SC-Database
Software version = 5.81 Data version = 4.62
Experiment list contains 245 experiments for
 (no ligands specified)
 3 metals : Am(Not3,4), Am+++, Am++++
 (no references specified)
 (no experimental details specified)

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

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am(Not3,4) EMF none 25°C 0.00 U 1970BCc (303) 1
  K(AmO2++ + e)=28.74(1.70V)

Am(Not3,4) EMF oth/un 22°C 0.54M U I 1970YGa (304) 2
  K=24.4(1.43V,C=0.54)
Medium: C M H3PO4. At C=0.54; K: Am(VI)+e=Am(V); K=24.1(1.41V,C=1.19),
21.5(1.26V,C=3.55), 22.5(1.32V,C=4.34)

Am(Not3,4) oth none 25°C 0.0 U 1957GCa (305) 3
  K=89(1750 mV)
  K'=62(1830 mV)
K: AmO2(VI)+4H+3e=Am(III)+2H2O. From thermodynamic data
K': AmO2(V)+4H+2e=Am(III)+2H2O

Am(Not3,4) EMF NaClO4 25°C 1.0M U 1950PAa (306) 4
  K=27.7(1640 mV)
Medium: HClO4. K: AmO2(VI)+e=AmO2(V)
****
NO3- HL Nitrate CAS 7697-37-2 (288)
Nitrate;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am(Not3,4) sp oth/un 25°C 0.10M U B2=3.93 1975VAa (9567) 5
****
OH- HL Hydroxide (57)
Hydroxide;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am(Not3,4) sol NaCl 25°C 0.1M U 1988SKe (10986) 6
  K(AmO2+OH)=1.7
cation: AmO2+
****
PO4--- H3L Phosphate CAS 7664-38-2 (176)
Phosphate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am(Not3,4) con	oth/un		23°C	1.00M	U		1979LFa (13099)		7
							K(AmO2+2H2PO4)=4.61		

****

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
Am(Not3,4) sol	oth/un		25°C	0.50M	U		K1=3.08	1979MPb (18791)	8
Medium: ammonium oxalate									
Am(Not3,4) sol	oth/un		20°C	1.00M	U			1979MPc (18792)	9
							K(AmO2+L)=3.08		
Am(Not3,4) sp	KNO3		25°C	0.25M	U			1974SNa (18793)	10
							K(AmO2+L=AmO2L)=3.27 (Am(V))		
							K(AmO2L+L=AmO2L2)=2.10 (Am(V))		

****

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
Am(Not3,4) sol	oth/un		25°C	1.00M	U		K1=1.20	1979MPb (19886)	11
Medium: ammonium oxalate									
Am(Not3,4) sol	oth/un		20°C	1.00M	U			1979MPc (19887)	12
							K(AmO2+L)=1.20		
Am(Not3,4) dis	R4N.X	?		0.10M	U		K1=1.40 B2=1.11	1970HAc (19888)	13
Medium : 0.1 M (H,NH4)ethanoate									
Am(Not3,4) oth	none	?	?		U		K1=3.01 B2=5.42	1969MOc (19889)	14
							B3=7.24		
Data from survey of literature data. Metal ion: AmO2++									

****

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
Am(Not3,4) sol	oth/un		25°C	0.10M	U			1979MPb (73580)	15
							K(AmO2+HL)=4.81		
Medium: ammonium oxalate									
Am(Not3,4) sol	oth/un		20°C	1.00M	U			1979MPc (73581)	16
							K(AmO2+HL)=4.73		

```
--------------------------------------------------------------------------------
Am(Not3,4) sp  KNO3   25°C 0.10M U                      1974NSa (73582)  17
                                        K(AmO2+HL)=4.88
********************************************************************************
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
--------------------------------------------------------------------------------
Am(Not3,4) sp  KNO3   25°C 0.10M U                      1974NSa (89148)  18
                                        K(AmO2+HL)=6.55
                                        K(AmO2+H2L)=2.85
********************************************************************************
e-                     HL    Electron           (442)
Electron;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      oth none   25°C  0.0  U                      1969NBa   (307)  19
                                        K(Am+e=Am(II))=-44.0(-2.6V)
Method:Estimated data
--------------------------------------------------------------------------------
Am+++      oth none   25°C  0.0  U                      1957GCa   (308)  20
                                        K(Am+3e=Am(s))=-121(-2380 mV)
From thermodynamic data
********************************************************************************
Br-                    HL    Bromide          CAS 10035-10-6  (19)
Bromide;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      sp  oth/un 25°C  var  U        K1=-3.3        1969SGc  (1722)  21
Medium: LiBr
--------------------------------------------------------------------------------
Am+++      sp  oth/un       var  U        K1=-3.28       1966SMd  (1723)  22
Medium:LiBr var
********************************************************************************
CO3--                  H2L    Carbonate        CAS 465-79-6  (268)
Carbonate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      dis NaClO4 25°C 1.00M U        K1=5.81   B2=9.72   1982LUb  (3143)  23
********************************************************************************
Cl-                    HL    Chloride         CAS 7647-01-0  (50)
Chloride;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      dis NaClO4 25°C  1.0M C  I     K1=-0.27       1998SNa  (4462)  24
```

Data for 0-0.40 mol fraction CH3OH in H2O, 1.0 M NaClO4.
At x=0.40, K1=0.87. Method: extraction of 241Am with HDEHP in toluene.

Am+++ dis NaClO4 20°C 3.00M U K1=0.55 B2=0.22 1982FKb (4463) 25

Am+++ dis NaClO4 30°C 1.0M U K1=0.02 B2=-0.37 1971KNb (4464) 26

Am+++ sp non-aq ? 100% U I 1970MBa (4465) 27
K6=2.2
Medium: 85% w/w succinitrile/15% acetonitrile
In propene carbonate: K6=1.8

Am+++ sp NaClO4 25°C var U K1=-2.0 1969BMe (4466) 28
Medium: HCl

Am+++ sp oth/un ? var U K1=-2.2 B2=-4.7 1969MSf (4467) 29
Medium: LiCl

Am+++ nmr oth/un ? var U K1=0.3 B2=0.00 1969VSa (4468) 30
Method: nmr

Am+++ dis NaClO4 1.0M U K1=-0.60 B2=-0.42 1968SFa (4469) 31

Am+++ nmr oth/un var U K1=0.03 B2=-0.97 1966VKa (4470) 32

Am+++ ix NaClO4 26°C 1.0M U K1=0.15 1964BPb (4471) 33
Method:cation exchange. When I=1 M HClO4:K1=-0.05

Am+++ dis NaClO4 25°C 4.0M U K1=-0.15 B2=-0.69 1964SEa (4472) 34

Am+++ sp KCl ? var U K1=-2.21 B2=-4.70 1964SMa (4473) 35
Medium:LiCl var

Am+++ ix NaClO4 20°C 4.0M U K1=-0.16 B2=-0.74 1962GRc (4474) 36

Am+++ dis NaClO4 22°C 1.0M U K1=-0.05 1962PMb (4475) 37

Am+++ ix none ? 0.0 U K1=1.17 1956WWa (4476) 38

****

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

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

---

Am+++ dis NaClO4 25°C 2.00M U T B2=0.30 1981LMa (6145) 39

Am+++ dis oth/un 25°C 2.0M U K1=-0.07 1972BCa (6146) 40
Medium: HBF4

****

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

Fluoride;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	oth	NaClO4	25°C	0.10M	U		K1=3.32		1973MSg (6733)	41
Method: electrical migration or transference number										
Am+++	dis	NaClO4	25°C	0.50M	C		K1=3.39 B3=9.00	B2= 6.11	1970ALc (6734)	42
Method: extraction of 241Am from 0.50 M NaClO4 medium into toluene/ di-(2-ethylhexyl)phosphoric acid. Medium pH 3.6.										
Am+++	dis	NaClO4	25°C	0.50M	U		K1=3.39 B3=9.0	B2=6.11	1969ALd (6735)	43
Am+++	dis	NaClO4	25°C	1.0M	U		K1=2.93		1969JCa (6736)	44
Am+++	sol	NaClO4	23°C	0.10M	U	T H	K3=4.13 Ks(AmF3(s)=AmF3)=-4.87		1954FEa (6737)	45
At 0 C: K3=3.74, Ks=-5.09. DH(K3)=21.9 kJ mol-1, DS=133 J K-1 mol-1; DH(Ks)= 14.6, DS=-43.9. By solubility, 47 C: K3=4.35, Ks=-4.68										

****

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

Nitrate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	R4N.X	25°C	2.0M	U	T	K1=0.20		1973CDd (9568)	46
Medium: NH4SCN										
Am+++	dis	R4N.X	30°C	1.0M	U		K1=0.23	B2=0.13	1971KNb (9569)	47
Medium:NH4ClO4										
Am+++	dis	NaClO4	20°C	8.0M	U		K1=-0.33 B3=-1.40	B2=-0.77	1970LKa (9570)	48
Medium:HClO4										
Am+++	sp	KNO3	25°C	var	U		K1=-1.3		1969SGc (9571)	49
Medium:LiNO3										
Am+++	sp	NaClO4	?	1.0M	U		K1=-1.3		1966GIa (9572)	50
Am+++	dis	NaClO4	25°C	1.0M	U		K1=0.26		1965CSb (9573)	51
Am+++	ix	NaClO4	26°C	1.0M	U	I	K1=0.20		1964BPb (9574)	52
In 1 M HClO4: K1=0.15, B2=-0.4										
Am+++	dis	NaClO4	?	1.0M	U		K1=-0.26	B2=0.18	1964BPb (9575)	53

```
Am+++      dis NaClO4 22°C  1.0M U        K1=0.26        1962PMb  (9576)  54
-------------------------------------------------------------------------------
Am+++      dis oth/un   ?   0.0  U    M                  1962ZSb  (9577)  55
Kd(Am+3L+3T(org)=AmL3T3(org))=-0.4  org=kerosene,bp 170-240C(T=(BuO)3PO);
Kd=0.87(T=(BuO)2BuPO); 2.05((BuO)Bu2PO); 3.25(Bu3PO); 0.92(i-pentoxy)2CH3PO
-------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C  1.0M U        K1=0.60        1960LPb  (9578)  56
Medium:NH4Cl,ClO4
*******************************************************************************
N3-                    HL    Azide            CAS 7782-79-8  (441)
Azide;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Am+++      dis none   25°C  0.0  U         K1=1.26   B2=1.60   1983MCb (10180)  57
                                          B3=1.41
*******************************************************************************
OH-                    HL    Hydroxide          (57)
Hydroxide;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Am+++      gl  none   23°C  dil  U                        1990PSc (10987)  58
                                          Kso(Am(OH)3)=-27.35
-------------------------------------------------------------------------------
Am+++      dis oth/un 30°C 0.01M C                        1989MKb (10988)  59
                                          *K1=-3.65
Medium: ClCH2COOH
-------------------------------------------------------------------------------
Am+++      sol NaClO4 25°C 3.00M U         K1=7.56   B2=14.74  1989PKa (10989)  60
                                          B3=31.56
-------------------------------------------------------------------------------
Am+++      sol NaCl   25°C  0.1M U                        1988SKe (10990)  61
                                          K(Am+OH)=6.3
                                          K(Am+3OH)=14.4
                                          K(Am+2OH)=12.2
-------------------------------------------------------------------------------
Am+++      dis NaCl   21°C  0.7M U                        1983CCb (10991)  62
                                          K[Am(OH)+H]=7.54
-------------------------------------------------------------------------------
Am+++      sol none   22°C    0  U                        1983RSc (10992)  63
                                          K[Am(OH)3+2H=Am(OH)]=17.1
-------------------------------------------------------------------------------
Am+++      gl  NaClO4 25°C  1.0M U                        1982NCa (10993)  64
                                          K(AmOH+H)=7.03
-------------------------------------------------------------------------------
Am+++      dis NaClO4   ?  0.10M U                        1973HHd (10994)  65
                                          *K1=-5.30
Medium: LiClO4
-------------------------------------------------------------------------------
```

```
Am+++      oth R4N.X  25°C 0.01M U        K1=10.7   B2=20.9   1972SSf (10995)  66
Medium: 0.005 M NH4ClO4. Method: electrical migration or transference number
--------------------------------------------------------------------------------
Am+++      dis NaClO4 23°C 0.10M U                          1969DHa (10996)  67
                                        *K1=-5.92
Medium: LiClO4
--------------------------------------------------------------------------------
Am+++      oth KCl    15°C 0.01M U        K1=11.3          1969MKb (10997)  68
KCl: 0.005 M. Method: paper electrophoresis
********************************************************************************
PO4---                H3L    Phosphate        CAS 7664-38-2  (176)
Phosphate;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      gl  non-aq 23°C 100%  U                          1987PLc (13100)  69
                                      K(Am+H2PO4)=12.0
Medium: acetonitrile, 0.4 M H2PO4 + 0.1 M ClO4
--------------------------------------------------------------------------------
Am+++      dis oth/un 30°C    0  U                          1986RMc (13101)  70
                                      K(Am+HL)=4.14
                                      K(Am+H2L)=2.13
Medium 0.5 M NH4ClO4. Data are recalculated for 0 ionic strength
--------------------------------------------------------------------------------
Am+++      sp  oth/un 23°C 0.00  U                          1979LFb (13102)  71
                                      K(Am+H2PO4)=2.73
                                      K(Am+2H2PO4)=3.72
--------------------------------------------------------------------------------
Am+++      ix  none   25°C  0.0  U                          1972EZb (13103)  72
                                      K(Am+H2L)=2.51
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  20°C 1.00M U                          1971MOd (13104)  73
                                      K(Am+H2L)=1.48
                                      K(Am+2H2L)=2.10
                                      K(Am+3H2L)=2.85
                                      K(Am+4H2L)=3.4
Medium:NH4Cl
--------------------------------------------------------------------------------
Am+++      oth none     ?   0.0  U                          1969MOc (13105)  74
                                      K(Am+H2L)=2.39
                                      K(Am+2H2L)=3.63
                                      K(Am+3H2L)=5.62
                                      K(Am+4H2L)=6.3
Methods: solubility, ion exchange, distribution, EMF
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.20M U  I                       1966BEc (13106)  75
                                      K(Am+H2L)=1.69
Medium: NH4ClO4. I=0 corr: K=2.51
********************************************************************************
P3O9---               H3L                   CAS 13566-25-1  (235)
```

Cyclotrimetaphosphate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	none	25°C	0.0	U		K1=5.94		1972EZb (13945)	76
Am+++	ix	R4N.X	25°C	0.20M	U	I	K1=3.48		1967ELa (13946)	77

Medium: NH4ClO4. K1=6.06(I=0 corr)

****

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

Thiocyanate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	oth	NaClO4	30°C	1.0M	U	R	K1=0.17		1997BPa (14804)	78

IUPAC evaluation

Am+++	dis	NaClO4	25°C	5.0M	U	T H	K1=0.60		1974KCa (14805)	79

K1=0.42(10 C), 0.68(40 C), 0.72(55 C). By calorimetry, DH(K1)=11.7 kJ mol-1

Am+++	dis	R4N.X	30°C	1.00M	U	T	K1=0.17	B2=0.62	1974KMa (14806)	80

Medium: NH4ClO4/NH4SCN, pH 2.8

Am+++	dis	R4N.X	25°C	2.0M	U		K1=-0.52	B2=0.74	1973CDd (14807)	81
							B3=0.87			

Medium: NH4NO3

Am+++	dis	NaClO4	25°C	1.0M	U	H	K1=0.36	B2=0.04	1972HPb (14808)	82
							B3=-0.15			

DH(K1)=6.69 kJ mol-1, DS=29 J K-1 mol-1. DH(B3)=-25, DS=-83.7

Am+++	sp	NaClO4	22°C	1.0M	U		K1=0.76	B2=0.83	1972HPc (14809)	83
Am+++	dis	NaClO4	30°C	1.0M	U	T	K1=0.17	B2=0.51	1971KNb (14810)	84

also LiClO4 and NH4ClO4 media

Am+++	dis	NaClO4	25°C	1.0M	U T H	T	K1=0.50	B2=0.84	1965CKb (14811)	85

K1=0.40(40 C), 0.19(55 C). DH(K1)=-18.2 kJ mol-1, DS=-51.4 J K-1 mol-1

Am+++	dis	NaClO4	25°C	5.0M	U	T	K1=0.85		1965SEb (14812)	86
							B3=0.55			
							B4=0.00			
Am+++	dis	NaClO4	25°C	5.0M	U				1965SEc (14813)	87
							K2K3=-0.2			
							K4=-0.13			

Kd(AmL3=AmL3(5% TBP in hexane))=2.5

Am+++	ix	NaClO4	?	5.0M	U	I	K1=0.24		1962LYb (14814)	88
							B3=-0.04			

In 0.5 M NH4ClO4 K1=0.66. At I=0 corr K1=1.61. Method: cation exchange

****

SO4-- H2L Sulfate CAS 7664-93-9 (15)

Sulfate;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	oth	NaClO4	25°C	0.10M	C		K1=2.5		1990RRc (15987)	89

Method: electromigration of 241Am. Medium pH=5.5. Also data for pH=2.8.
Tentative value of K2=0.6.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	NaCl	30°C	1.00M	U		K1=1.72		1980KMa (15988)	90
Am+++	dis	NaClO4	25°C	1.0M	U	I	K(Am+HL)=0.64 K(Am+2HL)=0.76		1978RBa (15989)	91
Am+++	dis	none	25°C	0.0	U		K1=3.76	B2=5.64 B3=5.29	1972MCc (15990)	92
Am+++	dis	NaClO4	25°C	0.50M	U		K1=1.85	B2=2.83	1968ALd (15991)	93

By cation exchange: K1=1.86, B2=2.80

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	NaClO4	27°C	1.0M	U		K1=1.49	B2=2.36	1968NAb (15992)	94

In 1 M HClO4: K1=1.22, K(Am+2HL)=0.54

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	NaClO4	?	1.20M	U		K1=1.48	B2=2.59	1968SFa (15993)	95
Am+++	dis	NaClO4	55°C	2.0M	U	T H	K1=1.65	B2=2.38	1967CCd (15994)	96

K1=1.11(0 C), 1.43(25 C), 1.58(40 C); B2=1.73(0 C), 1.85(25 C), 2.03(40 C)
DH(K1)=18.4 kJ mol-1, DS=87.8 J K-1 mol-1

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	NaClO4	25°C	1.0M	U		K1=1.57	B2=2.66	1965SEa (15995)	97
Am+++	ix	NaClO4	26°C	1.15M	U	I	K1=1.49	B2=2.48	1964NWa (15996)	98

In 1 M HClO4: K1=1.18, B2=1.38

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	R4N.X	25°C	1.50M	U	I	K1=1.76	B2=2.11	1960LPb (15997)	99

Medium: NH4Cl,ClO4. K1=1.78(I=0.75), 3.68(I=0 corr.)

****

CH5O3P H2L CAS 13590-71-1 (1752)

Methylphosphonic acid; CH3.PO3H2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	none	25°C	0.00	U	I	K(Am+HL)=2.79		1967BEa (18123)	100

At I=0.5 M NH4ClO4: K(Am+HL)=1.84

****

CH5O4P H2L CAS 2617-47-2 (1977)

Hydroxymethylphosphonic acid; HO.CH2.PO3H2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	ix	R4N.X	25°C	0.20M	U		K(Am+HL)=1.56 K(Am+2HL)=3.18	1972EZd (18146)	101

Medium: NH4ClO4

****

C2HO2Cl3 HL Trichloroacetic CAS 76-03-9 (1205)
Trichloroethanoic acid; Cl3C.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	cal	NaClO4	25°C	2.00M	U		K1=0.32	1980ECa (18326)	102

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	cal	NaClO4	25°C	2.00M	U		K1=0.79	1980ECa (18391)	103

****

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
Am+++	oth	NaClO4	25°C	0.10M	C	I	K1=5.01 B2= 8.16	1990RRc (18794)	104

Method: electromigration of 241Am. Data for 0.01, 0.05 and 0.10 M.
At I=0, K1=5.90, K2=3.72.

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	sol	NaClO4	25°C	0.30M	U	I	B3=11.56	1987PKa (18795)	105

By extrapolation to I=0 : K1=6.68; B2=9.94; B3=11.62

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	oth	oth/un	25°C	0.10M	U		K1=5.30 B2=8.90	1971STe (18796)	106

Method : electrical migration or transference number

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	ix	NaClO4	25°C	0.50M	U		K1=4.82 B2=8.60	1968ALd (18797)	107

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	dis	R4N.X	20°C	0.10M	U		B2=8.3 B3=11.8	1966STa (18798)	108

Medium : NH4Cl

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	oth	oth/un	25°C	0.10M	U		K1=6.15 B2=10.54	1965SMi (18799)	109

Method: electromigration

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	dis	NaClO4	25°C	1.0M	U		K1=4.63 B2=8.35 B3=11.15	1964SEa (18800)	110

Am+++ ix oth/un 23°C 0.20M U K1=5.99 B2=10.15 1960LPa (18801) 111
****
C2H3O2Cl HL Chloroacetic CAS 79-11-8 (34)
Chloroethanoic acid; ClCH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ cal NaClO4 25°C 2.00M U K1=1.31 1980ECa (19355) 112
****
C2H4O2 HL Acetic acid CAS 64-19-7 (36)
Ethanoic acid; CH3.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ dis NaCl 25°C 0.30M C I K1=1.73 1999MBb (19890) 113
Method: Solvent extraction into n-heptane, 0.05 M di-(2-ethylhexyl)-
phosphoric acid. Data for 0.3-5.0 m NaCl. At I=0.0, K1=2.49.

Am+++ cal NaClO4 25°C 2.00M U H 1989RSa (19891) 114
DH(K1)=-6.8 kJ mol-1

Am+++ dis oth/un 25°C 0.50M U K1=2.39 1987RMa (19892) 115
Medium: NH4ClO4/HClO4. By distribution between 0.5 M NH4ClO4 and benzene
---
Am+++ dis NaClO4 0°C 2.00M U T K1=1.69 1970CSd (19893) 116
At 25 C: K1=1.96, 40 C: K1=2.11, 55 C: K1=2.24

Am+++ oth none ? 0.00 U K1=2.97 B2=5.07 1969MOc (19894) 117
B3=6.54
B4=7.56
B5=8.25
B6=8.61
Data from survey of literature data

Am+++ dis oth/un ? 0.10M U K1=1.98 B2=3.34 1969VOc (19895) 118
B3=3.73

Am+++ ix NaClO4 20°C 0.50M U K1=1.99 B2=3.28 1962GRa (19896) 119
B3=3.9
****
C2H4O2S H2L Thioglycolic CAS 68-11-1 (596)
Mercaptoethanoic acid; HS.CH2.COOH

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ ix NaClO4 20°C 0.50M U T 1962GRa (20300) 120
K(Am+HL)=1.55
K(AmHL+HL)=2.6
****

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
Am+++	dis	NaClO4	25°C	2.00M	U	T T	K1=2.59	B2=4.40	1972CDb (20490)	121

0.5 C: K1=2.66, K2=1.80; 52.6 C: K1=2.49, K2=1.98

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	NaClO4	20°C	0.50M	U		K1=2.82	B2=4.86	1962GRb (20491)	122
							B3=6.3			

****

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
Am+++	ix	KCl	25°C	1.00M	U		K1=4.1	1974RKb (21492)	123
Am+++	dis	NaClO4	25°C	2.0M	U	T H T		1968TCa (21493)	124
							K(Am+HL)=0.69		

K=0.48(0 C), 0.57(11 C), 0.69(25 C), 0.78(40 C). DH=12.1 kJ mol-1, DS=54

****

C2H5O5P H3L CAS 4408-78-0 (4225)
Phosphonoethanoic acid; HOOC.CH2.PO3H2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	ix	none	25°C	0.00	U			1972EZc (21889)	125
							K(Am+HL)=5.15		
							K(Am+2HL)=8.5		
							K(Am+H2L)=2.75		

****

C3H4O3 HL Pyruvic acid CAS 127-17-3 (1152)
2-Oxopropanoic acid; CH3.CO.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	oth/un	25°C	2.00M	U		K1=2.03	B2=3.34	1971ALe (24044)	126
							B3=3.87			

****

C3H6O3 HL L-Lactic acid CAS 79-33-4 (82)
L-2-Hydroxypropanoic acid; CH3.CH(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	NaClO4	25°C	1.00M	C	H	K1=2.43	B2=4.23	1984LLa (25397)	127
							B3=5.65			
							B4=6.0			

Solvent extraction (5x10-4 M HDEHP in n-heptane pH 4.00)

```
Am+++      oth KCl    10°C 1.50M U        K1=2.57   B2=4.21   1972SNa (25398) 128
Method: (gelatinized cellulose acetate), electrophoresis
--------------------------------------------------------------------------------
Am+++      dis oth/un 25°C 2.00M U        K1=2.52   B2=4.77   1971ALe (25399) 129
                                          B3=5.98
--------------------------------------------------------------------------------
Am+++      dis R4N.X  20°C 0.50M U                  1967ESa (25400) 130
                                          B3=6.71
Background salt is NH4ClO4
********************************************************************************
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
--------------------------------------------------------------------------------
Am+++      ix  KCl    25°C 1.00M U        K1=3.9         1974RKb (26139) 131
--------------------------------------------------------------------------------
Am+++      dis oth/un 25°C 2.00M U        K1=0.79        1971ALe (26140) 132
********************************************************************************
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
--------------------------------------------------------------------------------
Am+++      ix  KCl    25°C 1.00M U        K1=4.2         1974RKb (26752) 133
********************************************************************************
C3H7NO3                HL    Serine           CAS 56-45-1  (49)
2-Amino-3-hydroxypropanoic acid; H2N.CH(CH2.OH)COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      ix  KCl    25°C 1.00M U        K1=4.3         1974RKb (27117) 134
********************************************************************************
C3H9O3P                HL                     CAS 38585-11-9  (4238)
Ethyl(hydroxymethyl)phosphinic acid; C2H5(HO.CH2).PO2H
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.20M U        K1=1.81        1972EZd (27997) 135
Medium: NH4ClO4
********************************************************************************
C4H2O4                 H2L    Squaric acid     CAS 2892-51-5  (439)
3,4-Dihydroxy-3-cyclobutene-1,2-dione;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 1.00M U        K1=2.17   B2=3.10   1972CSb (28637) 136
Medium: NH4ClO4
********************************************************************************
C4H6O5                 H2L    Malic acid       CAS 617-48-1  (393)
```

2-Hydroxybutane-1,4-dioic acid, Hydroxy-succinic acid; HOOC.CH2.CH(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	KCl	25°C	1.00M	U		K1=4.5		1974RKb (30586)	137

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	oth/un	25°C	0.50M	U		K1=4.20	B2=6.84	1987RMa (31010)	138

By distribution between 0.5 M NH4ClO4 and benzene

****

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
Am+++	dis	oth/un	20°C	0.10M	U		K1=3.9	B2=6.78	1966STa (31193)	139
Am+++	dis	NaCl	?	0.10M	U		B2=7.80		1965MOb (31194)	140

Method: paper electrophoresis

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	NaCl	25°C	0.1M	U		K1=4.81	B2= 6.75	1984SCa (31815)	141

For 0.7 M NaCl K1=4.53; B2=6.65

****

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	cal	NaClO4	25°C	0.50M	U	H			1989RSa (32198)	142

DH(K1)=4.5 kJ mol-1

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	sp	R4N.X	25°C	0.10M	U		K1=6.93		1969DBa (32199)	143

Medium: NH4ClO4

****

C4H8N2O3 HL Asparagine CAS 70-47-3 (17)
2-Aminobutanedioic acid 4-amide; H2N.CH(CH2.CO.NH2).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	KCl	25°C	1.00M	U		K1=5.1		1974RKb (32682)	144

****

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
Am+++	oth	KNO3	25°C	0.10M	U		K1=10.98	B2=20.0	1971LSc (33100)	145
							K(Am+HL)=4.1			

Method: electrical migration or transference number

C4H8O3 HL CAS 594-61-6 (81)
2-Hydroxy-2-methylpropanoic acid; (CH3)2C(OH).COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	oth	oth/un	25°C	0.10M	U		K1=2.92	B2=5.11	1971SHb (33444)	146
							B3=6.28			

Method: electrical migration or transference number

Am+++	ix	oth/un	?	?	U		K1=2.72		1956OCa (33445)	147

C4H14N2O4P2 H2L CAS 37107-07-6 (4287)
Ethylenebis(iminomethylenephosphonous acid)

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	oth/un	25°C	0.50M	U				1971EZd (35828)	148
							K(Am+H2L)=6.11			

C4H14N2O6P2 H2L EDDPO CAS 1733-49-9 (2435)
1,2-Diaminoethane-N,N'-bis(methylenephosphonic) acid; (H2O3P.CH2.NH.CH2)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	R4N.X	25°C	0.50M	U				1973EZa (35868)	149
							K(Am+H2L)=6.11			

Medium: NH4ClO4

Am+++	oth	oth/un	25°C	0.10M	U		K1=16.52		1971SHb (35869)	150
							K(Am+HL)=12.30			
							K(Am+H2L)=8.48			
							K(Am+H3L)=6.30			

Method: electrical migration or transference number

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
Am+++	ix	KCl	25°C	1.00M	U		K1=5.6		1974RKb (39064)	151

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	KCl	25°C	1.00M	U		K1=4.7		1974RKb (41078)	152

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

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	oth/un	RT	0.10M	C		K1=8.0	B2=12.10	1984BGb (46031)	153
							B(AmHL)=10.1			
							B(AmH2L2)=20			
							B(AmHL2)=16.3			

Solvent extraction from 0.10 M LiClO4 into thenoyltrifluoroacetone/benzene
By potentiometry: K1=8.69, B(AmHL)=11.36, B(AmHL2)=18.97, B2=14.29

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	NaClO4	25°C	0.10M	U				1974HHa (46032)	154
							K(AmL2+6H=Am+2H3L)=14.00			
							K(Am(HL)+5H=Am+2H3L)=9.56			
Am+++	dis	oth/un	25°C	0.10M	U		K1=7.68		1971GBa (46033)	155
							K(Am+2H3L=AmHL2+5H)=-9.7			
Am+++	ix	NaCl	25°C	0.10M	U		K1=6.74	B2=18.29	1971OOa (46034)	156
							K(Am+HL)=5.31			
							K(Am+2HL)=8.23			
Am+++	oth	oth/un	25°C	0.10M	U		K1=7.74	B2=10.94	1971STe (46035)	157
							K(AmL+HL)=2.50			

Constants obtained by survey of literature data

****
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
Am+++	cal	NaClO4	25°C	0.50M	U	H			1989RSa (46694)	158

DH(K1)=12.6 kJ mol-1

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	dis	oth/un	rt	6.00M	U		K1=11.7	B2=20.28	1975KPb (46695)	159

Method: distribution of Am betw. 1M trioctylamine in Toluole/EDTA in 6M
LiNO3 aq.; pH=3-4

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	oth	NaClO4	25°C	0.10M	U	T T	K1=11.99	B2=21.10	1972ESb (46696)	160

K1(15 C)=11.90, K1(50 C)=11.71, K2(15 C)=9.13, K2(50 C)=8.68

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values		Reference	ExptNo
Am+++	ix	R4N.X	20°C	1.00M	U		K1=10.87		1971MOc (46697)	161

```
                                        K(Am+L+HL)=13.65
--------------------------------------------------------------------------------
Am+++      oth oth/un 20°C 0.10M U       K1=11.55  B2=19.52  1971SHb (46698) 162
                                        K(Am+L+HL)=13.56
Method: electrical migration or transference number
--------------------------------------------------------------------------------
Am+++      oth none     ?  0.00  M       K1=13.46       1969MOc (46699) 163
Constant from survey of literature data
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.10M U       K1=11.52  B2=20.24  1968EAa (46700) 164
Medium: NH4ClO4
--------------------------------------------------------------------------------
Am+++      dis R4N.X  20°C 0.10M U       K1=11     B2=19.74  1966STa (46701) 165
Medium: NH4Cl
********************************************************************************
C6H9N3O2               HL    Histidine        CAS 71-00-1  (1)
2-Amino-3-(4'-imidazolyl)propanoic acid; H2N.CH(CH2.C3H3N2)COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      ix  KCl    25°C 1.00M U       K1=4.7         1974RKb (47531) 166
********************************************************************************
C6H11NO5              H2L    HIMDA            CAS 93-62-9  (192)
N-(2-Hydroxyethyl)iminodiethanoic acid; HO.CH2.CH2.N(CH2.COOH)2
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      oth KNO3   25°C 0.10M U                        1972SHb (48689) 167
                                        K(Am+HL)=9.30
                                        K(Am+2HL)=16.50
Method: electrical migration or transference number
--------------------------------------------------------------------------------
Am+++      dis oth/un 25°C 0.10M U       K1=9.3         1971EVb (48690) 168
--------------------------------------------------------------------------------
Am+++      oth oth/un 25°C 0.10M U       K1=9.3    B2=16.5   1971SHb (48691) 169
Method: electrical migration or transference number
--------------------------------------------------------------------------------
Am+++      sp  R4N.X  25°C 0.10M U       K1=9.75   B2=16.96  1969DBa (48692) 170
Medium: NH4ClO4
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.10M U       K1=9.14   B2=17.03  1969EBa (48693) 171
Medium: NH4ClO4
********************************************************************************
C6H14N4O2              HL    Arginine         CAS 74-79-3  (40)
2-Amino-5-guanidopentanoic acid; H2N.CH((CH2)3.NH.C(:NH)(NH2)COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      ix  KCl    25°C 1.00M U       K1=3.7         1974RKb (51002) 172
********************************************************************************
```

C6H20N2O12P4 H8L EDTPA CAS 1429-50-1 (434)
Ethane-1,2-bis(iminobis(methylenephosphonic acid)); ((H2O3PCH2)2NCH2.)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	oth	oth/un	25°C	0.10M	U		K1=22.47 K(Am+HL)=18.45 K(Am+H2L)=14.90 K(Am+H3L)=11.17 K(Am+H4L)=7.33	1971SHb (52320)	173

K(Am+H5L)=4.80. Method: electrical migration or transference number

****

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
Am+++	gl	NaClO4	25°C	1.0M	C		K1=8.06 B2=15.34	1983NCa (54938)	174
Am+++	gl	NaClO4	25°C	1.0M	U		K1=8.06 B2=15.34	1979NCa (54939)	175

****

C7H11NO6 H3L CAS 40199-58-4 (3165)
N-(2'-Carboxyethyl)iminodiethanoic acid; HOOC.CH2.CH2.N(CH2.COOH)2

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	ix	R4N.X	25°C	0.10M	U		K1=10.54 B2=17.83 K(Am+HL)=4.02	1968EAa (56877)	176

Medium: NH4ClO4

****

C7H15O3P HL CAS 9095-99-6 (4458)
Diethylphosphinylpropanoic acid; (CH3.CH2)2.PO.CH2.CH2.COOH

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	ix	R4N.X	25°C	0.50M	U		K1=1.76 B2=3.17	1972EZa (58024)	177

Medium: NH4ClO4

****

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
Am+++	dis	oth/un	25°C	0.10M	U		K1=3.4 B2=8.50 K3=5.0	1969KSa (58598)	178
Am+++	dis	non-aq	25°C	100%	U	M	K(AmL3+A)=1.18 K(AmL3+2A)=1.56	1969KSa (58599)	179

Medium: CHCl3. A=hexanone

```
-------------------------------------------------------------------------------
Am+++      dis R4N.X  20°C  1.0M U        K1=5.42   B2=11.50  1968RSe (58600) 180
Medium: NH4Cl
*******************************************************************************
C8H13NO6              H3L                        (4540)
N-(3-Carboxypropyl)iminodiethanoic acid; HOOC.CH2.CH2.CH2.N(CH2.COOH)2
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.10M U                       1968EAa (61800) 181
                                        K(Am+HL)=3.53
Medium: NH4ClO4
*******************************************************************************
C8H22N2O6P2           H4L    EDDIPH           CAS 13516-59-1  (1355)
Diaminoethane-N,N'-di(isopropylphosphonic)acid;(CH2.NH.C(CH3)2.PO3H2)2
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Am+++      oth oth/un 25°C 0.10M U        K1=18.0        1971SHb (63350) 182
                                        K(Am+HL)=13.95
                                        K(Am+H2L)=8.94
                                        K(Am+H3L)=6.26
Method : electrical migration or transference number
*******************************************************************************
C9H11NO2               HL    Phenylalanine    CAS 63-91-2  (2)
2-Amino-3-phenylpropanoic acid; H2N.CH(CH2.C6H5)COOH
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Am+++      ix  KCl    25°C 1.00M U        K1=4.0         1974RKb (65924) 183
*******************************************************************************
C9H15NO6              H3L                        (4656)
N-(Carboxybutyl)iminodiethanoic acid; HOOC.(CH2)4.N(CH2.COOH)2
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Am+++      ix  oth/un 25°C 0.10M U                       1968EAa (67443) 184
                                        K(Am+HL)=3.47
Medium: NH4ClO4
*******************************************************************************
C10H7O2F3              HL                        CAS 326-06-7  (196)
3-Benzoyl-1,1,1-trifluoroacetone; CF3.CO.CH2.CO.C6H5
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Am+++      dis oth/un 25°C 0.10M U                       1969KSa (69134) 185
                                        B3=14.84
-------------------------------------------------------------------------------
Am+++      dis non-aq 25°C 100%  U                       1969KSa (69135) 186
                                        K(AmL3+A)=1.31
```

K(AmL3+2A)=1.68
Medium: CHCl3. A=hexone
****
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
---
Am+++ dis R4N.X 25°C 0.10M U 1971EVa (71037) 187
K(Am+HL)=6.80
K(Am+2HL)=11.86
Medium: 0.1 M NH4ClO4
****
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
---
Am+++ ix R4N.X 25°C 0.10M U K1=8.96 B2=17.71 1969EBa (71249) 188
Medium: 0.1 M NH4ClO4
****
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
---
Am+++ cal NaClO4 25°C 0.50M U H 1989RSa (73583) 189
DH(K1)=23.9 kJ mol-1

Am+++ dis oth/un rt 6.00M U K1=17.38 1975KPb (73584) 190
Method: distribution of Am betw. 1M Trioctylamine in Toluol/EDTA in 6M LiNO3 aq.; pH=3-4

Am+++ oth KNO3 25°C 0.10M U T K1=17.0 1972SHc (73585) 191
K(Am+HL)=9.21
K(Am+OH+L)=19.98
Method: electrical migration or transference number

Am+++ kin oth/un 24°C 0.50M U K1=18.0 1971DCa (73586) 192

Am+++ ix R4N.X ? 0.10M U I K1=17.14 1971EZb (73587) 193
Medium: (NH4ClO4), I= near zero, K1=19.80

Am+++ oth oth/un 20°C 0.10M U K1=17.0 1971SHb (73588) 194
K(Am+HL)=9.20
Method: electrical migration or transference number

Am+++ sp R4N.X 25°C 0.10M U K1=18.06 1969DBa (73589) 195
Medium: 0.1 M NH4ClO4

```
Am+++      oth oth/un 25°C 0.10M U      T K1=17.0        1967LMa (73590) 196
--------------------------------------------------------------------------------
Am+++      dis R4N.X  20°C 0.10M U      T K1=16.91       1966STa (73591) 197
Medium: 0.1 M NH4Cl
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.10M U        K1=18.16       1957FSa (73592) 198
Medium: 0.1 M NH4ClO4
********************************************************************************
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
--------------------------------------------------------------------------------
Am+++      dis KCl    25°C 0.10M U        B2=2.78        1971ZMa (75333) 199
                                        K(Am+L+HL)=1.0
                                        K(Am+2HL)=1.30
--------------------------------------------------------------------------------
Am+++      sp  R4N.X  25°C 0.10M U        K1=16.18       1969DBa (75334) 200
Medium: NH4ClO4
********************************************************************************
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
--------------------------------------------------------------------------------
Am+++      dis R4N.X  25°C 0.10M U        K1=0.21        1991MMc (75971) 201
********************************************************************************
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
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.10M U        K1=8.92        1969EBa (77822) 202
Medium: NH4ClO4
********************************************************************************
C11H12N2O2             HL    Tryptophan       CAS 73-22-3  (3)
2-Amino-3-(3-indolyl)propanoic acid; H2N.CH(CH2.C8H6N)COOH
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      ix  KCl    25°C 1.00M U        K1=4.6         1974RKb (78190) 203
********************************************************************************
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
--------------------------------------------------------------------------------
Am+++      cal NaClO4 25°C 0.50M U   H                   1989RSa (79421) 204
DH(K1)=-13.3 kJ mol-1
--------------------------------------------------------------------------------
```

Am+++ dis NaCl 25°C 0.10M C K1=13.45 1985CMc (79422) 205
Method: extraction of 241Am from 0.1 M NaCl (pH 5.5) into toluene/HDEHP.
****
C12H9N2O2Cl3 HL CAS 38580-17-5 (4952)
1-Phenyl-3-methyl-4-trichloroacetylpyrazol-5-one;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ dis oth/un 25°C 0.10M U 1973BKc (80596) 206
B3=7.47
****
C12H9N2O2F3 HL CAS 71132-72-4 (4953)
1-Phenyl-3-methyl-4-trifluoroacetylpyrazol-5-one;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ dis oth/un 25°C 0.10M U 1973BKc (80598) 207
B3=9.70
****
C12H11N2O2Cl HL CAS 31197-05-4 (4956)
1-Phenyl-3-methyl-4-chloroacetylpyrazol-5-one;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ dis oth/un 25°C 0.10M U B2=7.47 1973BKc (80857) 208
****
C12H12N2O2 HL CAS 4173-74-4 (4915)
1-Phenyl-3-methyl-4-acetylpyrazol-5-one;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ dis oth/un 25°C 0.10M U 1973BKc (81040) 209
B3=12.23
****
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
---
Am+++ dis R4N.X 25°C 0.10M U K1=0.55 1991MMc (83265) 210

Am+++ oth R4N.X 25°C 0.10M C 1985SKd (83266) 211
Metal ion: Am++. K1=2.6-3.0. Method: from correlation of values for
Sr, Ba, Ra, Eu, Yb, Cf vs ionic radius. Medium: 0.10 M Me4NI.
****
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
---

```
Am+++      dis NaCl   25°C 1.00M U        K1=6.05        1995MMc (83813) 212
Method: solvent extraction tracer technique
********************************************************************************
C14H9O2F3              HL                        (3429)
1,1,1-Trifluoro-1'-naphthoylacetone;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      dis oth/un 25°C 0.10M U                         1969KSa (86869) 213
                                        B3=18.31
********************************************************************************
C14H16O3P2             HL                     CAS 1638-77-3  (5072)
(Methylenephosphinylmethyl)phenylphosphinic acid;
--------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.20M U  I     K1=3.35        1972EZb (88025) 214
Medium: NH4ClO4. I=0: K1=4.15
********************************************************************************
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
--------------------------------------------------------------------------------
Am+++      dis NaClO4 20°C 0.10M U        K1=18.70       1990GBc (88578) 215
--------------------------------------------------------------------------------
Am+++      cal NaClO4 25°C 0.50M U   H                    1989RSa (88579) 216
DH(K1)=10.8 kJ mol-1
--------------------------------------------------------------------------------
Am+++      ix  oth/un 25°C 0.10M U TI     K1=18.79       1971EZc (88580) 217
In I=0, K1=21.45
At 80 C : K1(0.05)=19.28, K1(0.06)=19.32, K1(0.07)=19.22, K1(0.17)=18.23
--------------------------------------------------------------------------------
Am+++      oth oth/un 25°C 0.10M U        K1=18.34       1971SHb (88581) 218
                                         K(Am+HL)=9.20
Method: electrical migration or transference number.
--------------------------------------------------------------------------------
Am+++      oth oth/un   ?   0.0  U        K1=21.5        1969MOc (88582) 219
From survey of literature data
--------------------------------------------------------------------------------
Am+++      oth KCl    20°C 0.10M U        K1=18.33       1967SMa (88583) 220
                                         K(Am+HL)=2.6
Method: ionic migration.  Medium: (KCl,HCl).
--------------------------------------------------------------------------------
Am+++      ix  R4N.X  25°C 0.10M U        K1=18.79       1966BAc (88584) 221
Medium: NH4ClO4
--------------------------------------------------------------------------------
Am+++      dis R4N.X  20°C 0.10M U        K1=18.21       1966STa (88585) 222
Medium: NH4Cl
********************************************************************************
```

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
Am+++	cal	NaClO4	25°C	0.50M	U	H		1989RSa (89149)	223
DH(K1)=39.5 kJ mol-1									
Am+++	sp	oth/un	20°C	0.50M	U		K1=22.09	1972PRc (89150)	224
By pH method: K1=22.10									
Am+++	ix	R4N.X	25°C	0.10M	U		K1=23.32	1971BRa (89151)	225
							K(Am+HL)=15.46		
Medium: NH4ClO4									
Am+++	ix	R4N.X	20°C	1.0M	U		K1=21.3	1971MOc (89152)	226
Medium: NH4Cl									
Am+++	oth	oth/un	25°C	0.10M	U		K1=22.74	1971SHb (89153)	227
							K(Am+HL)=14.30		
Method: electrical migration or transference number.									
Am+++	sp	R4N.X	25°C	0.10M	U		K1=24.03	1969DBa (89154)	228
Medium: NH4ClO4									
Am+++	oth	oth/un	?	0.0	U		K1=25.5	1969MOc (89155)	229
Method: from survey of literature data									
Am+++	oth	KNO3	25°C	0.10M	U		K1=22.74	1968LFb (89156)	230
Method: electromigration									
Am+++	oth	oth/un		0.10M	U		K1=23.2	1966STb (89157)	231
Literature data from ORNL-3651									
Am+++	ix	R4N.X	25°C	0.10M	U		K1=22.92	1965BAc (89158)	232
Medium: NH4ClO4									

****

C14H26N2O7 H2L (1567)
1,4,10-Trioxa-7,13-diazacyclopentadecane-N,N'-diethanoic acid;

Metal	Mtd	Medium	Temp	Conc	Cal	Flags	Lg K values	Reference	ExptNo
Am+++	dis	R4N.X	25°C	0.10M	U		K1=12.86	1990MMc (90174)	233
Medium: 0.1M Me4NCl									
Am+++	dis	oth/un	25°C	0.10M	U			1990MMe (90175)	234
							K(Am+H4L=AmL+4H)=12.86		

****

C16H30N2O8 H2L CAS 72912-01-7 (1568)
1,4,10,13-Tetraoxa-7,16-diazacyclooctadecane-N,N'-diethanoic acid;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ dis R4N.X 25°C 0.10M U K1=13.33 1990MMc (95025) 235
Medium: 0.1 M Me4NCl

Am+++ dis oth/un 25°C 0.10M U 1990MMe (95026) 236
K(Am+H4L=AmL+4H)=13.33
Method: solvent extraction
****
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
---
Am+++ dis oth/un 25°C 0.10M U 1973BKc (95873) 237
B3=16.49
****
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
---
Am+++ sp R4N.X 25°C 0.10M U K1=27.61 1969DBa (98011) 238
Medium: NH4ClO4.
****
C39H75NO2P2 L CAS 474511-20-1 (8588)
2,6-Bis[[bis(2-ethylhexyl)phosphinyl]methyl]pyridine;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ dis non-aq 25°C 100% C T HM 2002NLa (106726) 239
Method: extraction 241Am from 0.5 M HNO3 into 0.1 M ligand in n-dodecane.
K(Am+3NO3+2L(org)=AmL2(NO3)3(org))=5.61. Data 15-45 C. DH and DS values.
****
Polymer Humic acid (1524)
Humic acid;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am+++ dis KCl 25°C 0.10M U 1978BCa (108237) 240
K(Am+HnL)=6.83 at pH 4.5
K(Am+2HnL)=10.58 at pH 4.5
****
e- HL Electron (442)
Electron;

Metal Mtd Medium Temp Conc Cal Flags Lg K values Reference ExptNo
---
Am++++ EMF oth/un 22°C 5.00M U 1970YGa (309) 241

```
                                        K=29.7-29.9(1.74-1.75V)
Medium: 5-14.5 M H3PO4; K: Am(IV) + e=Am(III)
-------------------------------------------------------------------------------
Am++++     oth none   25°C  0.0  U                        1970YGa   (310) 242
                                        K(Am+e=Am(III))=42.3(2.50V)
Method:Estimated data
-------------------------------------------------------------------------------
Am++++     oth none   25°C  0.0  U                        1957GCa   (311) 243
                                        K(Am+e=Am(III)=41(2400 mV)
From thermodynamic data and estimated
*******************************************************************************
PO4---                 H3L    Phosphate        CAS 7664-38-2  (176)
Phosphate;
-------------------------------------------------------------------------------
Metal      Mtd Medium Temp Conc Cal Flags Lg K values       Reference ExptNo
-------------------------------------------------------------------------------
Am++++     gl  non-aq 23°C 100%  U                        1987PLc (13107) 244
                                        K(Am+3H2PO4)=46.39
Medium: acetonitrile, 0.4 M H2PO4 + 0.1 M ClO4
-------------------------------------------------------------------------------
Am++++     sp  oth/un 23°C 0.00  U                        1979LFb (13108) 245
                                        K(Am+3H2PO4)=14.2
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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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