: DPP in DMF, 0.025 M Et4NClO4. By conductivity, K1=3.30.
Data for 0-100 mol% DMF/H2O, and MeOH/H2O, AN/H2O and PrOH/H2O mixtures.

Tl+ con non-aq 25°C 100% C TIH K1=3.3 2001RKa (100713) 513
Medium: DMF. Data for 15-55 C. Also data for 25-75% mol% DMF/AN.
DH(K1)=121 kJ mol⁻¹, DS(K1)=339 J K⁻¹ mol⁻¹.

Tl+ con non-aq 25°C 100% C T H K1=3.53 2001SKc (100714) 514
Medium: DMF. Data for 15-45 C. DH(K1)=-28 kJ mol⁻¹,
DS(K1)=-28 J K⁻¹ mol⁻¹. Also data for 40-80% w/w DMF/acetonitrile.

Tl+ con non-aq 25°C 100% C I K1=6.23 1993JHa (100715) 515
Medium: acetone. Data for acetonitrile and DMF media.

Tl+ sp non-aq 20°C 100% C K1=4.67 1993PSc (100716) 516
Method: spectrofluorescence. Medium: MeOH.

Tl+ vlt non-aq 25°C 100% C I K1=7.54 1991SSb (100717) 517
Method: polarography. Medium: acetonitrile, 0.05 M Et4NClO4.

In DMF, K1=3.55.

Tl+ vlt alc/w 25°C 100% U K1=4.95 1988LFa (100718) 518
Medium: MeOH, In Me2NCHO, K1=3.30

Tl+ vlt KNO3 25°C 0.10M C K1=3.20 1985KTb (100719) 519
Method: d.c. polarography. Medium: 0.10 M HNO3.
By a.c. polarography, K1=3.18

Tl+ cal oth/un 25°C 0.10M U H 1976ITb (100720) 520
K1=2.44 (cis-syn-cis isomer)
K1=1.83 (cis-anti-cis isomer)

DH(Syn)=-15.1 and DH(Anti)=-17.9 kJ mol⁻¹.

C20H40N2O4 L (6625)
1,10-Diaza-4,7,13,16-tetraoxabicyclo[8.8.8]hexacosane;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Tl+ gl non-aq 25°C 100% C I K1=6.19 1992LSc (100779) 521
Medium: MeCN, 0.05 M Et4NClO4. In DMF K1=3.1

C20H42N4O4 L CAS 39678-14-3 (1543)
4,7-Dimethyl-1,4,7,10-tetraaza-13,16,21,24-tetraoxa-bicyclohexacosane;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Tl+ gl R4N.X 25°C 0.10M U K1=5.5 1978LMa (100894) 522
K(Tl+HL)=1.9

C20H43O2PS2 HL CAS 2253-89-0 (2064)
0,0'-Didecyl dithiophosphoric acid; (C10H21O)2P(S)SH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Tl+ sp alc/w 25°C 100% U K1=4.64 1979Sjd (100904) 523

C22H28O7 L Dibenzo-21-Cr-7 CAS 14098-41-0 (2876)
2,3:11,12-Dibenzo-1,4,7,10,13,16,19-heptaoxacycloheptacosane-2,11-diene;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
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Tl+ con mixed 25°C 40% C TIH K1=3.29 2003KSc (102060) 524
Medium: 40% w/w dimethylformamide/AN. Data for 15-45 C.
DH(K1)=-48 kJ mol⁻¹, DS(K1)=-101 J K⁻¹ mol⁻¹. Also data for 60-100% DMF/AN

Tl+ con non-aq 25°C 100% C I K1=5.07 1993JHa (102061) 525
Medium: acetone. Data for acetonitrile media.

Tl+ cal non-aq 25°C 100% C H K1=4.03 1986ICa (102062) 526

Medium: MeOH. DH(K1)=-36.9 kJ mol⁻¹, DS(K1)=-46.3 J K⁻¹ mol⁻¹.

C22H30O6 L (2506)
2,5,8,13,16,19-Hexaoxa-9,10:11,12-dibenzoicosa-9,11-diene;
(-C6H4.O.(CH2.CH2.O)2.CH3)2

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

Tl+ con alc/w 25°C 100% U K1=1.13 1975CJa (102136) 527

Medium: MeOH

C22H36N2O6 L Bz-Cryptand 222 CAS 31250-18-7 (2269)
5,6-Benzo-4,7,13,16,21,24-hexaoxa-1,10-diazabicyclo[8:8:8]hexacosane;

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

Tl+ ISE alc/w 25°C 100% C I K1=8.71 1989CSa (102285) 528

Medium: MeOH. Also in water (5.84), EtOH (8.58), propylene carbonate(10.73)
and dimethylformamide (6.79).

Tl+ ISE non-aq 25°C 100% U K1=10.3 1988CSc (102286) 529

In acetonitrile

C22H48N6O2 L CAS 39678-22-3 (1542)
4,7,13,16-Tetramethyl-1,4,7,10,13,16-hexaaza-21,24-dioxabicyclohexacosane;

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

Tl+ gl R4N.X 25°C 0.10M U K1=4.1 1978LMa (102493) 530

K(Tl+HL)=1.9

C23H23NO5 L CAS 218619-58-0 (7808)

Dibenzo-pyridino-18-crown-6;

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

Tl+ vlt non-aq 22°C 100% C I K1=<1 2001MRa (102667) 531

Medium: DMF, 0.025 M Et4NClO4. Method: differential pulse polarography.

Data for binary mixtures of DMF with MeOH, nitromethane, PrOH, AN.

Tl+ EMF alc/w 25°C 100% C T H K1=3.74 2001SZb (102668) 532

Medium: methanol, 0.5 M Bu4NClO4. Method: Ag electrode, using competitive
complexation with Ag+. Data for 5-35 C. DH=-52.0 kJ mol⁻¹, DS=-97

C23H32N2O5 L (7368)

9-(2'-Hydroxy-5'-methylbenzyl)-3,6,12,15-Tetraoxa-9,21-diazabicyclo[15.3.1]heneicosatriene;

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

Tl+ cal alc/w 25°C 100% U T H K1=4.34 1997ZBa (102782) 533
Medium: MeOH. Data also for several similar 5'-substituted ligands

C23H32N2O5 L (7369)
9-(2'-Pyridylmethyl)-3,6,12,15-tetraoxa-19-methyl-21-hydroxy-9-azabicyclo[15.3.1]he
neicosatriene;

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

Tl+ cal alc/w 25°C 100% U H K1=4.45 1997ZBa (102787) 534
Medium: MeOH

C24H32O8 L DiBz-24-Crown-8 CAS 14174-09-5 (580)
2,3:14,15-Dibenzo-1,4,7,10,13,16,19,22-octaoxacyclotetracosane-2,14-diene;

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

Tl+ con non-aq 25°C 100% C I K1=4.90 1993JHa (103180) 535
Medium: acetone. Data for acetonitrile media.

Tl+ cal non-aq 25°C 100% C H K1=3.40 1986ICa (103181) 536
Medium: MeOH. DH(K1)=-30.0 kJ mol⁻¹, DS(K1)=-35.6 J K⁻¹ mol⁻¹.

C24H36O21 H6L CAS 71735-94-9 (7414)
1,4,7,10,13,16,19,22,25-Nonaoxacycloheptacosane-2,3,11,12,20,21-hexacarboxylic
acid;

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

Tl+ gl R4N.X 25°C 0.10M M K1=3.4 1991FGb (103311) 537
B(TlHL)=8.0

Medium: 0.10 M Et4NNO3.

C24H42O10 L (2505)
2,5,8,11,14,17,20,23,26,29-Decaoxa-15,16-benzo-triconta-15-ene;

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

Tl+ con alc/w 25°C 100% U K1=2.80 1975CJa (103401) 538
Medium: MeOH

C25H40O12 L CAS 239470-22-5 (8948)
4'-Carboxybenzo-30-crown-10;

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

Tl+ con non-aq 25°C 100% C T H K1=5.52 1999RGa (103778) 539
Medium: acetonitrile. Data for 5-35 C. DH(K1)=-70.6 kJ mol⁻¹, DS(K1)=
-132 J K⁻¹ mol⁻¹.

C26H36N2O6 L DiBzCryptand222 (746)
5,6,14,15-Dibenzo-4,7,13,16,21,24-hexaoxa-1,10-diazabicyclo[8.8.8]hexacosan-5,14-diene;

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

Tl+ ISE non-aq 25°C 100% U K1=10.2 1988CSc (104148) 540
In acetonitrile

Tl+ ISE alc/w 25°C 100% C I K1=7.9 1985CKa (104149) 541
Medium: MeOH. In propylenecarbonate K1=9.81; in DMF K1=6.14; in DMSO K1=4.58

C26H38N2O4 L CAS 80757-23-9 (2450)
N,N'-Bis(benzyl)-1,10-diaza-4,7,13,16-tetraoxacyclooctadecane;

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

Tl+ con non-aq 25°C 100% C T H K1=3.51 2001SKc (104192) 542
Medium: DMF. Data for 15-35 C. DH(K1)=-44 kJ mol⁻¹,
DS(K1)=-81 J K⁻¹ mol⁻¹. Also data for 40-80% w/w DMF/acetonitrile.

C26H38O8 L (2507)
2,5,8,11,16,19,22,25-Octaoxa-12,13:14,15-dibenzo-hexacosan-12,14-diene;

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

Tl+ con alc/w 25°C 100% U K1=1.81 1975CJa (104221) 543
Medium: MeOH

C28H40O10 L DiBz-30-crown10 CAS 104946-67-0 (1776)
2,3:17,18-Dibenzo-1,4,7,10,13,16,19,22,25,28-decaoxacyclotriacontane-2,17-diene;

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

Tl+ con mixed 25°C 40% C TIH K1=2.89 2003KSc (104914) 544
Medium: 40% w/w dimethylformamide/AN. Data for 15-45 C.
DH(K1)=-47 kJ mol⁻¹, DS(K1)=-101 J K⁻¹ mol⁻¹. Also data for 60-100% DMF/AN

Tl+ con mixed 25°C 40% C TIH K1=3.81 2003KSc (104915) 545
Medium: 40% w/w dimethylformamide/AN. Data for 15-45 C.
DH(K1)=-77 kJ mol⁻¹, DS(K1)=-189 J K⁻¹ mol⁻¹. Also data for 60-100% DMF/AN

Tl+ con non-aq 25°C 100% C I K1=5.39 1993JHa (104916) 546
Medium: acetone. Data for acetonitrile media.

Tl+ sp non-aq 20°C 100% C K1=4.53 1993PSc (104917) 547
Method: spectrofluorescence. Medium: MeOH.

Tl+ con non-aq 25°C 100% U I K1=6.30 1991ASb (104918) 548
Medium: 1,2-dichloroethane. In nitromethane: K1=5.48; in MeCN: K=5.15;

in acetone: K=5.03

Tl+ vlt non-aq 25°C 100% C I K1=5.47 1991SSb (104919) 549
Method: polarography. Medium: acetonitrile, 0.05 M Et4NClO4.
In DMF, K1=<2.5.

Tl+ ISE non-aq 25°C 100% U K1=5.35 1982MDa (104920) 550
Medium: propylene carbonate

C29H40O10 L Bis(15-crown-5) (6879)
Methylene-bis(4'-(2,3-benzo-1,4,7,10,13-pentaoxacyclopentadeca-2-ene));
CH2(C14H19O5)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	cal	alc/w	25°C	80%	U	H		K1=2.04	1990LTa (105140)	551
Medium: 80% v/v MeOH/H2O. DH(K1)=-102.0 kJ mol-1. Also data for a large range of benzo-15-crown-5 dimers with 4'-bridging groups up to 10 carbons. *****										
C30H40N2O4		L						Anthracene-22 (3329)		
6,9,17,20-Tetraoxa-3,12-diaza[14:8](9,10)anthracenophane;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	sp	alc/w	25°C	100%	U			K1=8.52	1989FDa (105282)	552
Medium: MeOH, 0.1 M Bu4NClO4 *****										
C32H44N2O4		L						(6164)		
7,10,17,20-Tetraoxa-4,13-diaza[16:8](9,10)anthracenophane;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	sp	alc/w	25°C	100%	U			K1=7.07	1989FDa (105763)	553
Medium: MeOH, 0.1 M Bu4NClO4 *****										
C34H46O10		L						CAS 210485-26-0 (3146)		
15,31-Diethylhexadecahydroanthra[2,3-b:6,7-b']bis[1,4,7,10,13]pentaoxacyclopentadec in;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	vlt	non-aq	20°C	100%	C			K1=2.8	19990Ba (106082)	554
Medium: DMF 0.10 M Bu4N[BPh4]. Data for other 15,31-dialkyl derivatives. *****										
C34H54O8		H2L						Lasalocid CAS 25999-20-6 (2335)		
Lasalocid acid;										

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+	nmr	non-aq	20°C	100%	C				1998MLa (106162)	555

K(Tl+HL)=1.8

Medium: CD3OD. Method: 13C nmr.

C36H62O11 HL Monensin CAS 17090-79-8 (737)

Monensin, 1,6-dioxaspiro[4,5]decane derivative;

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

Tl+ con non-aq 25°C 100% C K1=4.30 1997PBb (106539) 556

Medium: acetonitrile. Additional method: potentiometry with ISE.

By calorimetry, DH(K1)=-24 kJ mol⁻¹, DS(K1)=0 J K⁻¹ mol⁻¹

Tl+ vlt non-aq 23°C 100% U I K1=10.6 1994FRa (106540) 557

Medium: MeCN. In PrCN: K1=9.9; acetone: 9.9; DMF: 7.2; N-Me-pyrrolidinone:

6.0; NN-DMA: 6.0; DMSO: 4.5; Diethylformamide: 4.1; Di-Et-acetamide: 4.1

Tl+ vlt non-aq 23°C 100% U I K1=4.5 1994RCa (106541) 558

In DMSO/MeCN mixt: mol. fract. DMSO=1. At mf: K1=10.6, 0.2: 6.0; 0.5: 5.1.

In DMSO/acetone: mf DMSO=0: K1=9.9; 0.5: 5.6. DMSO/HMPT: mf 0:1.9, 0.5: 2.2

Tl+ vlt alc/w 25°C 100% U K1=3.31 1978HPa (106542) 559

Method: Cyclic voltametry

C38H54O10 L CAS 210485-29-3 (3260)

Hexadecahydro-15,31-bis(2-methylpropyl)anthra[2,3:6,7]bis[1,4,7,10,13]pentaoxacyclo
pentadecin;

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

Tl+ vlt non-aq 20°C 100% C K1=1.6 19990Ba (106702) 560

Medium: DMF 0.10 M Bu4N[BPh4]. Data for other 15,31-dialkyl derivatives.

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

Chloride;

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

Tl++ oth NaClO4 23°C 1.00M U K1=4.79 B2=8.07 1974DSa (5874) 561

K3=1.11

Method: Pulse radiolysis.

Tl++ oth NaClO4 ? 1.0M U K1=4.8 B2=8.10 1974DSa (5875) 562

K3=1.1

Method: pulse radiolysis

C8H16O2S2 L CAS 294-95-1 (8604)

1,7-Dioxa-4,10-dithiacyclododecane;

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

Tl++ cal non-aq 25°C 100% C H K1=3.87 B2= 3.87 1986BUE (62627) 563
DH(K1)=-2.9 kJ mol⁻¹, DS(K1)=64.1 J K⁻¹ mol⁻¹; DH(K2)=-7.7.
Medium: MeOH.

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

Tl++ cal non-aq 25°C 100% C H K1=3.22 B2= 3.22 1986BUE (62733) 564
DH(K1)=-9.4 kJ mol⁻¹, DS(K1)=30 J K⁻¹ mol⁻¹; DH(K2)=-10.6.
Medium: MeOH.

C8H18N2O2 L CAS 294-92-8 (654)
1,7-Dioxo-4,10-diazacyclododecane;

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

Tl++ cal non-aq 25°C 100% C H K1=2.48 B2= 2.48 1986BUE (62851) 565
DH(K1)=-28.5 kJ mol⁻¹, DS(K1)=-48.3 J K⁻¹ mol⁻¹; DH(K2)=8.
Medium: MeOH.

C12H24O4S2 L CAS 296-39-9 (4938)
1,4,10,13-Tetraoxa-7,16-dithiacyclooctadecane;

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

Tl++ cal non-aq 25°C 100% C H K1=3.93 1986BUE (83145) 566
Medium: MeOH. DH(K1)=-11.2 kJ mol⁻¹, DS(K1)=37.3 J K⁻¹ mol⁻¹.

C12H24O6 L 18-Crown-6 CAS 17455-13-9 (577)
1,4,7,10,13,16-Hexaoxacyclooctadecane;

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

Tl++ cal non-aq 25°C 100% C H K1=5.22 1986BUE (83671) 567
Medium: MeOH. DH(K1)=-50.9 kJ mol⁻¹, DS(K1)=-71.1 J K⁻¹ mol⁻¹.

C12H26N2O4 L Cryptand 2,2 CAS 23978-55-4 (925)
4,7,13,16-Tetraoxa-1,10-diazacyclooctadecane;

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

Tl++ cal non-aq 25°C 100% C H K1=3.06 1986BUE (83911) 568
Medium: MeOH. DH(K1)=-21.2 kJ mol⁻¹, DS(K1)=-43.0 J K⁻¹ mol⁻¹.

e- HL Electron (442)
Electron;

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

 Tl+++ kin NaClO4 25°C 0.30M U I 1974FFb (980) 569
 K(Tl+e)=5.6 (330mV)
 K(Tl(II)+e)=37.5 (2.22V)

Tl+++ EMF oth/un 135°C 100% U 1969APa (981) 570
 K(Tl + 2Tl(s)=3Tl+) > 51.2
 Medium: (Na,K,Al)Cl

Tl+++ EMF NaClO4 25°C 3.00M U 1966JOa (982) 571
 K(Tl+2I=Tl+ + I2)=25.34

Tl+++ EMF oth/un 25°C 0.50M U I 1962BBc (983) 572
 K(Tl+2e=Tl(I))=26.0(770 mV)
 Medium:0.5-1.0 M HCl. In 0.5 to 5 M H2SO4 K=41.1(1215 mV). In 0.5 to 5M HNO3
 K=41.4(1225 mV). In 0.5 to 5 M HClO4 K=42.8(1260 mV)

Tl+++ EMF NaClO4 25°C 3.0M U 1953BIa (984) 573
 K(Tl+2e=Tl(I))=43.28(1280 mV)

Tl+++ EMF none 25°C 0.0 U 1952KJa (985) 574
 K=0.7(20 mV)
 Method: amperometry. K: 0.5Tl2O3(s)+1.5H2O+2e=Tl(I)+3OH

Tl+++ EMF none 25°C 0.0 U 1943STa (986) 575
 K(Tl+2e=Tl(I))=43.3(1280 mV)

Tl+++ EMF oth/un 0°C 1.0M U TI 1936NGa (987) 576
 K(Tl+2e=Tl(I))=44.04(1193 mV)
 Medium: HNO3. Data also for 0.5-2 M HNO3. At 25 C K=41.61(1230.3 mV)

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

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

Tl+++ nmr NaClO4 25°C 3.0M C 1990BGc (2362) 577
 B3=21.9
 B4=25.7
 Medium: 3.0 M HClO4. Method: 206Tl nmr.

Tl+++ EMF NaClO4 25°C 3.0M U K1=9.28 B2=16.70 1967YKa (2363) 578
 K3=5.4
 K4=3.6
 K5=1.5
 K(TlL+H2O=TlOHL+H)=-1.84

Tl+++ cal NaClO4 25°C 7.0M U K1=9.51 B2=16.88 1964LRa (2364) 579
 B3=22.30
 B4=26.43

 Tl+++ EMF NaClO4 20°C 7.0M U H K1=9.62 B2=17.06 1963AGa (2365) 580
 K3=5.53
 K4=4.14
 B4=26.73
 K5< -0.4

Medium: 4 M NaClO4, 3 HClO4. By calorimetry: DH(K1)=-37.5 kJ mol⁻¹, DS=56.0
 J K⁻¹ mol⁻¹. DH(K2)=-25.5, DS=55.6; DH(K3)=-19.1, DS=40.5; DH(K4)=-8.9, DS=48.8

 Tl+++ EMF oth/un ? var U 1961Eva (2366) 581
 B4=19.7

 Tl+++ EMF NaClO4 20°C 0.40M U K1=8.3 B2=14.6 1960BTc (2367) 582
 K3=4.6
 K4=3.1
 K5=2.5
 K6=1.7

 Tl+++ EMF NaClO4 25°C 2.20M U K1=8.9 B2=16.4 1956PVa (2368) 583
 K3=5.7
 K4=4.0
 K5=3.1
 K6=2.4

 Tl+++ EMF oth/un 25°C var U 1950BJa (2369) 584
 B4=20.2

 Tl+++ EMF none 18°C 0.0 U K1=9.7 B2=16.6 1949BEa (2370) 585
 K3=4.6
 K4=2.7

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

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

 Tl+++ nmr NaClO4 25°C 1.0M C 1998MGb (2765) 586
 K(Pt(CN)4+Tl+CN)=19.9
 K(Pt(CN)4+Tl+2CN)=30.7
 K(Pt(CN)4+Tl+3CN)=38.6
 K(Pt(CN)4+Tl+4CN)=44.8

Method: 195Pt and 205Tl nmr. K(2Pt(CN)4+Tl+2CN)=32.1.

 Tl+++ nmr oth/un 25°C 3.00M U M K1=12.7 B2=25.5 1996BBc (2766) 587
 B3=34.0
 B4=41.3
 B(TlLCl)=19.1
 B(TlLCl2)=22.3

Medium: LiClO4/HClO4. B(TlLCl3)=24.6, B(Tl(L)2Cl)=28.6, B(Tl(L)2Cl2)=30.9,
 B(Tl(L)3Cl)=36.4.

Tl+++ nmr NaClO4 25°C 4.0M C K1=13.21 B2=26.50 1989BGb (2767) 588
B3=35.17
B4=42.61

Method: 205Tl and 13C nmr. Medium: 3 M LiClO4/1 M NaClO4.

Tl+++ kin NaClO4 30°C 0.50M U 1955PDa (2768) 589
K2/K1=-0.82

Medium: 0.5 M(H,NaClO4)

Tl+++ con oth/un 25°C var U 1950BJa (2769) 590
B4=35

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

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

Tl+++ nmr oth/un 25°C 3.0M C 1989BGc (5876) 591
K5=ca. -0.30

Method: 205Tl nmr. Medium: 3.0 M HClO4/HCl.

Tl+++ EMF NaClO4 25°C 3.0M U K1=7.04 B2=12.32 1971BSd (5877) 592
B3=15.30
B4=17.36
K(TlL+H2O=TlL(OH)+H)=-1.87

Tl+++ sp oth/un 23°C ? U 1970SCb (5878) 593
K5=-0.07

Tl+++ EMF oth/un 25°C 1.0M U K1=5.88 B2=10.40 1969CPd (5879) 594
B3=12.94
B4=14.58

Medium: H2SO4

Tl+++ oth non-aq 26°C 100% U 1968WSb (5880) 595
K5=0.66

Method:Raman spectra. Medium:MeNO2

Tl+++ ISE NaClO4 25°C 4.0M U H K1=7.10 B2=12.50 1965KMd (5881) 596
B3=16.00
B4=18.50

Medium:3 M LiClO4,1 HClO4. By calorimetry:DH(K1)=-32.6 kJ mol⁻¹, DH(K2)=-15.5, DH(K3)=DH(K4)=0; DS(K1)=29.3 J K⁻¹ mol⁻¹, DS(K2)=50.2, DS3=66.9, DS4=25.1

Tl+++ oth oth/un var U 1965SPb (5882) 597
B6/B4=-0.7

Method:Raman spectra

Tl+++ dis oth/un 25°C 0.0 U TIH 1964NUa (5883) 598

Tl+++ cal NaClO4 25°C 3.0M U H 1960GAc (5893) 608
Medium: HClO4. DH(K1)=-22.8 kJ mol⁻¹, DH(B2)=-41.8, DH(B3)=DH(B4)=-46.4

Tl+++ ix none 25°C 0.0 U K2=3.04 1958H0a (5894) 609
K3=2.08
K4=0.52

Tl+++ dis none 30°C 0.0 U 1957HVa (5895) 610
B5=17.47

Tl+++ ISE NaClO4 21°C 2.20M U K1=6.25 B2=11.40 1956PVa (5896) 611
K3=3.10
K4=2.5
K5=2.15
K6=1.80

Tl+++ dis none 30°C 0.0 U 1955HVa (5897) 612
B5=17.56

Tl+++ con oth/un 25°C var U 1950BJa (5898) 613
B4=15.4

Tl+++ ISE none 18°C 0.0 U K1=8.1 B2=13.60 1949BEa (5899) 614
K3=2.2
K4=ca.2.2

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+++	sol	non-aq	0°C	100%	U			1961CZa (7269) 615 Ks(TlF3(s)=TlF3)=-3.68 Ks(TlF3(s)+F=TlF4)=-1.89		

Medium: liquid HF, I=0 corr

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+++	EMF	NaClO4	25°C	7.0M	U			1966J0a (8409) 616 B4=35.66		

Medium: 3 M HClO4, 4 M NaClO4

Tl+++ sol none 25°C 0.0 U 1957KMa (8410) 617
B4=32.15
K(TlL3(s)+L=TlL4)=0.0
Kso(TlL3)=-31.85

Tl+++ EMF oth/un 25°C var U 1906MAa (8411) 618
B4=30.29

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

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

Tl+++ gl R4N.X 25°C 10.0M U 1968LVa (9218) 619
B(Ti(OH)2L)=35.3
B(Ti(OH)2L2)=40.0
B(Ti(OH)2L3)=42.3
B(Ti(OH)2L4)=43.8

Medium: 10 M NH4NO3

Tl+++ gl R4N.X 25°C 10.0M U K1=4.6 B2=9.30 1967LKb (9219) 620
K3=2.3
K4=1.5
B4=13.0

Metal: Tl(OH)2+. Medium: NH4NO3

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

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

Tl+++ kin NaClO4 25°C 0.30M U 1977Tgb (9408) 621
K(TlL+HL=TlL2+H)=2.81
K(TlL2+HL=TlL3+H)=0.84

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

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

Tl+++ cal NaClO4 25°C 3.0M U H K1=0.90 1967MKb (9964) 622
(H/Li)ClO4. DH(K1)=0 kJ mol-1, DS=17 J K-1 mol-1

Tl+++ gl NaClO4 25°C 3.0M U K1=0.90 B2=0.12 1965KYc (9965) 623
B3=1.10
B(TlH-2L)=-2.10
B(TlH-1L2)=-0.32
B(TlH-1L3)=-0.40

Medium: LiClO4

Tl+++ sp NaClO4 22°C 2.0M U I K1=0.45 1957Bwa (9966) 624
K1=0.30(I=3), 0.67(I=1.15), 0.92(I=0.57)

Tl+++ sp oth/un 18°C var U T K1=0.18 1954PEb (9967) 625

K1=0.41(10 C)

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

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

Tl+++ EMF NaClO4 50°C 3.0M U T K1=2.81 B2=4.98 1965VOa (10265) 626
B3=5.70

K1=3.08(12.7 C), 3.0(20 C), 2.90(35 C); B2=5.60(12.7 C), 5.38(20 C),
5.18(35 C); B3=7.04(12.7 C), 6.90(20 C), 6.40(35 C)

OH- HL Hydroxide (57)
Hydroxide;

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

Tl+++ oth none 25°C 0.0 M *K1=-0.18
1986BGe (12313) 627

Application of specific ion interaction theory (SIT) to literature data.
Ks(0.5Tl2O3(s)+3H=Tl+1.5H2O)=-2.95

Tl+++ EMF oth/un 25°C 1.00M U K1=14.41 B2=27.08 1979YRa (12314) 628
Medium: 0.56 mol.parts CH3CN in H2O K1=15.40, B2=28.85

Tl+++ sp none 20°C 0.0 U K2=7.7 1976BAa (12315) 629

Tl+++ kin none 25°C 0.00 U 1974LPb (12316) 630
K(Me2Tl + OH)=1.05
K(2Me2TlOH=(Me2TlOH)2)=10.18

Tl+++ cal NaClO4 25°C 3.00M U H 1973KKg (12317) 631

*K1=-1.41

*K2=-1.15

Medium: LiClO4. DH(*K1)=100 kJ M-1, DS=310 J K-1 M-1; DH(*K2)=109, DS=343

Tl+++ sp diox/w 25°C 70% U I 1972KKh (12318) 632

*K1=-0.5

Medium: 70% w/w dioxan/H2O, 3 M LiClO4> In 0.5 to 1 M DMSO, 3 M LiClO4,
*K1=-0.6

Tl+++ sp oth/un 20°C U 1971KYb (12319) 633

*K1=-1.51

Tl+++ sol oth/un 25°C U 1970IEb (12320) 634

K(TlL3(s)+L)=-5.4

K(TlL3(s)+2L)=-5.6

K(TlL3(s)+3L)=-6.4

Tl+++ sol oth/un 22°C 0.02M U I 1970VTa (12321) 635

$$K_{so}(Tl(OH)_3) = -36.7$$

Medium: $Tl(NO_3)_3$ at $I=0.025$ (hydrolysis neglected); $K_{so}=-38.3(I=0)$

Tl+++ sp NaClO4 25°C 0.10M U I K1=12.82 B2=25.27 1969BNc (12322) 636
B3=37.46

K1 12.96, B2=25.45, B3=37.70(I=0.3); K1=13.10, B2=25.65, B3=37.98(I=0.5);
K1=13.52, B2=26.33, B3=38.80(I=1)

Tl+++ EMF R4N.X 25°C U K1=15.7 B2=30.7 1968LVa (12323) 637
Medium: NH_4NO_3 . Also data in presence of py, en

Tl+++ g1 R4N.X 25°C 10.0M U I K1=15.7 B2=30.7 1967LKc (12324) 638

Medium: 10 M NH_4NO_3 . In 2 M $Mg(NO_3)_2$: K1=15.40, B2=28.66. In 2 M en(HNO_3)2:
K1=15.45, B2=28.64

Tl+++ EMF NaClO4 25°C 3.00M U 1964KYb (12325) 639

$$*K1 = -1.18$$

$$*K2 = -1.42$$

Medium: 3 M $LiClO_4$

Tl+++ EMF NaClO4 25°C 3.00M U 1963KOb (12326) 640

$$*K1 = -1.14$$

$$*K2 = -1.43$$

Tl+++ sp NaClO4 25°C 3.0M U TI 1961RWa (12327) 641

$$*K1 = -1.16$$

*K1=-1.10(40 C). Same in H_2O & D_2O . 1.5 M $NaClO_4$ *K1=-1.07(25 C), -1.01(40 C)

Tl+++ kin none 25°C 0.0 M 1959LPa (12328) 642

$$K(Me_2Tl+L) = 1.04$$

$$K(2Me_2TlOH=(Me_2TlOH)_2) = 0.3$$

Tl+++ oth oth/un 32°C satd U 1958VRa (12329) 643

$$K = -6.90(?)$$

Medium:saturated Na_2SO_4 . $K:TlCl_3+3H_2O=Tl(OH)_3+3H+3Cl$. Method:freezing point

Tl+++ oth none 25°C 0.0 U 1958VSA (12330) 644

$$*K_{so}(Tl(OH)_3) = -2.15$$

$$*K_{so}(Tl_2O_3) = -2.60$$

Method:combination of thermodynamic data

Tl+++ EMF NaClO4 25°C 3.0M U 1957SCd (12331) 645

$$K_{so} = -45.0$$

$$*K_{so} = -2.34$$

Tl+++ oth oth/un ? var U 1957SKa (12332) 646

$$K_{so} = -38$$

Medium: H_2SO_4 . Method: tyndallometry

Tl+++ EMF NaClO4 25°C 3.0M U 1953BIa (12333) 647

*K1=-1.14
*K2=-1.49

Tl+++ gl oth/un 25°C ? U 1953MKa (12334) 648
Kso=-37

Tl+++ kin NaClO4 25°C 3.68M U T 1952JOa (12335) 649
*K1=0.81
*K1=0.97(35 C),1.10(45 C)

Tl+++ kin NaClO4 25°C 6.0M U T 1951HDa (12336) 650
*K1=0.51
*K1=0.72(32.2 C),0.84(41.8 C)

Tl+++ EMF none 25°C 0.0 U 1951SUa (12337) 651
Kso=-45.20

Tl+++ gl none 18°C 0.0 U 1949BEa (12338) 652
Kso=-43.6
*K1=-0.2

Tl+++ gl oth/un 25°C dil U 1938OKa (12339) 653
Kso=-34.1

Tl+++ sol NaClO4 25°C var U 1936SHa (12340) 654
Kso=-43.81
*Kso=-1.81

Tl+++ EMF oth/un 25°C var U 1905SAa (12341) 655
Kso=-42.90
*Kso=-1.13

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

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

Tl+++ kin NaClO4 20°C 2.0M U 1990GKb (15307) 656
K(TlL+Tl)=1.65
K(TlL+L+H)=1.38

Tl+++ vlt NaClO4 25°C 2.0M U 1969TFa (15308) 657
K(Tl2L+L=Tl2L2)=2.4

S03-- H2L Sulfite CAS 7782-99-2 (801)
Sulfite;

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

Tl+++ EMF oth/un 25°C var U 1957BJa (15480) 658

B4=ca.34

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

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

Tl+++ cal NaClO4 25°C 3.0M U H K1=2.27 1967MKb (16606) 659
2nd method:redox. Medium: 3 M LiClO4, 0.5 M HClO4. DH(K1)=-11 kJ mol-1,
DS=4.6 J K-1 mol-1

Tl+++ EMF NaClO4 25°C 3.0M U K1=1.95 B2=3.74 1965KYd (16607) 660
K(Tl+HL)=1.23
K(Tl+2HL)=2.12
K(Tl+HL+L)=3.00

Medium: LiClO4

Tl+++ sol oth/un 25°C var U K1=1 1960HEa (16608) 661

Tl+++ kin NaClO4 25°C 3.68M U K1=0.3 1957BMa (16609) 662

S203-- H2L Thiosulfate CAS 73686-28-7 (177)
Thiosulfate;

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

Tl+++ EMF oth/un 25°C var U 1950BJa (16909) 663

B4=41

Se03-- H2L Selenite CAS 7783-00-8 (2391)
Selenite;

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

Tl+++ sol oth/un 20°C var U 1959MIa (17076) 664

Kso(Tl2L3)=-38.7

C2H2O2 L Glyoxal CAS 107-22-2 (2017)
Ethanedial; OHC.CHO

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

Tl+++ kin NaClO4 18°C 0.22M U TI K1=0.56 B2=1.53 1980IAa (18372) 665

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

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

Tl+++ sp oth/un 15°C 0.50M C K1=0.72 1984CDb (18401) 666

Medium: 0.50 M LiCl.

C2H2O3 HL Glyoxylic acid CAS 298-12-4 (1142)
Glyoxylic acid; OHC.COOH

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

Tl+++ sp none 30°C 0.0 C K1=2.93 1984GSf (18431) 667

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

Tl+++ dis NaClO4 20°C 0.10M U B3=16.9 1963STc (19111) 668

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

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

Tl+++ sp oth/un 15°C 0.50M C K1=1.38 1984CDb (19387) 669
Medium: 0.50 M LiCl.

C2H4O2 L CAS 141-46-8 (2016)
2-Hydroxyethanal; HO.CH2.CHO

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

Tl+++ kin NaClO4 50°C 0.68M U TI K1=0.26 1980IAa (19514) 670

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

Tl+++ sp oth/un 15°C 0.50M C K1=2.59 1984CDb (20205) 671
Medium: 0.50 M LiCl.

Tl+++ EMF NaClO4 25°C 3.0M U K1=6.17 B2=11.28 1965KYe (20206) 672
B3=15.10
B4=18.3
B(Tl(OH)L)=18.41
B(Tl(OH)L2)=22.9

Medium: LiClO4. K(Tl+HL+L)=7.97, B(Tl(OH)2L)=30.1

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
Tl+++	sp	none	30°C	0.0	C		K1=3.40 B2= 5.00	1984GSf (20638)	673
Tl+++	kin	NaClO4	75°C	0.20M	U	TI	K1=0.77	1980IAa (20639)	674

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
Tl+++	gl	NaCl	37°C	0.15M	C	M	K(Tl(CH3)2+L)=1.189	1988BGa (21736)	675

C2H6OS		L		DMSO			CAS 67-68-5	(329)	
Dimethylsulfoxide; (CH3)2.S0									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+++	vlt	non-aq	25°C	100%	U		K1=1.3	1976GBa (22126)	676
Medium: CH2Cl2, 0.1M Bu4NClO4; Metal ion (C6F5)2Tl+									
Tl+++	vlt	non-aq	25°C	100%	U		K1=0.9	1976GBa (22127)	677
Medium: CH2Cl2, 0.1M Bu4NClO4; Metal ion (m-CH3C6H4)2Tl+									

C2H6O2		L		Ethyleneglycol			CAS 107-21-1	(924)	
1,2-Dihydroxyethane (Ethane-1,2-diol); HO.CH2.CH2.OH									

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Tl+++	kin	NaClO4	75°C	0.56M	U	TI	K1=-0.49	1980IAa (22158)	678

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
Tl+++	nmr	non-aq	25°C	100%	U		K1=7.6 B2=12.80 K3=2.64	2001MIa (23238)	679
Method: 205Tl and 1H NMR spectroscopy. Medium: pyridine, 0.5 M NaClO4.									
Tl+++	vlt	non-aq	25°C	100%	U		K1=4.6	1976GBa (23239)	680
Medium: CH2Cl2, 0.1M Bu4NClO4; Metal ion (m-CH3C6H4)2Tl+									
Tl+++	vlt	non-aq	25°C	100%	U		K1=6.3	1976GBa (23240)	681
Medium: CH2Cl2, 0.1M Bu4NClO4; Metal ion (C6F5)2Tl+									

Tl+++	gl	oth/un	25°C	2.0M	U		K(Tl(OH)2+L)=13.0 K(Tl+2OH+L)=41.64	1967LKa (23241)	682

Medium: 2M L(HNO3)2

C3H7NO L DMF CAS 68-12-2 (598)
N,N-Dimethylformamide; HCO.N(CH3)2

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

Tl+++ vlt non-aq 25°C 100% U K1=0.7 1976GBa (25667) 683
Medium: CH2Cl2, 0.1M Bu4NClO4; Metal ion (m-CH3C6H4)2Tl+

Tl+++ vlt non-aq 25°C 100% U K1=1.0 1976GBa (25668) 684
Medium: CH2Cl2, 0.1M Bu4NClO4; Metal ion (C6F5)2Tl+

C3H7NO2 HL B-Alanine CAS 107-95-9 (575)
3-Aminopropanoic acid; H2N.CH2.CH2.COOH

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

Tl+++ EMF NaClO4 25°C 1.00M U K1=13.28 B2=24.90 1977YKc (26484) 685
B3=37.98

Medium: LiClO4

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

Tl+++ gl NaCl 37°C 0.15M C M 1988BGa (26845) 686
K(Tl(CH3)2+L)=3.621
K(Tl(CH3)2+H+L)=11.850
K(Tl(CH3)2+2L)=5.349

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

Tl+++ EMF NaClO4 20°C 1.0M U K1=11.57 B2=12.81 1962BTb (31377) 687
B3=13.34

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

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

Tl+++ vlt non-aq 25°C 100% U K1=1.3 1976GBa (36686) 688
Medium: CH2Cl2, 0.1M Bu4NClO4; Metal ion (m-CH3C6H4)2Tl+

Tl+++ vlt non-aq 25°C 100% U K1=2.0 1976GBa (36687) 689
Medium: CH2Cl2, 0.1M Bu4NClO4; Metal ion (C6F5)2Tl+

Tl+++ gl oth/un 25°C 4.0M U 1966LKb (36688) 690

K(Tl(OH)2+L)=0.7
B(Tl(OH)2L)=29.1
K(Tl(OH)2+2L)=2.4
B(Tl(OH)2L2)=30.8

Medium: C5H5NHNO3. K(Tl(OH)2+4L)=2.5, B(Tl(OH)2L4)=31.0

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

Tl+++ dis NaClO4 20°C 0.10M U K1=8.88 B2=16.88 1969BFb (38105) 691

K3=7.82

C5H9NO3S H2L N-Acetyl-Cys CAS 616-91-1 (1187)
N-Acetylcysteine; CH3.CO.NH.CH(CH2.SH)COOH

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

Tl+++ gl NaCl 37°C 0.15M C M 1988BGa (38819) 692

K(Tl(CH3)2+L)=2.622

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

Tl+++ gl NaCl 37°C 0.15M C M 1988BGa (41285) 693

K(Tl(CH3)2+L)=3.814
K(Tl(CH3)2+H+L)=11.853
K(Tl(CH3)2+2L)=5.217

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

Tl+++ EMF NaClO4 20°C 1.0M U I T K1=20.9 1967ABc (47060) 694

Medium: HClO4. In 1 M NaClO4: B2=32.5

Tl+++ sp oth/un 20°C ? U 1966KAc (47061) 695

K(Tl+H2L)=4.38
K(TlL+H3L)=5.37

Tl+++ gl oth/un 25°C 1.0M U I K1=18 1965KMc (47062) 696

K(Tl+3H2L)=17.64

Medium: HNO3. In 1 M NaCl: K(TlCln+H)=2.5

 Tl+++ gl KNO3 25°C 0.10M U K1=12.41 1967ASa (55059) 704

 C7H13NO3S H2L CAS 59-53-0 (1269)
 N-Acetyl-penicillamine; CH3.CO.NH.CH(COOH)C(CH3)2SH

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

Tl+++ gl NaCl 37°C 0.15M C M 1988BGa (57494) 705
 K(Tl(CH3)2+L)=2.628

 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

Tl+++ dis NaClO4 20°C 0.10M U K1=9.11 B2=17.39 1969BFb (58688) 706
 K3=7.63

 C8H12N2O8 H4L CAS 35039-85-1 (4537)
 1,2-Diaminoethane-N,N'-dimalonic acid; (HOOC)2.CH.NH.CH2.CH2.NH.CH(COOH)2

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

Tl+++ EMF KNO3 25°C 0.10M U K1=35.78 1973GSd (61529) 707
 K(Tl+HL)=27.80
 Using glass/Pt electrodes, values are 35.78, 27.80

 C9H6NO4IS H2L Ferron CAS 547-91-1 (275)
 7-Iodo-8-hydroxyquinoline-5-sulfonic acid; (HO)(HO3S)C9H4NI

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

Tl+++ sp oth/un 25°C 0.10M U 1968BNb (63831) 708
 K(TlOH+L)=30.1

 C9H7NO HL Oxine CAS 148-24-3 (504)
 8-Hydroxyquinoline (8-quinolinol);

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

Tl+++ sp alc/w 25°C 20% U 1968BNb (64361) 709
 K(Tl(OH)2+L)=10.34

Medium: EtOH

Tl+++ oth oth/un ? ? U 1957PKa (64362) 710
 Kso=-32.4

 C9H7N3O2S H2L TAR CAS 2246-46-0 (707)
 4-(2'-Thiazolylazo)-resorcinol; C3H2NS.N:N.C6H3(OH)2

Tl+++ EMF KNO3 25°C 0.10M U K1=35.12 1973GKe (73190) 718
K(Tl+HL)=28.10

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

Tl+++ gl NaClO4 25°C 1.00M C M 1995MAa (74238) 719
K(TlL+OH)=7.90
K(TlL+Cl)=2.52
K(TlL+Br)=3.70
K(TlL+I)=5.47

K(TlL+SCN)=2.94, K(TlL+N3)=3.56, K(TlL+py)=2.58, K(TlL+en)=8.65,
K(TlL+phen)=4.75, K(TlL+bpy)=3.21, K(TlL+Gly)=5.9, K(TlL+IDA)=4.72

Tl+++ gl NaClO4 25°C 1.00M C M 1989TBa (74239) 720
K(Tl(OH)+H)=6.0
K(TlL+Cl)=2.3
K(TlBr)=3.5
K(TlL+I)=5.9

Tl+++ gl KNO3 25°C 0.10M U K1=35.30 1973GKe (74240) 721
K(Tl+HL)=27.54

Tl+++ EMF NaClO4 25°C 1.00M U 1971KMe (74241) 722
K(Tl+CoL)=5.10
K(Tl+2CoL)=9.97

By spectrophotometry: K(Tl+CoL)=5.02.

Tl+++ oth NaClO4 25°C 1.0M U 1971KMe (74242) 723
K(Tl+CrL)=5.45
K(Tl+2CrL)=10.0

Method: platinum electrode. By spectrophotometry, K(Tl+CrL)=5.31

Tl+++ EMF NaClO4 20°C 1.0M U M T K1=37.8 1967ABc (74243) 724

Tl+++ sp oth/un 19°C dil U M K1=24.0 1966KAb (74244) 725
K(FeL+Tl=TlL+Fe)=0.086

T:18-20

Tl+++ gl oth/un 20°C 0.40M U 1960BTa (74245) 726
K(TlLOH+H)=7.8

Tl+++ gl oth/un 20°C 0.10M U K1=22.5 1960BTd (74246) 727
K(TlL+H)=2.30

Tl+++ vlt oth/un 20°C 1.0M U K1=5.81 1957BVb (74247) 728

Tl+++ gl none 15°C 0.0 U K1=24.95 1956STa (74248) 729
K(TlL+H)=1.7

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

Tl+++ sp oth/un 20°C ? U M K1=19.72 1967KAe (75519) 730
K(Tl+FeL=TlL+Fe)=0.66

C10H28N6 L PENTEN CAS 4097-90-9 (3315)

N,N,N',N'-Tetra-(2-aminoethyl)diaminoethane;

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

Tl+++ gl NaClO4 25°C 1.0M C K1=37.1 2001GLb (76881) 731
B(TlHL)=39.7

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

Tl+++ sp oth/un ? ? U 1971BRd (77590) 732
K(Tl(OH)2+HL)=24.17

Tl+++ sp NaClO4 ? 0.10M U 1969HSd (77591) 733
K(Tl+HL)=17.93

Tl+++ sp oth/un 25°C ? U 1966DMf (77592) 734
K(?)=9.9

C11H18N2O8 H4L CAS 38539-29-0 (2573)

1,3-Diaminopropane-N,N'-di(1,4-butanedioic acid)

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

Tl+++ EMF KNO3 25°C 0.10M U K1=26.32 1976DGf (79374) 735
K(M+TlL)=20.45

C11H18N2O8 H4L CAS 4408-81-5 (923)

1,3-Diaminopropane-N,N,N',N'-tetraethanoic acid; ((HOOC.CH2)2N.CH2.)2.CH2

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

Tl+++ EMF NaClO4 20°C 1.0M U K1=30.9 1967ABc (79473) 736

C11H18N2O9 H4L CAS 668-21-1 (2562)

2-Hydroxy-1,3-diaminopropane-N,N'-di(1,4-butanedioic) acid

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

Tl+++ EMF KNO3 25°C 0.10M U K1=29.90 1976DGf (79607) 737
K(M+TlL)=22.04

C12H8N2 L Phenanthroline CAS 66-71-7 (144)
1,10-Phenanthroline;

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

Tl+++ dis NaNO3 25°C 1.0M U K2=7.4 1962Kmb (80523) 738
K3=5.82
B3=24.3

Tl+++ EMF oth/un 25°C 1.0M U K1=11.57 B2=18.30 1961KMa (80524) 739

C12H20N2O8 H4L CAS 40623-42-5 (1101)
1,2-Diaminoethane-N,N'-di(2-pentane-1,5-dioic acid); (CH2NHCH(COOH)CH2CH2COOH)2

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

Tl+++ gl KNO3 25°C 0.10M U K1=35.25 1973GKe (82104) 740
K(Tl+HL)=27.85

2nd method: platinum electrode.

C12H20N2O8S H4L TEDTA CAS 923-74-0 (3394)
2,2'-Thiobis(ethyliminodiethanoic acid); S(CH2.CH2.N(CH2.COOH)2)2

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

Tl+++ EMF NaClO4 20°C 1.0M U I K1=31.8 1967ABc (82478) 741
In 1 M HClO4: K1=32.3

C12H20N2O9 H4L EEDTA CAS 923-73-9 (2112)
Oxa-bis(ethyleneimino)diethanoic acid; ((HOOC.CH2)2N.CH2.CH2)2O

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

Tl+++ EMF NaClO4 20°C 1.0M U I K1=32.8 1967ABc (82570) 742
In 1 M HClO4: K1=33.4

Tl+++ sp oth/un 20°C ? U K1=23.08 1967KAc (82571) 743
K(FeL+Tl=TlL+Fe)=0.51

C12H24O3S3 L CAS 52559-82-7 (8963)
1,4,7-Trioxa-10,13,16-trithiacyclooctadecane;

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

Tl+++ nmr non-aq 25°C 100% C H 1984KMF (83120) 744
K((CH3)2TlClO4+L)=2.09
Method: 1H nmr. Medium: CD3CN. DH(K)=-12 kJ mol-1, DS(K)=-22 J K-1 mol-1.

Tl+++ nmr non-aq 25°C 100% C H 1984KMF (83121) 745
K((C2H5)2TlClO4+L)=1.56
Method: 1H nmr. Medium: CD3CN. DH(K)=-21 kJ mol-1, DS(K)=-40 J K-1 mol-1.

C12H24O3S3 L CAS 63919-49-3 (8964)
1,7,13-Trioxa-4,10,16-trithiacyclooctadecane;

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

Tl+++ nmr non-aq 25°C 100% C H 1984KMF (83122) 746
K((CH3)2TlClO4+L)=1.68
Method: 1H nmr. Medium: CD3CN. DH(K)=-9.6 kJ mol-1, DS(K)=-62 J K-1 mol-1.

Tl+++ nmr non-aq 25°C 100% C H 1984KMF (83123) 747
K((C2H5)2TlClO4+L)=1.49
Method: 1H nmr. Medium: CD3CN. DH(K)=-41 kJ mol-1, DS(K)=-110 J K-1 mol-1

C12H24O4S2 L CAS 296-39-9 (4938)
1,4,10,13-Tetraoxa-7,16-dithiacyclooctadecane;

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

Tl+++ nmr alc/w 25°C 100% C H 1984KMF (83146) 748
K((CH3)2TlClO4+L)=0.93
Method: 1H nmr. Medium: CD3OH. DH(K)=-18 kJ mol-1, DS(K)=-41 J K-1 mol-1.

Tl+++ nmr non-aq 25°C 100% C 1984KMF (83147) 749
K((C2H5)2TlClO4+L)=>3.0
Method: 1H nmr. Medium: CD3CN.

C12H24O4S2 L CAS 52559-81-6 (8965)
1,4,7,13-Tetraoxa-10,16-dithiacyclooctadecane;

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

Tl+++ nmr alc/w 25°C 100% C H 1984KMF (83148) 750
K((CH3)2TlClO4+L)=1.90
Method: 1H nmr. Medium: CD3OH. DH(K)=-26 kJ mol-1, DS(K)=-50 J K-1 mol-1.

C12H24O5S L Thia-18-crown-6 CAS 52559-79-2 (2263)
1-Thia-4,7,10,13,16-pentaoxacyclooctadecane;

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

Tl+++ nmr non-aq 25°C 100% C 1984KMF (83157) 751
K((C2H5)2TlClO4+L)=>3.0

Method: 1H nmr. Medium: CD3CN.

Tl+++ nmr non-aq 25°C 100% C 1984KMg (83158) 752
K((C2H5)2TlClO4+L)=>3.0

Method: 1H nmr. Medium: CD3CN.

C13H9N3O7S3 H3L CAS 2172-27-2 (5007)
1-(2-Thiazolylazo)-2-naphthol-3,6-disulfonic acid;

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

Tl+++ sp NaClO4 ? 0.10M U B2=21.43 1972BZa (84654) 753

C13H22N2O8 H4L CAS 1798-14-7 (921)
(Pentamethylenedinitrilo)tetraethanoic acid; ((HOOC.CH2)2N.CH2.CH2)2CH2

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

Tl+++ EMF NaClO4 20°C 1.0M U K1=31.3 1967ABc (86209) 754

C14H9N3O3S H2L CAS 22026-06-8 (5081)
1-(2'-Thiazolylazo)-2-naphthol-3-carboxylic acid;

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

Tl+++ sp mixed ? 40% U 1972BZb (86844) 755

K(Tl+2HL)=26.65

Medium: 40% v/v HCON(CH3)2, 0.1 M NaClO4

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

Tl+++ sp oth/un ? ? U 1967GUa (87770) 756

K(?)=5.59

C14H16N4O HL PAAC CAS 13059-69-3 (5067)
5-Ethylamino-4-methyl-2-(2'-pyridylazo)phenol;

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

Tl+++ sp oth/un ? ? U 1967GKb (88021) 757

K(?)=6.68

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

Tl+++ gl NaNO3 25°C 1.00M C M 1995MAa (88806) 758

K(Tl+OH)=7.20
K(Tl+Cl)=1.86
K(Tl+Br)=2.80
K(Tl+I)=4.79

K(Tl+SCN)=2.21, K(Tl+N3)=3.28, K(Tl+en)=7.68, K(Tl+Hen)=5.87,
K(Tl+phen)=3.64, K(Tl+Hphen)=2.77, K(Tl+bpy)=2.20, K(Tl+oxalate)=2.10

Tl+++ EMF NaClO4 20°C 1.0M U K1=38.3 1967ABc (88807) 759

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

Tl+++ EMF NaClO4 20°C 1.0M U I K1=46.0 1967ABc (89417) 760
In 1 M HClO4: K1=48.0

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

Tl+++ sp oth/un 19°C .001M U 1967KAc (89609) 761
K(Tl+HL)=9.72
K(Tl+H2L)=2.52
K(Tl+H3L)=2.28

C15H10N3O5ClS H3L (7520)
7-[(2-Hydroxy-5-chlorophenyl)azo]-8-hydroxyquinoline-5-sulfonic
acid; C6H3Cl(OH)N=NC9H4N(OH)(SO3H)

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

Tl+++ sp KNO3 25°C 0.10M M K1=25.46 1997PKb (90956) 762

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

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

Tl+++ sp NaClO4 25°C 0.10M U K1=9.2 B2=16.4 1967YTb (90999) 763

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

Tl+++ sp oth/un ? ? U 1971BRe (91244) 764
K(Tl(OH)2+L)=16.70

C15H11N3O4S H2L 1-PAN-4S (7010)
2-(2-Pyridylazo)-1-naphthol-4-sulfonic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+++	sp	KNO3	25°C	0.10M	U			K1=14.23 B2=26.62	1980VHa (91327)	765

C15H12N2O5 H2L CAS 1562-85-2 (5111)
Galloycyanine;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+++	sp	oth/un	?	?	U			K1=5.50 B2=11.21	1973TPb (91442)	766

By polarography: K1=6.79, B2=11.24

C17H14N2O2 L CAS 4551-69-3 (698)
4-Benzoyl-3-methyl-1-phenyl-2-pyrazolin-5-one;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+++	dis	NaClO4	20°C	0.10M	U			K1=8.2 B2=15.2 B3=21.5	1969BFc (95903)	767

C17H16N8 HL (5235)
1,5-Di-(1'-methylbenzimidazolyl-2')formazan;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+++	dis	oth/un	?	?	U	M			1966Lga (96118)	768

K(TlA2+HL=TlA2L+H)=4.05

HA=ethanoic acid

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
Tl+++	gl	NaNO3	25°C	1.00M	C	I			2000CLa (98098)	769

K(TlL+H)=4.95
K(TlHL+H)=2.61
K(TlH2L+H)=1.4

In 1.0 M NaClO4, K(TlL+H)=5.05, K(TlHL+H)=2.55, K(TlH2L+H)=1.75.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg	K values	Reference	ExptNo
Tl+++	gl	NaNO3	25°C	1.00M	C				2000CLa (98099)	770

K(TlL+Co)=4.45
K(TlL+Ni)=5.68
K(TlL+Cu)=6.65
K(TlL+Zn)=4.44

K(TlL+Cd)=4.26, K(TlL+Pb)=4.20

 C22H20N2 L DiMe-naphidine CAS 13138-48-2 (1809)
 3,3'-Dimethylnaphthidine, 4,4'-Diamino-3,3'-dimethyl-1,1'-binaphthyl

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

 Tl+++ sp oth/un 25°C dil U K1=3.95 1971CBb (101692) 771

C25H20N8 HL (5341)
 1,5-Di(1'-methylnaphth[1,2-d]imidazolyl-2)formazan;

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

 Tl+++ dis oth/un ? ? U M 1966LGa (103600) 772
 K(T1A2+HL=T1A2L+H)=2.74

HA=ethanoic acid

 C25H20N8 HL (5342)
 1,5-Di(3'-methylnaphth[1,2-d]imidazolyl-2)formazan;

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

 Tl+++ dis oth/un ? ? U M 1966LGa (103601) 773
 K(T1A2+HL=T1A2L+H)=2.74

HA=ethanoic acid

 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

 Tl+++ gl NaNO3 25°C 1.00M C M 1995MAa (104012) 774
 K(T1L+OH)=8.40
 K(T1L+Cl)=3.56
 K(T1L+Br)=4.17
 K(T1L+I)=5.56

K(T1L+SCN)=2.76, K(T1L+N3)=4.33, K(T1L+phen)=2.34, K(T1L+oxalate)=2.9

 C31H32N2O13S H6L Xylenol orange CAS 63721-85-5 (432)
 5,5'-Bis-N,N-bis(carboxymethyl)aminomethyl-4'-hydroxy-3,3'-dimethylfuchstone-2"-sulfonic acid;

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

 Tl+++ sp oth/un 25°C 0.10M U 1969BRb (105502) 775
 K(2T1+2H2L)=8.03

 Tl+++ sp oth/un 25°C ? U 1966DMd (105503) 776
 K(?)=4.8

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

Tl+++ sp oth/un 25°C 0.10M C 1997ASa (106622) 777
K1eff=3.69

Medium: 0.10 M acetate buffer, pH 5.0.

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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
R or IUP=R signifies EVALUATION RATING = Recommended by IUPAC

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